JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

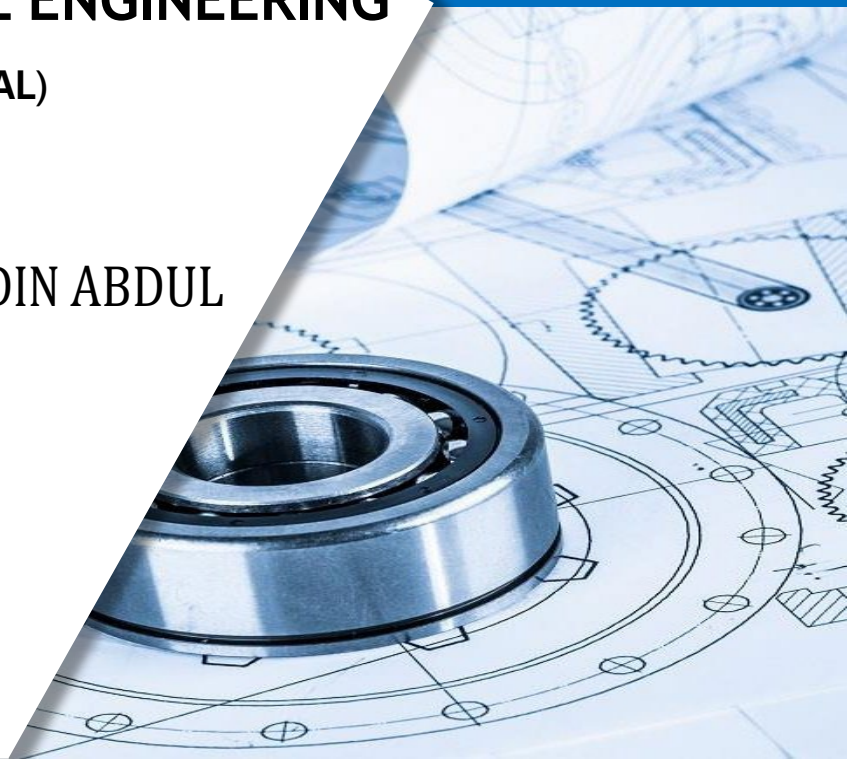
SELF ASSESSMENT REPORT

DIPLOMA IN MECHANICAL ENGINEERING

(DIPLOMA KEJURUTERAAN MEKANIKAL)

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

2025



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POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
(PSA)

2025

Department of Mechanical Engineering
Politeknik Sultan Salahuddin Abdul Aziz Shah
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Ministry of Higher Education Malaysia

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This publication was prepared as part of the Self-Assessment Report (SAR) for the Diploma in Mechanical Engineering programme.

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PREFACE

This Self-Assessment Report (SAR) has been prepared for the Diploma in Mechanical Engineering programme offered by Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA). The report serves as a comprehensive document to demonstrate the programme's commitment towards academic excellence, continuous quality improvement, and compliance with the standards and requirements established by the Engineering Technology Accreditation Council (ETAC), Board of Engineers Malaysia (BEM), and the Malaysian Qualifications Agency (MQA).

The preparation of this report involved the collective efforts and collaboration of the Department of Mechanical Engineering, academic staff, management team, industry partners, students, alumni, and supporting personnel. The report highlights various aspects of the programme, including curriculum development, teaching and learning processes, facilities, student achievements, industry collaborations, quality management systems, and continuous improvement initiatives that support the development of competent and industry-ready graduates.

This SAR reflects PSA's aspiration to remain a leading TVET institution that is responsive to technological advancements and industrial needs, particularly in the field of industrial packaging and mechanical engineering. It is hoped that this report will provide clear evidence of the programme's strengths, achievements, and future direction in producing holistic, skilled, and competitive graduates who are able to contribute effectively to the nation's industrial and economic development.

The Department of Mechanical Engineering would like to express its sincere appreciation to all individuals and organizations who have contributed directly and indirectly towards the successful preparation of this report.

Department of Mechanical Engineering
Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)
2025

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DEFINITIONS

Acronyms

AAS = Academic Advisory System
APACC = Asia Pacific Accreditation and Certification Commission
BEM = Board of Engineers Malaysia
CAC = Curriculum Advisory Committee
CDC = Curriculum Development Committee
CDD = Curriculum Development Division
CDIO = Conceive, Design, Implement & Operate
CGPA = Cumulative Grade Point Average
CIDOS = Curriculum Information Document Online System
CISEC = Corporate Industrial Services & Employment Center
CIST = Course Item Specification Table
CLO = Course Learning Outcomes
CPCM = Career Path Competency Matrix
CSR = Corporate Service Responsibility
DKM = Diploma in Mechanical Engineering
FEIST = Final Exam Item Specification Table
FRGS = Fundamental Research Grant Scheme
GPA = Grade Point Average
HEP = Student Affairs Department
HLP = Hadiah Latihan Persekutuan (Federal Training Award)
HOC = Head of Centre
HOD = Head of Department
HOP = Head of Programme
HOU = Head of Unit
HRMIS = Human Resourses Management Information System
ICT = Information and Communication Technology
IEM = Institute of Engineers Malaysia
IHL = Institute of Higher Learning
JKM = Mechanical Engineering Department
JPA = Jabatan Perkhidmatan Awam (Mechanical Engineering Department)
JPK = Jabatan Pembangunan Kemahiran
JPPKK = Jabatan Pendidikan Politeknik dan Kolej Komuniti
JSKK = Department of Sports, Co-Curriculum and Culture
MAMPU = Malaysian Administrative Modernisation and Management Planning Unit
MOE = Ministry of Education
MOOC = Massive Open Online Course
MQA = Malaysian Qualification Agency
OBE = Outcome Based Education
PB = Pusat Bertauliah
PCB = Polytechnic Curriculum Board
PEO = Program Educational Objectives
PEO = Programme Educational Objectives
PPK = Program Peningkatan Kemahiran (Skill Development Programme)
PPRN = Private Public Research Network
PSA = Politeknik Sultan Salahuddin Abdul Aziz Shah
SKM = Sijil Kemahiran Malaysia
SLTP = Skim Latihan Tenaga Pengajar (Teaching Staff Training Scheme)

SPAk = Sistem Penasihatan Akademik
SPMP = Sistem Pengurusan Maklumat Pelajar
SPPA = Asset Observation Management System
T&L = Teaching & Learning
TECC = Technology Enable Collaborative Class
TVET = Technical and Vocational Education and Training
3P2K = Polytechnic and Community College study Program Subcommittee

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G1-1 Provide general information on the IHL and the specific programme together with academic calendar.

A. History and Background of Polytechnic

Polytechnic education was first introduced in Malaysia by establishing its first Polytechnic, Ungku Omar Polytechnic, in Ipoh, under the United Nations Development Plan in 1969. The need to provide broader access to technical education and training for the country was given prominence by the Cabinet Committee on Education in 1979 and the first National Industrial Master Plan (1985–1995). All plans, including the Cabinet Committee's certificate on training (1991), have enabled the establishment of more Polytechnics and added study programs in engineering, commerce and services. On 20 November 2009, the Cabinet of Ministers approved a Memorandum from the Minister of Higher Education in relation to the Polytechnic Transformation Direction involving the following four cores:

First: Empower polytechnics towards becoming an option comparable to public universities;
Second: Develop study and research programs in the field of propulsion that rely on the strengths of each polytechnic;
Third: Empower polytechnic citizens with high knowledge and skills;
Fourth: Build a highly reputable image of an excellent work culture.

In addition, the Cabinet of Ministers on 26 March 2010 considered the Memorandum from the Minister of Higher Education agreeing to establish ten METrO Polytechnics, four polytechnics in the 9th RM and six polytechnics in the 10th RM. The Cabinet established and implemented community colleges in each parliamentary constituency on 5 July 2000. However, in 2005, the Cabinet reconsidered the concept and agreed that establishing community colleges should be based on the local area's needs. In 2007, the Cabinet of Ministers decided that community colleges should be made Lifelong Learning hubs. In addition, in 2014, the Council of Ministers took note of the implementation of the Lifelong Islamic Education (PISH) program at community colleges.

To strengthen the role of Polytechnics and Community Colleges in education and training, on 24 March 2017, the Cabinet approved the merger of Polytechnics and Community Colleges into one department. The new organizational structure of the Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) was approved by the Public Service Department (JPA) on 23 February 2018.

B. History and Background of Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), formerly known as the Politeknik Shah Alam, was built on 112 acres of land in the state of Selangor. PSA is the eighth polytechnic in Malaysia under the World Bank Program. In March 2002, PSA was renamed Politeknik Sultan Salahuddin Abdul Aziz Shah in honour of the late DYMM Seri Paduka Baginda Yang Di Pertuan Agong XI. Sultan Selangor, Sultan Sharafuddin Idris Shah, conducted the renaming ceremony.

PSA commenced its administrative activities in January 1997 and successfully enrolled 640 students during its first enrolling session. The primary focus of PSA's activity is the implementation of the semi-professional learning and teaching process at the level of certificates, diplomas and advanced

diplomas in engineering and commerce studies. With six academic departments consisting of the Department of Mechanical Engineering (JKM), Department of Civil Engineering (JKA), Department of Electrical Engineering (JKE), Department of Commerce (JPG), Department of Mathematics & Computer Science (JMSK) and Department of General Studies (JPA), PSA is prepared to offer quality academic programmes through professional and trained academic staff. **Figure G1-1a** shows the administration block and main building of PSA, while **Table G1-1a** comprises general information about PSA.

Figure G1-1a: PSA Main Campus

Name of IHL	Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)
Address of IHL	Persiaran Usahawan, Seksyen U1, 40150 Shah Alam, Selangor
Name of IHL Director	Ts. Dr. Ahmad Aftas bin Azman (Acting)
Name of IHL Deputy Director (Academic)	Ts. Dr. Ahmad Aftas bin Azman
Name of IHL Deputy Director (Academic Support)	Dr. Sulaiman bin Mohammed Khalid
IHL Academic Session	Session 1 2025/2026
URL Address; IHL website	https://psa.mypolycc.edu.my/

Table G1-1a: General Information of PSA

PSA, a higher education institution under the purview of JPPKK, is placed under the authority of MoHE, Malaysia. This institution advocates technical education and vocational programmes for Malaysian students. It is vital in producing semi-professional workers for the engineering and commercial industries in Malaysia's private and public sectors. The organizational chart of PSA is shown in **Appendix G1-1a**.

C. Mission, Vision and Motto of PSA

PSA Mission and vision synchronize with JPPKK based on official letter shown in **Appendix G1-1b**.

V**ision**

"To be the Leading-Edge TVET Institution"

Mission

This mission can be divided into four important components which are:
1. To provide wide access to quality and recognized TVET programmes.
2. To empower communities through lifelong learning.
3. To develop holistic, entrepreneurial and balanced graduates.
4. To capitalize on smart partnership with stakeholders

Motto

"The Preferred Polytechnic"

Quality Policy

PSA is dedicated to providing effective and efficient customer service by means of teamwork, evaluation and ongoing enhancement.

Tagline

Great Future @ PSA
Passionate. Synergize. Agile

Figure G1-1b & **Figure G1-1c** is a statement of PSA's vision, mission, motto as well as tagline that has been disseminated to all PSA citizens as well as public announcements. The publicity medium used includes the PSA website, social media platforms and posts in each department, centers and units throughout the PSA.

Figure G1-1b: Statement of Vision & Mission PSA

Figure G1-1c: Statement of Quality Policy, Motto & Tagline of PSA

D. Graduates of PSA

Over the years, PSA has proudly organised 27 convocation ceremonies, signifying its long-standing commitment to producing skilled graduates. From 1999 until 2025, PSA has produced a total of 45,225 graduates across diverse engineering and commerce disciplines, as shown in **Figure G1-1d**. According to the BPN portal, the number of officially recorded graduates stands at over 40,000, further reflecting PSA's strong contribution to the nation's skilled workforce. Additionally, PSA currently enrolls approximately 3,758 active students, supported by 426 academic and administrative staff, across 15 different programmes.

Diploma in Mechanical Engineering (DKM) programme alone has produced 5,111 graduates since its first convocation in 2000. On top of that, the Techno-Huffaz programme (launched in 2017) for students in Business Studies, Civil, Mechanical, and Electrical Engineering has produced 16 dual-certificate graduates (Diploma + Tahfiz Sijil) and will welcome 19 new students in the upcoming 2025/2026 session. These achievements not only demonstrate PSA's role as a leading polytechnic in Malaysia but also its alignment with the national TVET agenda and the Polytechnic Transformation Roadmap 2023–2030, ensuring the continuous supply of future-ready graduates to meet evolving industry demands.

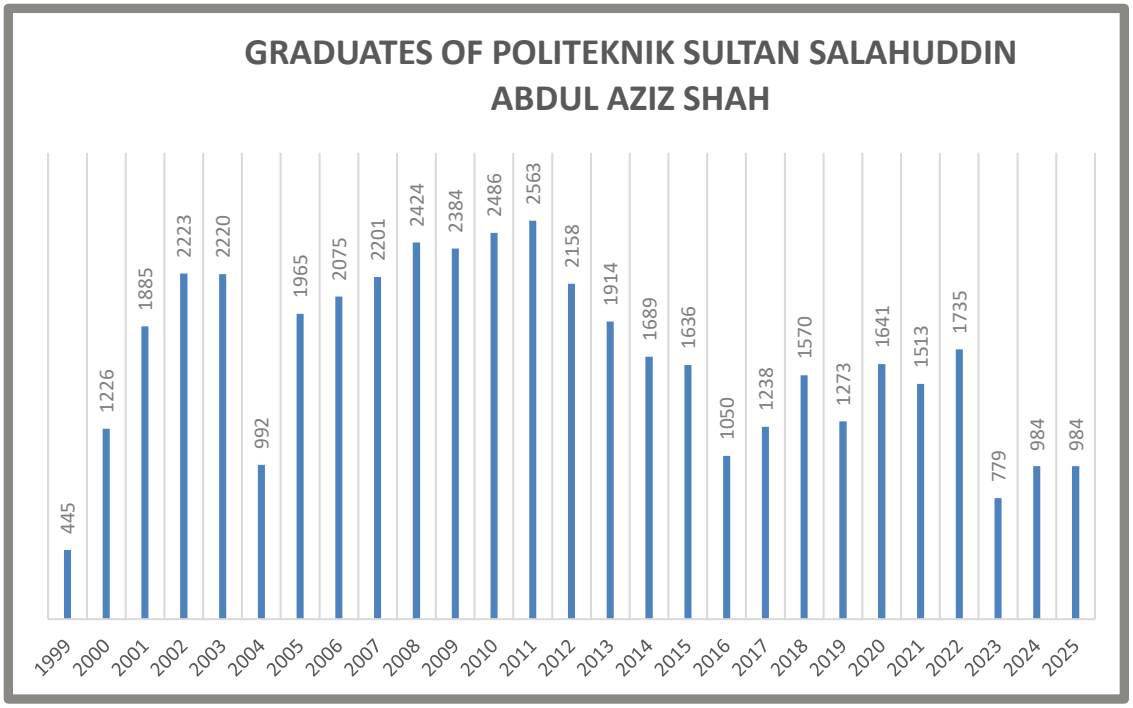


Figure G1-1d: Total Number of Graduates between 1999 and 2025

E. Collaboration with the Industries

PSA is actively strengthening collaborations with companies, institutions, and industries through a broad spectrum of impactful initiatives. These collaborations are not confined merely to the signing of Notes of Understanding (NOUs) but are further expanded into various meaningful programs at the departmental level. Among the notable initiatives are lecturer industrial attachments that enhance academic staff exposure to current industrial practices, student-industry joint projects that nurture innovation and applied problem-solving skills, the involvement of industry representatives as evaluators for student projects to ensure alignment with industrial expectations, industry experience sharing sessions that enrich students with real-world insights, and structured industrial visits that connect classroom learning with practical applications. Beyond these, PSA's dynamic academic staff are also deeply involved in research, course delivery, and consultancy services with industry partners, which further reinforce the integration of academic expertise with industrial needs. The overarching aim of these collaborations is to establish a sustainable and holistic platform for mutual knowledge exchange, capacity building, and professional development, ultimately benefiting both PSA and its industry partners. Comprehensive details of these collaborations, including NOUs and departmental-level initiatives, are presented in **Table G1-1b.**

NO	YEAR	NAME	COMPANY/INSTITUTION/INDUSTRY
JABATAN KEJURUTERAAN MEKANIKAL			
1	2023-2024	En. Muhd Nur Naimullah Bin Mohammed Ghazali	Bateriku (M) Sdn. Bhd
2		En. Abd Halim bin Yacob	Pusat Reka Bentuk Pembungkusan dan Keselamatan, Sirim Berhad
3		En. Muhammad Hafiezul Fais bin Mohd Jahis	BEM Cooler Enterprise
4		En. Mahathir bin Muhamed	Sinar Marimas Enterprise
5		En. Muhammad Zaim bin Rosli	Top Glove Sdn Bhd
6		Muhammad Asif Bin Zulkifli	Zul Design Sdn. Bhd
7		Prof Dr. Zaidatun Binti Tasir	Fakulti Sains Sosial UTM, Skudai
8		TS. Dr Zulkifli Bin Mahmoodin	Unikl-BMI
9		Ts Dr Mohd Ridhuan Mohd Jamil	Fakulti Pembangunan Manusia, UPSI
10		Mr Saw Ewe Chai	Tetra Pak Sdn. Bhd
11		Mr. Tan Tuck Wong	GS PaperBoard and Packaging Sdn. Bhd
12		Mr. Melvin	Gentle Solution Sdn. Bhd
13		Ts. Norsham Ismail	IdeasCad Technologies Sdn Bhd
14		Nazran Asyraff Mohd Najib	Tabung Warisan Khas kesihatan - Management (TWKK MANAGEMENT)
15		Ybhg. Dato' Indera Dr Ahmad Sabirin Arshad, FASc	Sirim Berhad
16		En. Ahmad Zaidi Bin Md. Zain	Ktpc Technologies Sdn. Bhd.
17		Mohd Shabuddin Bin Mat Hassan	Indsys Engineering Sdn. Bhd.
18		En. Mohd Fadhil bin Aziz	Panasonic Appliances Air Conditioning

			Malaysia Sdn Bhd
19		Noorazli Bin Torjie	Top-Mech Provincial Sdn. Bhd
20		Dr Izhar Abd Aziz	3d Gens Sdn. Bhd.
21		Dr. Thoufeili Taufek	Feiran Technology Sdn. Bhd
22		Mohd Arbain B. Mohd Yahaya	Pautan Legasi Sdn. Bhd.
23		Shamsul Nizam Bin Abdul Rahman	Johor Petroleum Development Corporation Berhad
24		En. Mohd Ashraf Bin Mohd Ibrahim	Petronas Global Technical Solutions Sdn. Bhd.
25		Ts. Muhammad Faqrul Reduan	HICOM Diecastings Sdn. Bhd.
26		Encik Fahmi Bin Idris	Helio Solutions Sdn. Bhd.
27	2021-2022	Prof IR TS DR Ing Yupiter Hp	SMRI, UITM Shah Alam
28		Prof IR TS DR Aminuddin Bin Abu	MJIT, UTM Kuala Lumpur
29	2016 - 2022	Dato' Mokhtar Bin Salleh	Panasonic Appliances Air Conditioning Malaysia Sdn Bhd
30		Michelle Hah	Fire Fighter Industry Sdn Bhd
31		Noorazlie Torje	Top Mech Provincial Sdn Bhd
32	2018 - 2020	Fahmi Bin Idris	Helio Solutions Sdn Bhd
33	2020 - 2022	Ahmad Zaidi Bin Md Zain	KTPC Technologies Sdn Bhd
34		Eamienor Zakiah Bt Md Zuki	Persekutuan Orang Pekak Malaysia (MFD)
35		Mohd Shabuddin Bin Mat Hassan	Insdsys Engineering Sdn Bhd
36		Zawawi Hj Effendi	TUV NORD (Malaysia) Sdn. Bhd
37		Rosman Bin Ahmad	TWI ABM Training & Certification Sd.Bhd

Table G1-1b: List of the Companies, Institutions and Industries Collaborating with PSA (JKM Section)

F. PSA Achievements

As part of its strategic direction, PSA has defined five core institutional thrusts that reflect both its achievements and its future orientation:

i. Research & Innovations
ii. Accreditations
iii. Intelligent Campus
iv. Pusat Bertauliah (PSA)
v. Institute of Medical Engineering Technology (IMET)

In 2016, PSA achieved 52 awards in various research and innovation competitions, including the Public Private Research Network (PPRN) Fund. From 2018 to 2020, nine research projects successfully received T-ARGS and F-RGS grants amounting to RM84,000, with the involvement of 38 lecturers from different academic departments.

In 2025, PSA further strengthened its research profile by securing two T-ARGS grants, two T-AIGS grants, and two T-ACGS grants, all of which are recognised as TVET research grants that support applied and industry-driven innovation. Collectively, these six research grants amounted to an impressive RM340,790, marking a significant milestone in PSA's research funding achievements. In addition, PSA also obtained three Social Research Fund recipients, with a total value of RM140,327.50, further showcasing the breadth of research endeavours undertaken by its academic staff. **Appendix G1-1c** shows a sample of the 2025 grant offer letter, while **Appendix G1-1d** lists the recipients of the 2025 research grants. The Department of Mechanical Engineering (JKM) was involved in three of these grants, demonstrating the strong commitment and expertise of its staff, and showing that JKM is equally competitive in contributing to PSA's research excellence at the national level.

PSA successfully achieved a new cycle of accreditation from the Engineering Technology Accreditation Council (ETAC) in 2025 for the Diploma in Mechanical Engineering (DKM) programme. The programme has been granted a full six-year accreditation with interim monitoring, reaffirming its compliance with the rigorous standards set by ETAC under the Board of Engineers Malaysia (BEM). This outstanding accomplishment demonstrates the unwavering commitment, dedication, and collaboration of the academic and support staff involved in the programme, whose collective efforts ensured that the highest benchmarks of quality were attained and sustained. Evidence of this accreditation result is provided in **Appendix G1-1e**.

PSA has proudly achieved international recognition through the Asian Pacific Accreditation and Certification Commission (APACC), being awarded the prestigious Gold Award accreditation twice — first in 2015 and later in 2021. This remarkable milestone not only highlights PSA's consistency in maintaining world-class standards but also demonstrates its strong reputation as a leading polytechnic in the region. Securing the Gold Award accreditation on two separate occasions is a testament to PSA's unwavering commitment, strategic leadership, and the collective dedication of its faculty, staff, and students in upholding quality assurance at the highest level. Through this recognition, PSA has proven its ability to fulfil APACC's seven stringent accreditation criteria: Governance and Management, Teaching and Learning, Faculty and Staff, Research and Development, Extension, Consultancy and Linkages, Resources, and Support to Students. This dual achievement underlines PSA's continuous pursuit of excellence and innovation in technical and vocational education, while strengthening its position as an institution that not only meets but also exceeds international benchmarks. The accreditation evidence is provided in **Appendix G1-1f**.

The QMS Team was established in 1997. PSA was the first polytechnic to convert from MS ISO 9002:1994 to MS ISO 9001:2000 in June 2002 and has continuously adopted the MS ISO Quality Management System since 2005. For the past nine years, PSA has successfully maintained its ISO certification with the scope of providing education services at Certificate, Diploma and Degree levels in engineering and commerce. In line with continuous improvement, PSA achieved certification for ISO 21001:2018 Educational Organizations Management Systems (EOMS) in 2022, as shown in **Appendix G1-1g** and the next renewal is scheduled for 2025. Meanwhile, PSA has also

been certified under ISO 45001:2018 Occupational Health and Safety Management since October 2020, ensuring a safe and conducive working environment, as referred to in **Appendix G1-1h.**

To strengthen its management, PSA has charted a clear institutional direction through the PSA Strategic Plan 2021–2025, which positions PSA as an Intelligent Campus. As shown in **Appendix G1-1i**, this vision is driven by the synergy of integrated management systems, digital networks, and emerging technologies within a dynamic human ecosystem. It emphasises the principles of integration, networking, technology, ecosystem development, continuous learning, and linkages, alongside the values of noble character, enterprise, sustainability, and innovation. In addition, PSA's management system is firmly anchored on seven Excellence Criteria that guide the institution's governance and operations. Building on past recognition through APACC accreditation and strengthened by the Intelligent Campus initiatives, PSA has established a well-structured and systematic management framework. This approach ensures that every effort is aligned not only with PSA's own strategic thrusts but also with the broader aspirations of the JPPKK Strategic Plan 2018–2025. More than just a roadmap, these initiatives demonstrate PSA's concrete achievements and continuous commitment in realising impactful outcomes, positioning PSA as a respected and forward-looking TVET 6.0 institution.

PSA has received full recognition from the Jabatan Pembangunan Kemahiran (JPK) as an accredited centre (Pusat Bertauliah) to run the SKM Draftsman Full Certification under the Diploma in Mechanical Engineering (DKM) programme, as shown in **Appendix G1-1j**. Since 2022, a total of 176 Mechanical Engineering students have participated in this programme. The SKM Draftsman certification is currently ongoing, with the final cohorts (Cohort 5 and Cohort 6) in progress. Upon completion, students will graduate with both the Diploma in Mechanical Engineering and SKM Draftsman Level 3 certification, further enhancing their professional competency. Examples of student certification can be referred to in **Appendix G1-1k**. In addition, PSA has also received recognition from JPK to conduct SKM Micro-Credentials. As shown in **Appendix G1-1l**, these include the AutoCAD Micro-Credential, where PSA successfully delivered the Certified Construction Site Supervisor (M&E) Micro-Credential programme between November and December 2021. A total of 127 alumni and post-graduate students participated, with 31% successfully improving their career competency—demonstrating the strong positive impact and value of this initiative for Mechanical Engineering Department graduates.

Looking ahead, PSA through the Department of Mechanical Engineering (JKM) has planned new SKM programmes starting in 2025. These include Micro-Credential in CADD (2 weeks), Micro-Credential in Digital Packaging (2 weeks), and Micro-Credential in Welding Industry (2 weeks). The introduction of these short-term, industry-focused programmes complements the existing SKM pathway and further strengthens PSA's role in producing highly skilled graduates who are relevant to industry demands and aligned with national TVET aspirations.

The establishment of the Institute of Medical Engineering Technology (IMET) at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) signifies a landmark achievement in advancing PSA's role as a premier institution in TVET – Transforming the Future. IMET has been designed as a holistic ecosystem that integrates curriculum development, industry collaboration, applied research, innovation, and specialized training to meet the demands of Industry 4.0 and beyond. Within this ecosystem, PSA has successfully developed three dedicated centers of excellence. The Center of Medical Electronic Technology (CMET) strengthens laboratory capabilities by providing calibration,

repair, and maintenance services for biomedical equipment, while also functioning as a Biomedical Certification Centre. The Technology Robotic and IoT Center (TRIC) serves as an accredited Personnel Certification Body in IoT and delivers specialized training in rehabilitation technology, addressing critical workforce needs in emerging technologies. Most prominently, the Additive Manufacturing Center (ADMC), established under the Department of Mechanical Engineering, acts as a pioneering hub for advanced additive manufacturing. ADMC focuses on innovation in design, prototyping, and production methods aligned with Industry 4.0, positioning PSA at the forefront of next-generation engineering solutions.

Looking forward, the strategic direction of IMET further amplifies PSA's leadership in medical engineering technology. The roadmap emphasizes four pillars: developing an Academy of Medical Engineering Technology, commercializing institutional expertise and resources, becoming a collaboration hub for industries and international partners, and evolving into a statutory, autonomous, flexible, and adaptive institution. These strategic moves reaffirm PSA's commitment to excellence, innovation, and global relevance, while solidifying its standing as a driving force in shaping the future of medical engineering within the TVET landscape. The strategic direction of IMET is detailed in **Appendix G1-1m**.

G. Department of Mechanical Engineering (JKM)

The Department of Mechanical Engineering (JKM) is led by a Head of Department (HOD), supported by three Heads of Programmes (HOP), 39 academic staff, and four support staff. The department currently offers three academic programmes: Diploma in Mechanical Engineering (DKM), the Diploma in Mechanical Engineering (Industrial Packaging) (DMP)**,** and the Exclusive Certificate in Mechanical Maintenance (KMK), an exclusive programme specifically designed for deaf students (OKU *Pendengaran*) to promote accessibility and inclusivity in technical education. **Table G1-1c** and **Figure G1-1e** provide the general information and organizational chart of JKM.

Name of Head of Department	Muhammad Faiz Bin Abdullah
Phone Number to be Contacted	03-51634000 ext: 1235
No. of Programmes Offered at the Department	3
Name of Programmes	Diploma in Mechanical Engineering
	Diploma in Mechanical Engineering (Industrial Packaging)
	Exclusive Certificate in Mechanical Maintenance
Number of MED Staff	47

Table G1-1c: General Information of JKM

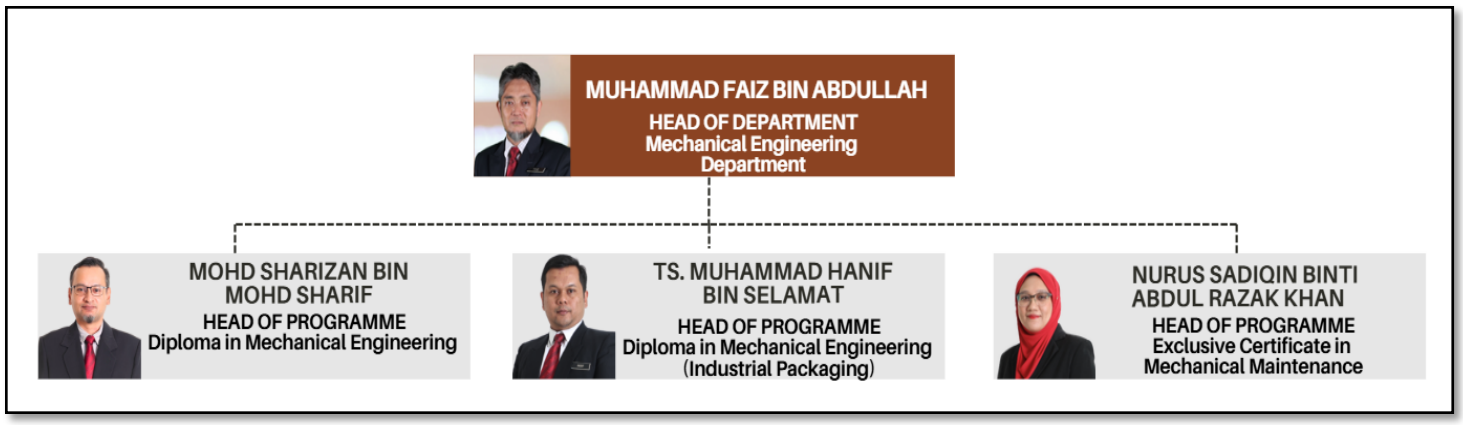


Figure G1-1e: The Top Management Organizational Chart of JKM

H. Diploma in Mechanical Engineering (DKM)

The Diploma in Mechanical Engineering (DKM) has been offered by the Department of Mechanical Engineering (JKM) since 1997 and remains one of its core academic programmes. The programme is led by a dedicated Head of Programme, supported by 23 committed and qualified academic staff who are devoted to delivering quality education and training. **Table G1-1d** and **Figure G1-1f** present the programme's general information and organizational chart. The teaching and learning activities are conducted in two academic sessions annually, in line with the academic calendar issued by JPPKK, with the latest cycle for 2025/2026 shown in **Figure G1-1g**.

The Diploma in Mechanical Engineering is strategically designed to produce graduates who are both knowledgeable and competent in mechanical engineering, with the ability to meet the current and future demands of the engineering workforce. The curriculum combines theoretical foundations with practical applications, covering a wide range of key areas including Solid Mechanics, Statics and Dynamics, Thermodynamics and Heat Transfer, Fluid Mechanics, Materials Science, Mechanical Design, Workshop Practices, Manufacturing Processes, Instrumentation and Control, Mechanical Maintenance, and Electrical and Electronic Technology. Through this comprehensive curriculum, the programme ensures that graduates are industry-ready, adaptable, and capable of contributing effectively to the evolving landscape of mechanical engineering.

Name of Head of Programme	Mohd Sharizan bin Mohd Sharif
Diploma to be awarded and Abbreviation	Diploma in Mechanical Engineering (DKM)
IHL awarding the diploma	Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)
Mode of Study	Full Time
Duration of Programme (in years)	3 Years
Medium of Instruction	English Language and Bahasa Malaysia
Language Available for Reference Materials	English Language and Bahasa Malaysia
No. of Credits	93

Table G1-1d: General Information of DKM Programme

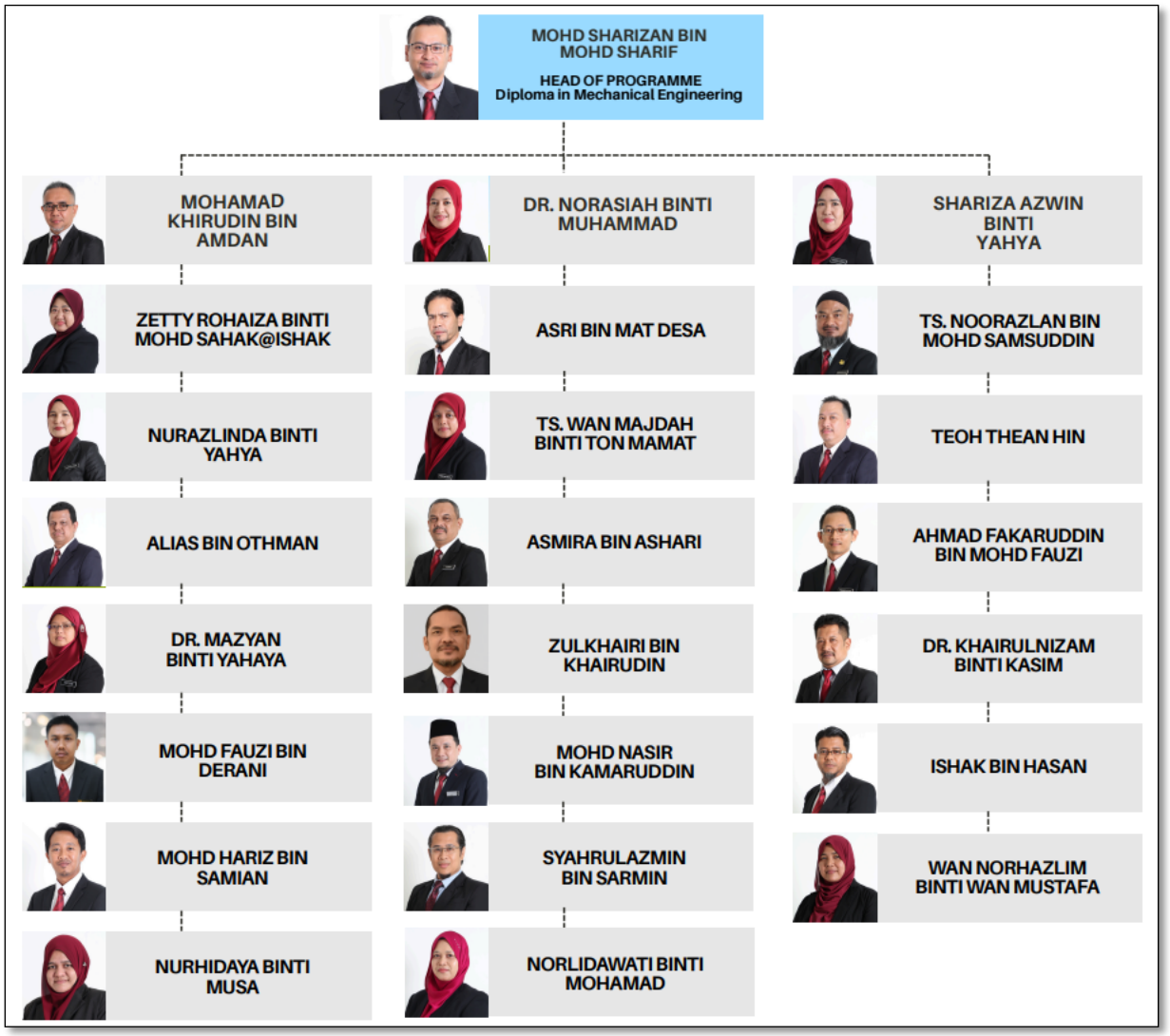
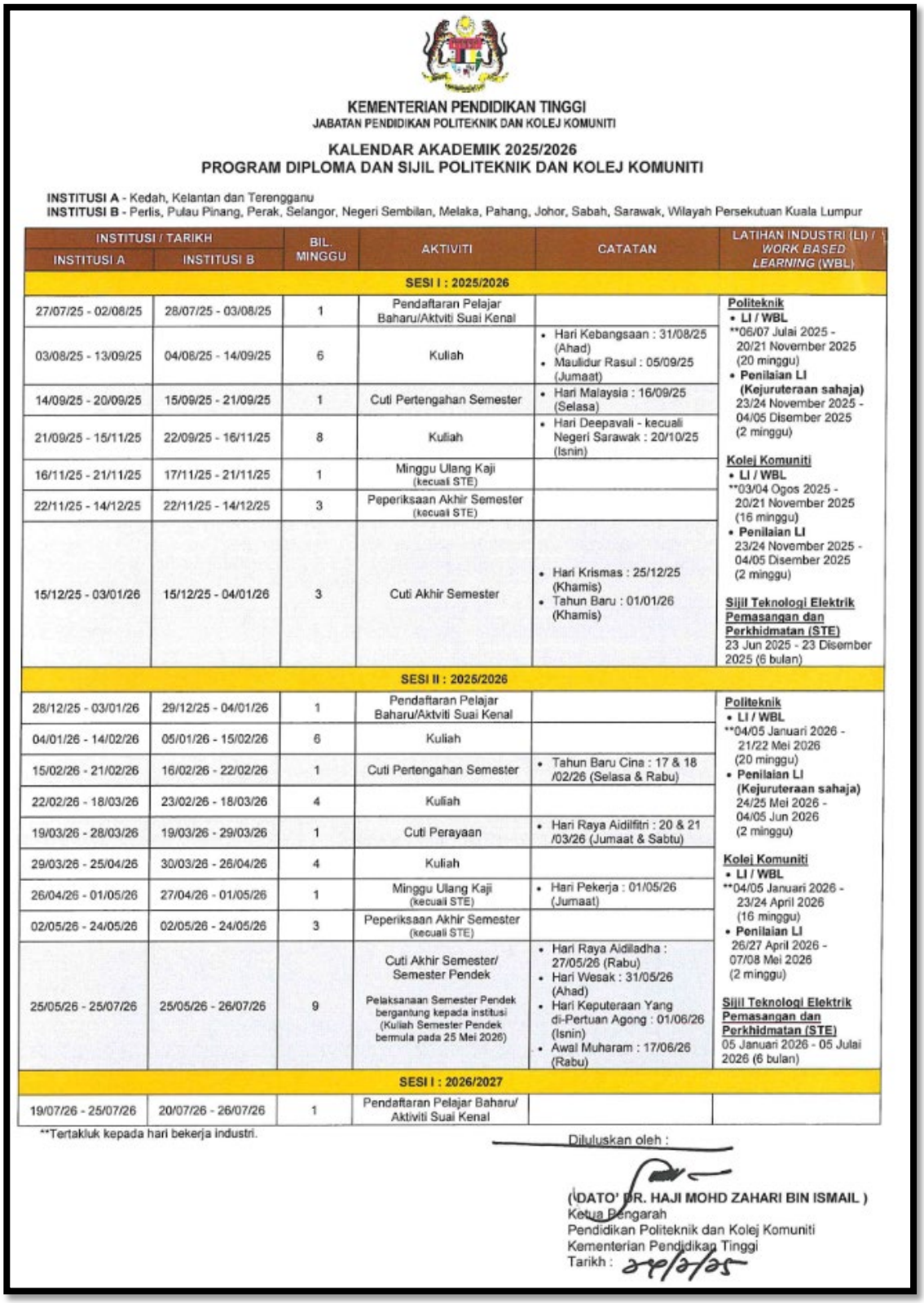


Figure G1-1f: Organizational Chart of the DKM Programme



KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

KALENDAR AKADEMIK 2025/2026
PROGRAM DIPLOMA DAN SIJIL POLITEKNIK DAN KOLEJ KOMUNITI

INSTITUSI A - Kedah, Kelantan dan Terengganu
INSTITUSI B - Perlis, Pulau Pinang, Perak, Selangor, Negeri Sembilan, Melaka, Pahang, Johor, Sabah, Sarawak, Wilayah Persekutuan Kuala Lumpur

INSTITUSI / TARIKH		BIL. MINGGU	AKTIVITI	CATATAN	LATIHAN INDUSTRI (LI) / *WORK BASED LEARNING* (WBL)
INSTITUSI A	INSTITUSI B				
SESI I : 2025/2026					
27/07/25 - 02/08/25	28/07/25 - 03/08/25	1	Pendaftaran Pelajar Baharu/Aktviti Suai Kenal		**Politeknik** • **LI / WBL** **06/07 Julai 2025 - 20/21 November 2025 (20 minggu) • **Penilaian LI (Kejuruteraan sahaja)** 23/24 November 2025 - 04/05 Disember 2025 (2 minggu) **Kolej Komuniti** • **LI / WBL** **03/04 Ogos 2025 - 20/21 November 2025 (16 minggu) • **Penilaian LI** 23/24 November 2025 - 04/05 Disember 2025 (2 minggu) **Sijil Teknologi Elektrik Pemasangan dan Perkhidmatan (STE)** 23 Jun 2025 - 23 Disember 2025 (6 bulan)
03/08/25 - 13/09/25	04/08/25 - 14/09/25	6	Kuliah	• Hari Kebangsaan : 31/08/25 (Ahad) • Maulidur Rasul : 05/09/25 (Jumaat)	
14/09/25 - 20/09/25	15/09/25 - 21/09/25	1	Cuti Pertengahan Semester	• Hari Malaysia : 16/09/25 (Selasa)	
21/09/25 - 15/11/25	22/09/25 - 16/11/25	8	Kuliah	• Hari Deepavali - kecuali Negeri Sarawak : 20/10/25 (Isnin)	
16/11/25 - 21/11/25	17/11/25 - 21/11/25	1	Minggu Ulang Kaji (kecuali STE)		
22/11/25 - 14/12/25	22/11/25 - 14/12/25	3	Peperiksaan Akhir Semester (kecuali STE)		
15/12/25 - 03/01/26	15/12/25 - 04/01/26	3	Cuti Akhir Semester	• Hari Krismas : 25/12/25 (Khamis) • Tahun Baru : 01/01/26 (Khamis)	
SESI II : 2025/2026					
28/12/25 - 03/01/26	29/12/25 - 04/01/26	1	Pendaftaran Pelajar Baharu/Aktviti Suai Kenal		**Politeknik** • **LI / WBL** **04/05 Januari 2026 - 21/22 Mei 2026 (20 minggu) • **Penilaian LI (Kejuruteraan sahaja)** 24/25 Mei 2026 - 04/05 Jun 2026 (2 minggu) **Kolej Komuniti** • **LI / WBL** **04/05 Januari 2026 - 23/24 April 2026 (16 minggu) • **Penilaian LI** 26/27 April 2026 - 07/08 Mei 2026 (2 minggu) **Sijil Teknologi Elektrik Pemasangan dan Perkhidmatan (STE)** 05 Januari 2026 - 05 Julai 2026 (6 bulan)
04/01/26 - 14/02/26	05/01/26 - 15/02/26	6	Kuliah		
15/02/26 - 21/02/26	16/02/26 - 22/02/26	1	Cuti Pertengahan Semester	• Tahun Baru Cina : 17 & 18 /02/26 (Selasa & Rabu)	
22/02/26 - 18/03/26	23/02/26 - 18/03/26	4	Kuliah		
19/03/26 - 28/03/26	19/03/26 - 29/03/26	1	Cuti Perayaan	• Hari Raya Aidilfitri : 20 & 21 /03/26 (Jumaat & Sabtu)	
29/03/26 - 25/04/26	30/03/26 - 26/04/26	4	Kuliah		
26/04/26 - 01/05/26	27/04/26 - 01/05/26	1	Minggu Ulang Kaji (kecuali STE)	• Hari Pekerja : 01/05/26 (Jumaat)	
02/05/26 - 24/05/26	02/05/26 - 24/05/26	3	Peperiksaan Akhir Semester (kecuali STE)		
25/05/26 - 25/07/26	25/05/26 - 26/07/26	9	Cuti Akhir Semester/ Semester Pendek Pelaksanaan Semester Pendek bergantung kepada institusi (Kuliah Semester Pendek bermula pada 25 Mei 2026)	• Hari Raya Aidiladha : 27/05/26 (Rabu) • Hari Wesak : 31/05/26 (Ahad) • Hari Keputeraan Yang di-Pertuan Agong : 01/06/26 (Isnin) • Awal Muharam : 17/06/26 (Rabu)	
SESI I : 2026/2027					
19/07/26 - 25/07/26	20/07/26 - 26/07/26	1	Pendaftaran Pelajar Baharu/ Aktiviti Suai Kenal		

**Tertakluk kepada hari bekerja industri.

Diluluskan oleh :

(DATO' DR. HAJI MOHD ZAHARI BIN ISMAIL)
Ketua Pengarah
Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Tinggi
Tarikh : 29/2/25

Figure G1-1g: Academic Calendar for 2025/2026

G1-2 Provide accreditation history (year of accreditation, conditions imposed, and actions taken).

I. Programme History of Accreditation

DKM programme has been offered at PSA since the year 1997. It was accredited by a statutory body known as the National Accreditation Board of Malaysia (LAN). When LAN was dissolved in 2007, its functions were taken over by the Malaysian Qualifications Agency (MQA). Since then, PSA has put all its efforts towards getting accreditation from the MQA for all programmes offered at the institution. The complete accreditation status by the MQA was achieved for the DKM programme in 2013, shown in **Appendix G1-2a**. In 2018, DKM Programme was fully certified by the Board of Engineer Malaysia (BEM). The history of the accreditation process for the DKM Programme is shown in **Table G1-2a**. The programme has successfully renewed its accreditation in 2025, demonstrating continuous compliance with MQA and BEM requirements, and ensuring that the quality of curriculum, teaching, and assessment remains aligned with national standards and industry expectations. **Appendix G1-2b** also highlights the feedback received from ETAC during the 2024 accreditation cycle and the corresponding actions taken by PSA, reflecting the department's strong commitment to continual improvement and responsiveness to external evaluation.

No.	Year of Accredited	Accreditation Agency
1	2002 - 2009	National Accreditation Board of Malaysia (LAN)
2	2010 - 2012	Deemed accreditation status by the Malaysian Qualifications Agency (MQA)
3	2013	Full accreditation status by the Malaysian Qualifications Agency (MQA)
4	2018	Deemed accreditation status by the Board of Engineer Malaysia (BEM)
5	2019	Full accreditation ETAC
6	2025	New cycle accreditation ETAC

Table G1-2a: The History of Accreditation Process for DKM Programme

G1-3 Describe changes made to the programme stating the year the changes were introduced.

J. Curriculum Structure

As part of the ETAC accreditation process, several recommendations on the curriculum structure were issued to further enhance the implementation of the programmes at PSA. In response, the Department of Polytechnic Education and Community College (JPPKK), through the Curriculum Division, issued an official *Surat Pekeliling Kurikulum (SPK)* that directed the implementation of the new curriculum structure of Session 1 2024/2025 across all polytechnics in Malaysia. This curriculum further strengthens the existing programme design and ensures alignment with current technological advancements. **Table G1-3a** presents the structural changes made to the programme

design, while **Table G1-3b** highlights the changes to programme information under the new curriculum. **Appendix G1-3a** contains the official *Surat Pekeliling Kurikulum* (SPK), which serves as the authority for its implementation, whereas **Appendix G1-3b** provides detailed updates to course information.

Table G1-3a: Structural changes made to the programme design

NAMA PROGRAM YANG DITAMBAHBAIK:	DIPLOMA KEJURUTERAAN MEKANIKAL / DIPLOMA IN MECHANICAL ENGINEERING (DKM)

Perubahan bersifat struktural pada rekabentuk program:

BIL	KOMPONEN	KOMPONEN PENAMBAHBAIKAN	PERUBAHAN	PEMBERAT KOMPONEN (%)	PERATUS PERUBAHAN AKHIR (%)
1	PENAMAAN PROGRAM	Penamaan program disebabkan pindaan pada Body of Knowledge atau mengikut trend penamaan semasa	Tidak	NA	
2	KAEDAH PENGAJIAN	Perubahan/Penambahan kepada kaedah WBL	Tidak	NA	
3	PEO	Perubahan kandungan dan bilangan Pernyataan PEO	0/100	NA	
4	PLO	Perubahan kandungan dan bilangan Pernyataan PLO	8.3/100	NA	
5	STRUKTUR KURIKULUM	Pengguguran/Penambahan/Penggantian Kursus dalam struktur kurikulum	7.58/100	70.0	5.30
6	CLO	Perubahan kandungan dan bilangan Pernyataan CLO	18.08/100	30.0	5.42

PERUBAHAN MAKLUMAT PROGRAM
BAHAGIAN KURIKULUM
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

Sila isikan maklumat berikut:

	a.	Unit (Nama Penuh) Cth: Unit Pelancongan dan Hospitaliti	:	UNIT KEJURUTERAAN MEKANIKAL		
	b.	Program yang ditambahbaik (Nama Penuh) Cth: Diploma Pengurusan Resort / Diploma in Resort Management	:	BAHASA MELAYU: DIPLOMA KEJURUTERAAN MEKANIKAL BAHASA INGGERIS: DIPLOMA IN MECHANICAL ENGINEERING AKRONIM: DKM	Tarikh Kelulusan MLK/JKIK Cth: hh/bb/tttt :	
i(a)	c.	Pindaan editorial pada penamaan program Cth: Sarjana Sains (Kimia) kepada Sarjana Sains Kimia	:	Tidak		
i(b)	d.	Pindaan editorial pada National Education Code (NEC)	:	Tidak		
i(c)	e.	Perubahan kredit bergraduat	:	Ya	Jika Ya, isikan maklumat berikut: dari 94 kredit kepada 93 kredit	
i(d)	f.	Perubahan tempoh pengajian Cth: Dari 2 tahun kepada 2 tahun setengah ATAU bilangan minggu pembelajaran dalam 1 semester daripada 14 minggu kepada 17 minggu	:	Bilangan Tahun Tidak	Jika Ya, isikan maklumat berikut: dari 3 tahun kepada 3 tahun	
			:	Bilangan Minggu Tidak	Jika Ya, isikan maklumat berikut: dari 14 minggu kepada 14 minggu	
i(e)	g.	Perubahan/Penambahan kaedah pengajian Cth: Sepenuh masa atau separuh masa	:	Tidak		
ii (a)	h.	Perubahan penamaan program disebabkan pindaan pada *Body of Knowledge* (BoK) atau mengikut trend penamaan semasa	:	Tidak		
ii (b)	i.	Perubahan / Penambahan kepada kaedah WBL	:	Tidak		
iii	j.	Perubahan pada reka bentuk program (kurikulum) yang membawa kepada pertukaran bidang pengajian lain (membawa kepada pertukaran NEC) seperti perubahan penamaan dan kandungan program yang menjurus kepada BoK bidang pengajian lain. Cth: Diploma Pengurusan dan Pentadbiran Islam kepada Diploma Pengajian Islam	:	Tidak		
iv	k.	Perubahan / Penambahan kaedah penyampaian program daripada Konvensional kepada *Open and Distance Learning* (ODL)	:	Tidak		

Table G1-3b: Changes to programme information under the curriculum version 2024

C1-1 State the vision and mission of the IHL and/or faculty

A. Vision and Mission

Department of Polytechnic and Community College Education (JPPKK) and Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) sharing the same Vision and mission.

Vision:
"To be the Leading-Edge TVET Institution."

Mission:
This mission can be divided into four important components which are:

1. To provide wide access to quality and recognized TVET programmes.
2. To empower communities through lifelong learning.
3. To develop holistic, entrepreneurial and balanced graduates.
4. To capitalize on smart partnership with stakeholders

Motto:

"The Preferred Polytechnic"

C1-2 List the PEO and state where they are published or publicised

B. Programme Educational Objectives (PEO)

The programme prepares graduates to be capable personnel in the workplace and society during the first few years following graduation. **Table C1-2a** shows PEOs' description for curriculum Effective Session 1 2024/2025. The graduates are expected to achieve the following PEOs:

Table C1-2a: PEOs description for Curriculum Effective June 2024

PEO	VARIABLE MEASURE	DESCRIPTION
PEO1: Proficient with industry-relevant knowledge and skills in mechanical engineering field	Technician in Mechanical Engineering	Describe graduates who are trained to the industry-relevant knowledge and skill related to mechanical engineering field
PEO2: Engaging on lifelong and continuous learning to enhance knowledge and skills	Role of graduate	Describe graduates who are trained to maximize the opportunities for lifelong and continuous learning to develop the skills. The professional development of the graduates and have opportunities to further their studies to a higher level.

PEO3: Acquire with entrepreneurial skills and mindset in the real working environment	Enterprising Activity	Describe graduates who are trained in entrepreneurial activity and build their self-confidence. Graduates also were exposed to the real working environment.
PEO4: Establish links with society and players in the industry.	Career Advancement	Graduates were exposed with professional ethics and engaged in industries players and society during learning activities and CSR.

The PEOs are stated clearly in:

1. Google site https://sites.google.com/psa.edu.my/panduanpelajarjkm/utama-jabatan-kejuruteraan-mekanikal which are distributed during the student orientation week **(Appendix C1-2a)**

2. "MyJKM iNFO" is a gateway to the latest information for all JKM students via the following link: https://mylink.la/jkm_student_guide **(Appendix C1-2b)**

3. Posters which are displayed in all teaching and learning (T&L) rooms at the Mechanical Engineering Department (classrooms, workshops, laboratories, lecture hall, etc.) **(Appendix C1-2c)**.

4. Course Outline **(Appendix C1-2d)**.

PEOs are continuously disseminated to the students during the orientation week with the Head of Department or Programmes Leaders, T&L sessions and meetings with academic advisors at the first week of every semester.

C1-3 Describe how the PEO are consistent with the vision and mission of the IHL and/or faculty.

C. PEO consistency with the vision and mission of the IHL/faculty

One of the first elements required to be developed in implementing OBE is the Program Educational Objectives (PEO). PEOs are a set of goals or targets that describe the graduates' expected career achievement a few years after graduation. These goals must be consistent with the academic institution's vision and mission and consider the needs of the programme's relevant stakeholders.

The PEOs of the DKM programme have been developed to be consistent with the Vision and Mission of JPPKK, as well as stakeholders' requirements. The PEOs describe the expected achievements of graduates in their career and professional life three to five years after graduation.

The relationship between the IHL mission and PEOs is shown in **Table C1-3a.**

Table C1-3a: Relation between PSA Missions and PEOs

	Programme Educational Objectives (PEO)	PSA Mission			
		Wide access to quality	Lifelong learning	Balanced graduates	Smart partnership
1.	Proficient with industry-relevant knowledge and skills in mechanical engineering field	√			
2.	Engaging on lifelong and continuous learning to enhance knowledge and skills		√		
3.	Acquire with entrepreneurial skills and mindset in the real working environment			√	
4.	Establish links with society and players in the industry.				√

The PEOs are determined by incorporating the vision and mission of the JPPKK and stakeholder's expectations. The stakeholders of the programme are as follows:

1. **Ministry of Higher Education (MOHE)** – The governance that determines the national education policies and development plans.
2. **Students** – The students expect to become technically competent, marketable technicians on completion of the programme.
3. **Lecturers** – A group of personnel involved directly in teaching and learning for the electrical engineering programme.
4. **Alumni** - A group of alumni expect a continual high-quality educational programme at IHL as their reputation is reflected in the quality of their education. These individuals have been highly successful and bring insight from various industries and academia.
5. **Industry / Employers** - This group expects graduates who are technically competent and productive, have good skills in communication, teamwork and leadership, and have high ethical values towards social and environmental awareness.

All the stakeholders had been involved through varied degrees of participation in the development and review process of the PEOs. Stakeholder participation is often through the attendance of meetings, workshops, questionnaire surveys or other forums to ensure that the programme objectives are consistent with the JPPKK vision and mission.

The PEOs are developed by the Curriculum Development Committee (CDC), appointed by the JPPKK. The same committee defined the program outcomes, course outlines and syllabus. The curriculum is approved by the Polytechnic Curriculum Board, appointed by the Minister of Higher Education based on the Education Act 1996 (Act 550).

C1-4 Describe the PEO elements/performance indicators, achievement criteria, performance targets and assessment instruments.

D. Process for the assessment of PEOs attainment

The PEO attainment assessment will be centralised by CDD by referring to Garis Panduan Pelaksanaan Kajian PEO shown in **Appendix C1-4a**. A committee is set up to prepare the questionnaires and analyse the data from the survey. The previous questionnaires are revised and improved to ensure the purpose of the PEO assessment is achieved. The stakeholders that would be involved in the survey are the alumni.

For the alumni data collection, the polytechnic will send the questionnaire related to measuring PEOs directly to the student via email or mobile apps through a former academic advisor. The collected data can be analysed using suitable software such as Microsoft Excel. After completing the data analysis, the research team must prepare a research report.

This aligns with the target of getting feedback from the polytechnic alumni in their third to fifth year after graduation. The evaluation result is expected to be used as input for the curriculum review process by the CDD, which is planned for 2029. During the programme's curriculum review process, the revised PEOs will then go through the same verification steps mentioned in **Section C1-5**. The new curriculum will be implemented in 2029.

Based on the letter from JPPKK dated 2 July 2024 (JPPKK.BK.600-1/3/2 Jld.7 (5)) shown in **Appendix C1-4b,** the implementation of the new curriculum for diploma-level academic programmes will begin in Session 1 2024/2025. Therefore, students who enrolled in that session are currently in Semester 3. As such, the pilot test assessment for the PEOs will only be conducted in the December 2026 session.

On 18 and 19 August 2025, a workshop on the development of PEO analysis for the Mechanical Engineering Unit was conducted. The findings from the workshop indicated that the KPI for PEO at each institution is determined by the respective institution. Therefore, on 22 August 2025, JKM held a meeting to establish the PEO KPI, and the outcomes (**Appendix C1-4c**) will be presented at the Department Advisory Committee (IAC) meeting.

C1-5 Describe the process for the periodic review (with the stakeholders' involvement) and revision of the PEO

E. Processes Used to Establish the PEOs

The polytechnics in Malaysia are centrally managed by the JPPKK under the Ministry of Higher Education Malaysia. This includes the development of the curriculum of all the programmes offered by the polytechnics. The curriculum development process is done under the supervision of the Curriculum Development Division (CDD) of JPPKK. **Figure C1-5a** shows the curriculum development process employed by the CDD.

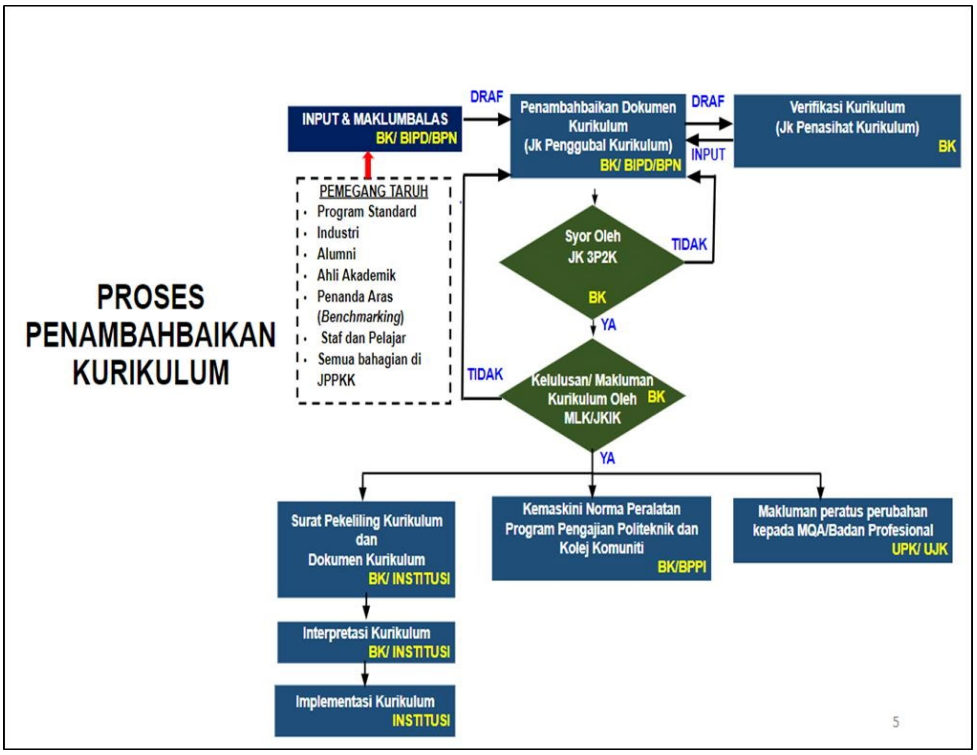


Figure C1-5a: Flowcharts of Curriculum Development Process in Polytechnics

The PEOs and Programme Outcomes (PLOs) are initially formulated by the CDD with reference to guidelines produced by the Malaysian Qualification Framework (MQF) and Engineering Technology Accreditation Council (ETAC), while the academic curriculum is developed by the Curriculum Development Committee (CDC), a committee set up by CDD for each programme. The committee usually comprises lecturers from the polytechnics, experts from other institutions of higher learning (IHL) and representatives from the relevant industries.

The PEOs, PLOs and the academic curriculum of a programme are then reviewed and refined by the Curriculum Advisory Committee (CAC) for verification. The Polytechnic and Community College Study Program Subcommittee (JK 3P2K) will ensure the programme complies with the requirement of the current standard and policy before approval by the Polytechnic Curriculum Board (PCB) in the Curriculum Board Meeting (MLK). The members of CAC are appointed by the

CDD, which comprises another group of experts from IHLs and representatives from the relevant industries. The subcommittee members are appointed among the Polytechnic senior officers and lecturers. The PCB is the highest body set up by the ministry to approve all the curriculums before they are implemented at the polytechnic. Top management of JPPKK, representatives of professional bodies and academicians are PCB members appointed from private and public IHLs by the Minister of Higher Education. A list of the CDC, CAC, JK 3P2K and PCB members are available i n **Appendix C 1-5a, Appendix C 1-5b, Appendix C 1-5c** and **Appendix C 1- 5d,** respectively. After receiving approval from the PCB, Curriculum Division, JPPKK will issue a Curriculum Circular Letter to institutions to inform them of the latest use of curriculum documents.

F. Processes for the Periodic Review and Revision of PEOs

CDC analyze the PEO input from MOHE, Industry, and other stakeholders, feedback from the Programme Advisory Committee in polytechnic, and the PEO attainment to revise the PEO. The feedback identifies the gap and improves the PEO to align with the stakeholder's needs. The industry and other stakeholders must review the revised PEO statement to ensure its relevancy.

Guided by the JPPKK vision and mission statements, input from the MOHE, programme advisory committee, other stakeholders and PEO attainment, the program educational objectives are reviewed and updated regularly by the Department of Curriculum through the process established as shown in **Figure C1-5b.** CDC will analyze the PEO inputs and attainments to identify gaps and improve the PEO to align with the stakeholders' needs. The modifications must also be aligned with the vision and mission of JPPKK. The revised PEO will be submitted to the Program Advisory Committee at the polytechnic level and other stakeholders for review and feedback. The established PEO has to be approved and endorsed by the PCB before being formally used by polytechnics. The dissemination of the PEO is done as part of the curriculum documents through the CIDOS portal.

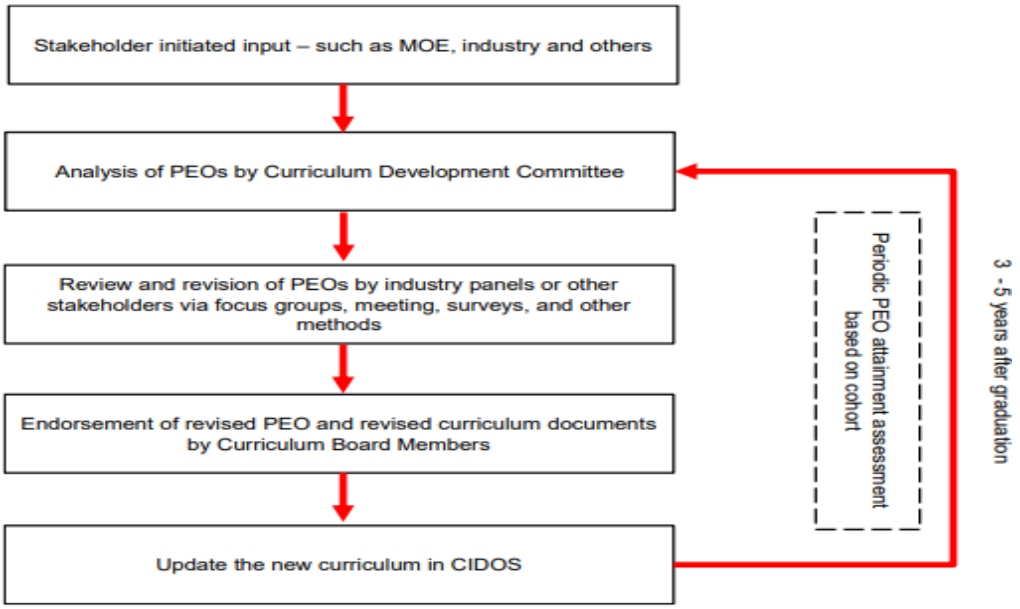


Figure C1-5b: Flowcharts of periodic review and revised of PEO

C2-1 List down the Programme Outcomes and state where are they published.

A. Programme Learning Outcomes (PLOs) and Dissemination of Information

The PLO listed in the MQA programme standard are adapted from the current Dublin Accord 11 PLO in the ETAC Standard. **Table C2-1a** shows the PLO Curriculum version 2024.

Table C2-1a: The PLO Curriculum version June 2024

PLOs	PLO Curriculum version 2024
PLO1:	apply knowledge of applied mathematics, applied science, computer and engineering fundamentals and an engineering specialization as specified in DK1 to DK4 respectively to wide practical procedures and practices in area of mechanical engineering.
PLO2:	identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to mechanical engineering field (DK1 to DK4).
PLO3:	design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety as well as, cultural, societal and environmental considerations in area of mechanical engineering (DK5).
PLO4:	conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements (DK8).
PLO5:	apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations (DK2 and DK6).
PLO6:	consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well- defined engineering problems (DK1, DK5 and DK7).
PLO7:	understand and commit to professional ethics and responsibilities and norms of technician practice and including complience with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9).
PLO8:	function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings (DK9).
PLO9:	communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions
PLO10:	demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.
PLO11:	recognise the need for, and have the ability for i) independent and life long learning and ii) critical thinking in the face of specialised technical knowledge (DK8).

These Programme Learning Outcomes are clearly stated in the Curriculum Information Document Online System (CIDOS) platform, Course Outline, and displayed in all classrooms and laboratories in the Mechanical Engineering Department. Students are also made aware of the PLOs from the beginning of their study during a session with the Programme Leader during the orientation week. They are also reminded from time to time throughout their studies, such as during the Academic Advisor meeting sessions.

C2-2 Describe how the PO are mapped to the PEO

B. Programme Learning Outcomes (PLOs) in relation to the Programme Education Objectives (PEOs)

The Programme Learning Outcomes can be mapped with Programme Educational Objectives as shown in **Table C2-2a**. All the PLOs of DKM programme can be mapped to the PEOsprogramme.

Table C2-2a: Mapping between PLOs and PEOs

PROGRAMME LEARNING OUTCOMES (PLO)		PROGRAMME EDUCATIONAL OBJECTIVES (PEO)			
		PEO 1	PEO 2	PEO 3	PEO 4
PLO1	apply knowledge of applied mathematics, applied science, computer and engineering fundamentals and an engineering specialization as specified in DK1 to DK4 respectively to wide practical procedures and practices in area of mechanical engineering.	/			
PLO2	identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to mechanical engineering field (DK1 to DK4).	/			
PLO3	design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety as well as, cultural, societal and environmental considerations in area of mechanical engineering (DK5).	/			
PLO4	conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements (DK8).	/			
PLO5	apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations (DK2 and DK6).	/			
PLO6	consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems (DK1, DK5 and DK7).				/
PLO7	understand and commit to professional ethics and responsibilities and norms of technician practice and including complience with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9).				/

PLO8	function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings (DK9).				/
PLO9	communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions				/
PLO10	demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.			/	
PLO11	recognise the need for, and have the ability for i) independent and life longlearning and ii) critical thinking in the face of specialised technical knowledge (DK8).		/		

Programme Educational Objectives (PEOs):

The Diploma in Mechanical Engineering (Packaging) programme should produce balanced and competent technical workers who are:

PEO1: Proficient with industry-relevant knowledge and skills in mechanical engineering field

PEO2: Engaging on lifelong and continuous learning to enhance knowledge and skills

PEO3: Acquire with entrepreneurial skills and mindset in the real working environment

PEO4: Establish links with society and players in the industry

C2-3 Describe the processes used to establish and review the PO, addressing the outcome requirement in Section 6.2 and the extent to which the programme's various stakeholders are involved in these processes.

C. Process in Establishing and Reviewing PLOs

The process of developing the PEO and PLOs is centrally managed by the DPCCE, including curriculum development for all programmes. The procedures for establishing and reviewing PLOs are together with establishing and reviewing PEOs. The detailed procedures for establishing the PLOs are discussed in C1-5, while the PLO reviewing process is carried out concurrently with the review of the PEOs by the same committees, as explained in C1-5.

C2-4 Describe the PO assessment model adopted by providing evidences:

- **Where and how each of the PO is assessed?**
- **What are the satisfactory attainments and measures to overcome any shortcomings?**

D. PO process and assessment model

Assessment materials to achieve PLOs are equipped with both academic and non-academic skills and competencies.

(i) Academic

Referring to **Figure C2-4a**, the assessment materials evaluate the student knowledge, skills and affective domains that directly measure the achievement of expected outcomes. These include quizzes and tests, presentations, assignments, capstone, case studies, end-of-chapter projects, journal reflections, portfolios and other assessment tasks. Different CLOs can be assessed concurrently in one task, but each outcome is evaluated separately. Rubrics for skills and affective domains are developed to standardize performance measurement. Besides continuous assessments, the final examinations also carry marks for the CLO for the courses. The final examination only evaluates the student's knowledge.

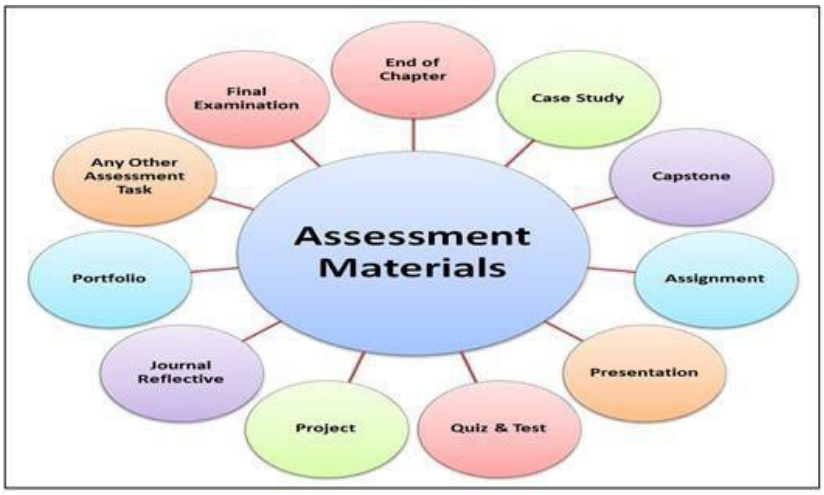


Figure C2-4a: Types of assessments used for evaluation

(i) Non-academic

Considering that holistic graduates should be equipped with non-academic skills and competencies, assessment materials that contribute to the PLO's attainment include records of various activities such as clubs, sports, uniform bodies, and others. Students are encouraged to participate in any level of activities organized by the polytechnic or outside, which may help them raise their self-esteem, develop their spirit and connect with the adults in the community in a positive manner, creating a good situation for all.

E. Demonstration of PLOs Achievement

The assessment method in the Diploma in Mechanical Engineering Programme curriculum is constructively aligned with the Programme Learning Outcomes (PLO) and Course Learning Outcomes (CLO). On-going assessments were conducted throughout the course, embedded and linked directly to the current learning and teaching activities. Through observation and interaction in the classroom, the assessments help the academic staff to gain feedback on students' progress. Summative assessments were used to measure what students learned at the learning unit's end. Attainment of outcomes in the cognitive and psychomotor domains was directly assessed, whilst the affective domain was assessed in subjective assessment.

Generally, to ensure the CLOs, PLOs and learning domains (cognitive, psychomotor and affective) are being assessed, Final Examination Item Specification Table (FEIST) as shown in **Appendix C2-4a** and Course Item Specification Table (CIST) as shown in **Appendix C2-4b** were created to coordinate lecturer in developing item of assessment. FIEST are endorsed by the DKM

Program Coordinator from the Polytechnic of Port Dickson (PPD). **Figure C2-4b** is a flowchart of developing the FEIST process and **Figure C2-4c** flowchart of Generate CORR and PLORR using i-EXAM in SPMP.

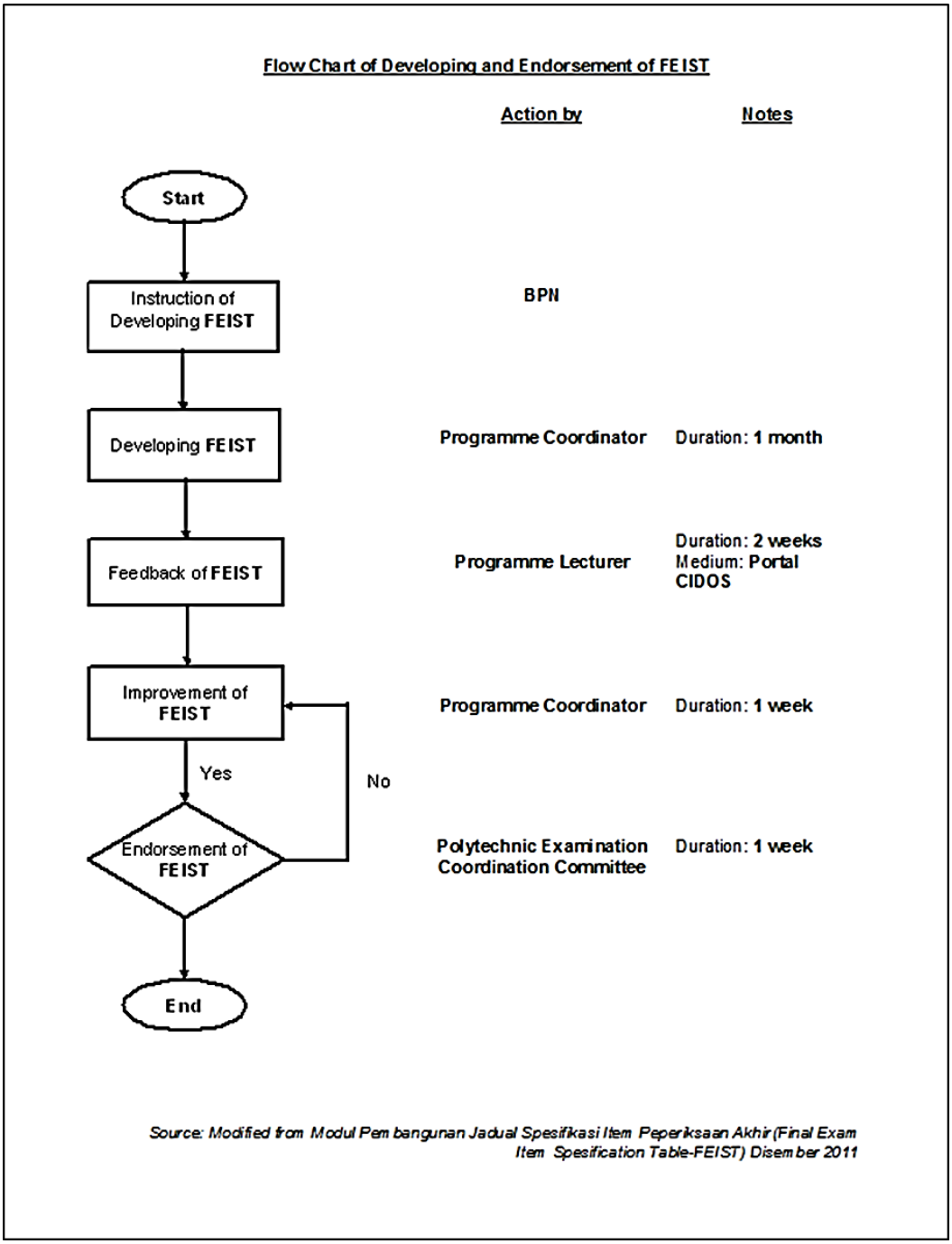


Figure C2-4b: Flowchart of Developing FIEST Process

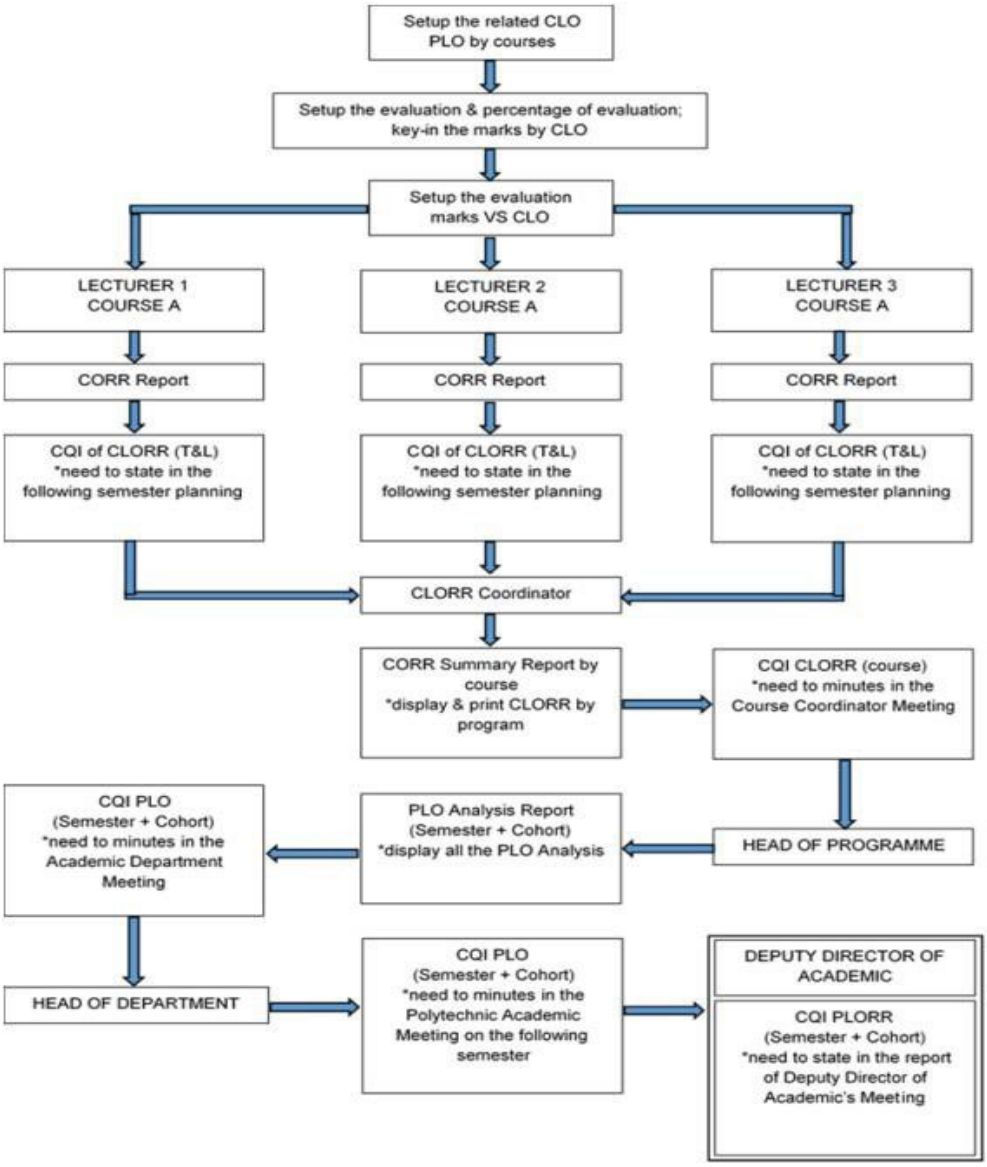


Figure C2-4c: Flowchart of Generate CORR and PLORR using i-EXAM in SPMP

After the CLOs and PLOs are obtained, the achievement of each CLO and PLO will be compared with the KPIs (course and program level). If the results of each CLO and PLO are less than 50%, the lecturer will identify the cause and action for Continuous Quality Improvement (CQI) purposes. At this stage, all stakeholders, including the Programme leader, Students, and Academic Management, will be aware of the improvements that need to be made. **Figure C2-4d** below shows the PLO achievement for the 2024 syllabus, beginning with the cohort of Session 1 2024/2025 and ending in Session 2 2026/2027. At the current session, this cohort is in Semester 3, and the PLO achievement has only been completed for 2 semesters only.

Upon completion of the overall cohort data, the information will be uploaded into the S3P system (Programme Learning Outcomes Achievement Reporting System). Through this platform, PLO data can be accessed at the national polytechnic level. In addition, the system enables programmes to provide feedback and recommendations for improvement, which will be reviewed and acted upon by Malaysian Polytechnics.

Programme Learning Outcome Group Attainment 1 2024/2025 Kohort
Programme: Diploma in Mechanical Engineering

PROGRAMME LEARNING OUTCOME GROUP ATTAINMENT											
INTAKE : 1 2024/2025 FINAL SEMESTER 2 2026/2027											
PROGRAMME:											
		KNOWLEDGE	PROBLEM AANALYSIS	DESIGN/ DEVELOPMENT OF SOLUTION	INVESTIGATION	MODERN TOOL USAGE	THE ENGINEER & SOCIETY	ENVIRONMENT & SUSTAINABILITY	ETHICS	INDIVIDUAL AND TEAMWORK	COMMUNICATION	PROJECT MANAGEMENT & FINANCE
	SEMESTER	PLO01	PLO02	PLO03	PLO04	PLO05	PLO06	PLO07	PLO08	PLO09	PLO10	PLO11
DKM	SEM 1- 1 2024/2025	70	73		84	81	89	72	88	80	85	75
	SEM 1- 2 2024/2025	67	81			82		83	90	69	83	87
	SEM 1- 1 2025/2026											
	SEM 1- 2 2025/2026											
	SEM 5- 2 2026/2027											
	SEM 6- 2 2026/2027											
	AVERAGE PLO	69	77		84	82	89	76	89	74	84	79

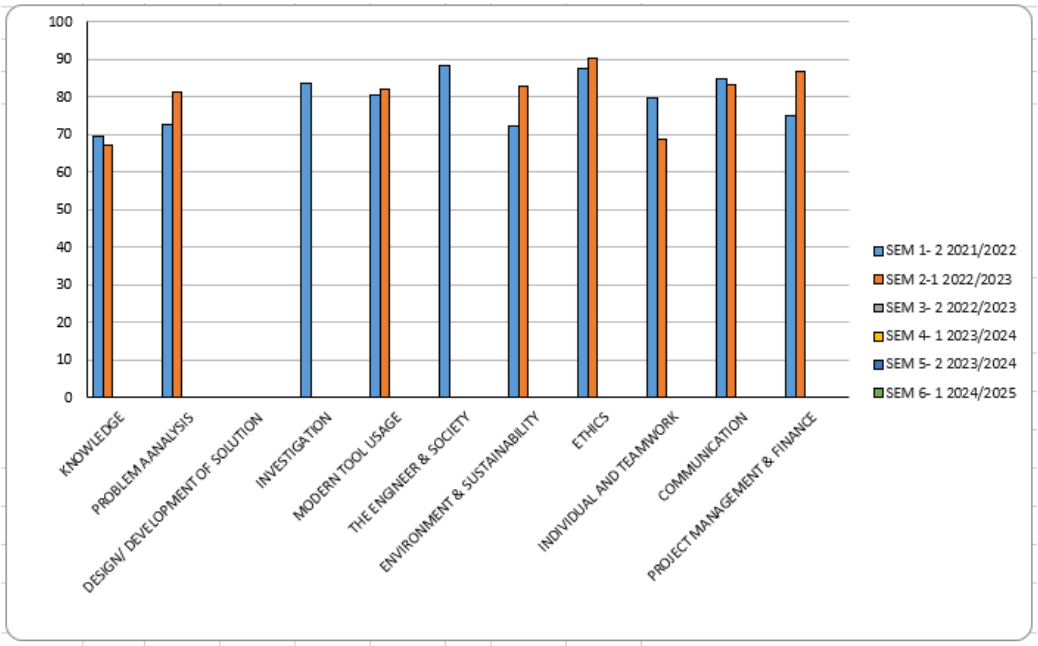


Figure C2-4d: PLO Achievement for complete cohorts of 1 2024/2025 Session DKM students by curriculum version 2024

All the PLO's data a keyed in S3P shown in **Figure C2-4e**. User will login in https://app.mypolycc.edu.my/s3p/index.php

Figure C2-4e: S3P interface

C2-5 Describe CQI implementation in relation to PO

E. CQI implementation in relation to PO

Course learning outcomes report involves the assessment results of course work and final examination for each course. Course Outcome Review Report (CORR), as shown in **Appendix C2-5a,** is provided at the end of each course learning session. The achievement of course learning outcome and improvement suggestions (CQI), as shown in **Appendix C2-5b,** must be filled out by every lecturer and Head of Programme (KP).

Programme learning outcomes report is related to a course's learning outcome. The Programme Learning Outcome Review Report (PLORR) is provided on the program's current and final semester (all PLOs). The programme learning outcome and the proposed improvement must be achieved by the Programme Leader and verified by the Head of Department (HOD) **Appendix C2-5c.**

Continuous Quality Improvement (CQI) can be implemented and proven by submitting a complete report with empirical data from the analyzed result. In the implementation of the CQI process shown in **Figure C2-5a**, there are some aspects that all academicians need to be emphasized. These aspects are fundamental in the effort to improve and strengthen the quality of the programs offered. The aspects are:

i. The implementation of OBE;
ii. The achievement analysis compared to KPI;
iii. The methods of measurement and assessment results;
iv. The approach taken in the implementation of CQI after analyzing the assessment results
v. The data management systems and documentation.

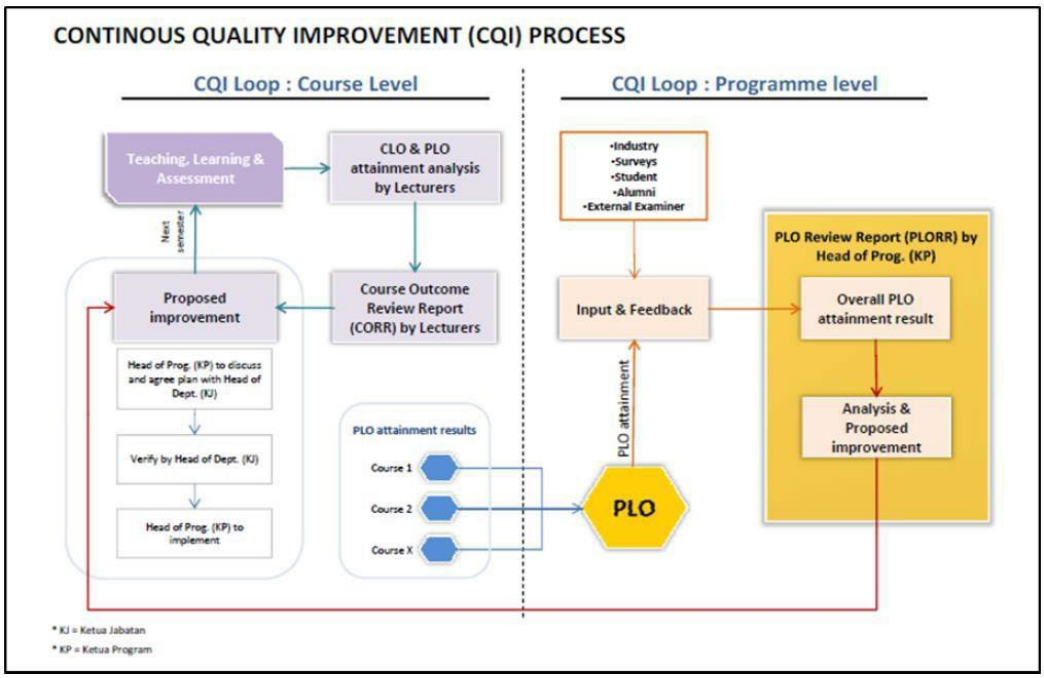
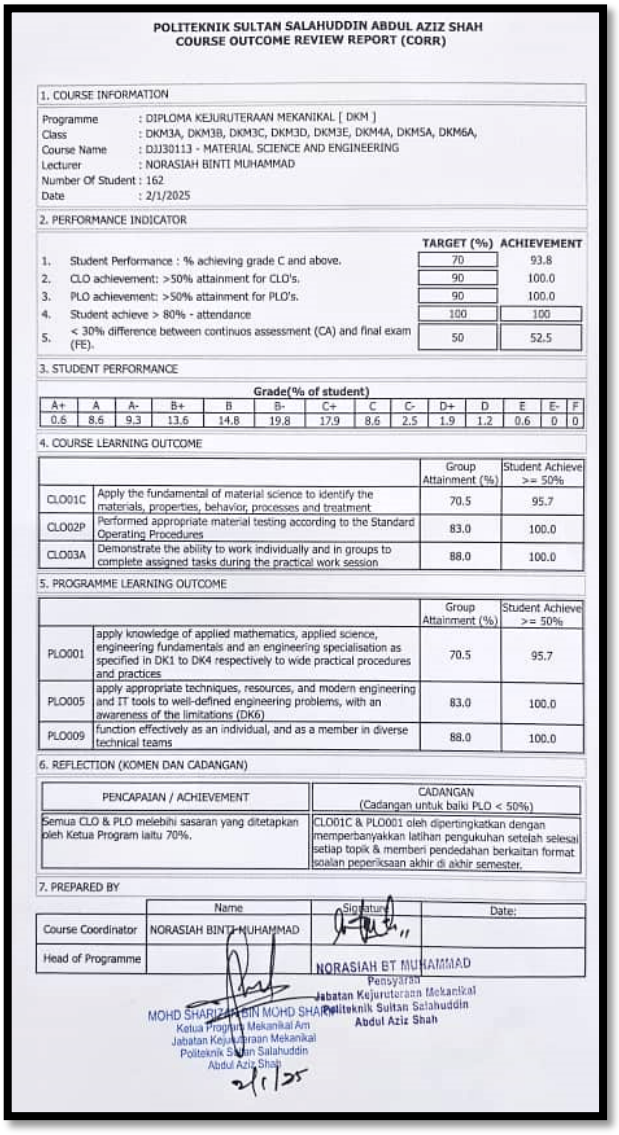


Figure C2-5a: CQI Process at Course and Programmed Level

The examples of CORR and PLORR can be shown in **Figure C2-6b** and **Figure C2-6c.** From those reports, the group attainment for all CLOs and PLOs for each course is evaluated at the end of the semester, setting a minimum achievement of 50%. Course Learning Outcome and Programme Learning Outcome achievement are utilized systematically as a source for the continual improvement of the programme. The areas that need improvement are identified, and the corrective measures are suggested to be implemented in the following semester. Course coordinators will discuss with lecturers to decide on CQI for next semester. This CQI information will be critical in the ePNP platform for lecturers references in **Appendix C2-5d**.



POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
COURSE OUTCOME REVIEW REPORT (CORR)

1. COURSE INFORMATION

Programme	: DIPLOMA KEJURUTERAAN MEKANIKAL [DKM]
Class	: DKM3A, DKM3B, DKM3C, DKM3D, DKM3E, DKM4A, DKM5A, DKM6A,
Course Name	: DJJ30113 - MATERIAL SCIENCE AND ENGINEERING
Lecturer	: NORASIAH BINTI MUHAMMAD
Number Of Student	: 162
Date	: 2/1/2025

2. PERFORMANCE INDICATOR

		TARGET (%)	ACHIEVEMENT
1.	Student Performance : % achieving grade C and above.	70	93.8
2.	CLO achievement: >50% attainment for CLO's.	90	100.0
3.	PLO achievement: >50% attainment for PLO's.	90	100.0
4.	Student achieve > 80% - attendance	100	100
5.	< 30% difference between continuos assessment (CA) and final exam (FE).	50	52.5

3. STUDENT PERFORMANCE

Grade(% of student)												
A+	A	A-	B+	B	B-	C+	C	C-	D+	D	E	E-	F
0.6	8.6	9.3	13.6	14.8	19.8	17.9	8.6	2.5	1.9	1.2	0.6	0	0

4. COURSE LEARNING OUTCOME

		Group Attainment (%)	Student Achieve >= 50%
CLO01C	Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment	70.5	95.7
CLO02P	Performed appropriate material testing according to the Standard Operating Procedures	83.0	100.0
CLO03A	Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session	88.0	100.0

5. PROGRAMME LEARNING OUTCOME

		Group Attainment (%)	Student Achieve >= 50%
PLO001	apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices	70.5	95.7
PLO005	apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)	83.0	100.0
PLO009	function effectively as an individual, and as a member in diverse technical teams	88.0	100.0

6. REFLECTION (KOMEN DAN CADANGAN)

PENCAPAIAN / ACHIEVEMENT	CADANGAN (Cadangan untuk baiki PLO < 50%)
Semua CLO & PLO melebihi sasaran yang ditetapkan oleh Ketua Program iaitu 70%.	CLO01C & PLO001 oleh dipertingkatkan dengan memperbanyakkan latihan pengukuhan setelah selesai setiap topik & memberi pendedahan berkaitan format soalan peperiksaan akhir di akhir semester.

7. PREPARED BY

	Name	Signature	Date:
Course Coordinator	NORASIAH BINTI MUHAMMAD	NORASIAH BT MUHAMMAD Pensyarah Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah	
Head of Programme		MOHD SHARIZAN BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah 2/1/25	

Figure C2-5b: Course Outcome Review Report (CORR)

PROGRAMME LEARNING OUTCOME ATTAINMENT SUMMARY													
MECHANICAL ENGINEERING DEPARTMENT													
	PROGRAMME: DIPLOMA IN MECHANICAL				CODE : DKM								
		ENGINEERING KNOWLEDGE	PROBLEM AANALYSIS	DESIGN/ DEVELOPMENT OF SOLUTION	INVESTIGATION	TOOL USAGE	THE ENGINEER AND THE WORLD	ETHICS	INDIVIDUAL AND COLABAROTION TEAM WORK	COMUNICATION	PROJECT MANAGEMENT & FINANCE	LIFE LONG LEARNING	
		PLO01	PLO02	PLO03	PLO04	PLO05	PLO06	PLO07	PLO08	PLO09	PLO10	PLO11	JUMLAH KURSUS PER SEMESTER
1 2024/2025													
SEM 1	COMPULSARY COURSE												
DUE10062	Technical English 1									79.6		72.2	
MPU24031	Sukan 1								89.8		87.3		
MPU24041	Kelab / Persatuan 1								82.6		87		
MPU24121	Unit Beruniform 1 (PLAS TLDM)								92		88		
MPU24151	Unit Beruniform 1 (PISPA)								84.5		76.9		
MPU24161	Unit Beruniform 1 (PENGAKAP)								87.5		83.3		
MPU24191	Unit Beruniform 1 (RELASIS)								81		90		
MPU24201	Unit Beruniform 1 (PANDU PUTERI)								92		80		8
MPU24211	Unit Beruniform 1 (BOMBA)								84.8		87		
	COMMON CORE												
DUW10042	Occupational, Safety and Health for Engineerin	67.8			81		87						
DBS10042	Engineering Sciences	63			86.7		88.5						
DBM10163	Engineering Mathematics 1	75.3	72.8						95.8				
	DISCIPLINE CORE												
DJJ10223	Engineering Drawing	74				80		75					
DJJ10232	Mechanical Workshop Practice 1					81	90.1						
DJJ10243	Workshop Technology	68.4						69.6				78.1	
	GROUP ATTAINMENT (%)	69.7	72.8	#DIV/0!	83.9	80.5	88.5	72.3	87.8	79.6	84.9	75.2	JUMLAH KURSUS PER SEMESTER
2 2024/2025													
SEM 2	COMPULSARY COURSE												
MPU21072	Penghayatan Etika dan Peradaban							83	87.3		79.3		
MPU24051	Sukan 2								88.6		90.7		
MPU24061	Kelab / Persatuan 2								88.8		89.7		
MPU22071	Integriti dan Anti-Rasuah								87.45		83.8		
MPU24231	Unit Beruniform 1 (PLAS TLDM)					83					89.7		

Figure C2-5c: Program Learning Outcome Review Report of DKM (PLORR)

C3-1. Discuss the programme structure and course contents to show how they are appropriate to, consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the Programme Outcome.

A. Programme Structure

Programme structure and course content are the main elements in the Diploma in Mechanical Engineering (DKM) curriculum document. This document is prepared by JPPKK during the curriculum design and review stage in the curriculum development process. DKM programme structure is based on the MQA Programme Standard for Engineering and Engineering Technology. According to the mapping shown in **Appendix C3-1a**, all of the MQA's credit requirements have been fulfilled by the DKM programme and also complied with ETAC qualifying requirements based on the Engineering Technician Education Programme Accreditation Manual 2024. There are four components in the programme structure: compulsory, common core, discipline core and elective. The courses under the modules are derived from the Body of Knowledge (BoK) for all programmes in polytechnics and the BoK of Mechanical Engineering.

Designing the curriculum starts with developing the courses based on the polytechnic general BoK framework. **Figure C3-1a** shows the BoK for all programmes in polytechnics. The framework comprises five components: Technical, Personal Development, Mathematics, Sciences and Workplace Competencies. The JPPKK designs the content of the technical courses concerning the mechanical engineering requirements.

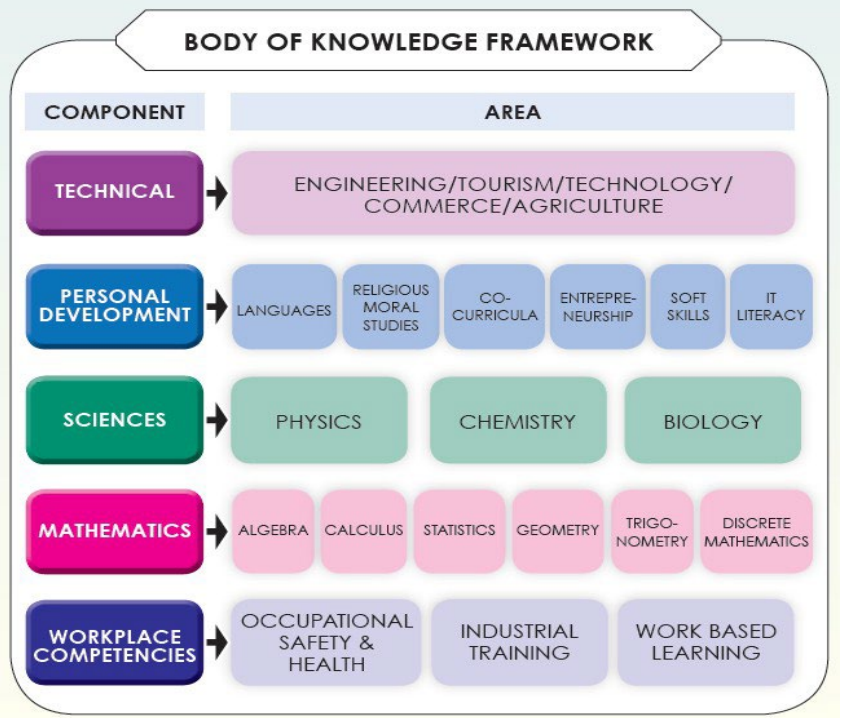


Figure C3-1a: Body of Knowledge for all programmes in polytechnic

Course content on Personal Development, Mathematics, Science and Workplace Competencies is designed by the JPPKK under the General Studies, Mathematics, Science and Computer Unit. This committee comprises content experts from the Department of General Studies and Mathematics, Science and Computer in Polytechnic.

The courses in the components support the programme outcomes, such as foundation knowledge for mechanical engineering, lifelong learning, communication skills and social attributes. The list of non-engineering courses mapping with General BoK is shown in **Appendix C3-1b.**

The technical contents are derived from BoK's Mechanical Engineering framework and mapped to the engineering requirements. There are eleven (11) knowledge areas considered in designing the content, which are Solid Mechanics, Statics & Dynamics, Thermodynamics & Heat, Fluid Mechanics, Materials, Mechanical Design, Workshop Practices, Manufacturing, Instrumentation & Control, Mechanical Maintenance and Electric & Electronic as shown in **Figure C3-1b**. These areas of knowledge represent the field of mechanical engineering work that content experts considered during the designing stage. Input and feedback from stakeholders are essential in selecting the course content that complies with industrial demands.

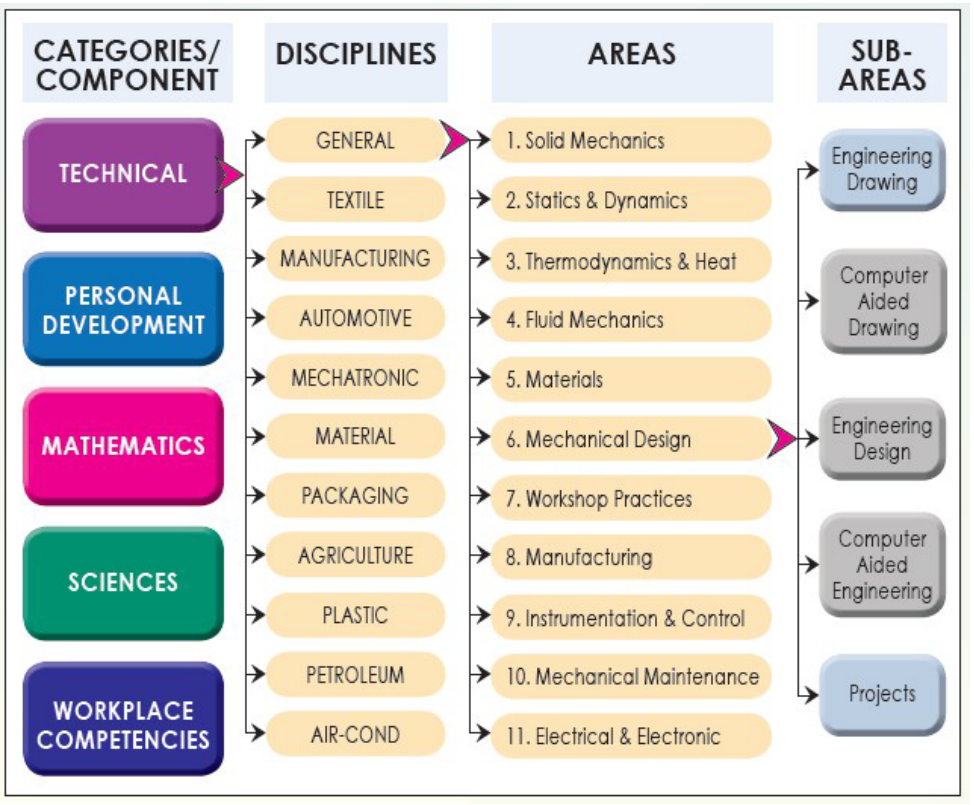


Figure C3-1b: Body of Knowledge of Mechanical Engineering

There are 21 courses on technical components, which comprise discipline core and elective modules, as shown in **Appendix C3-1c**. This appendix also shows the relationship between the BoK and Dublin knowledge profiles to indicate conformity.

The non-engineering and engineering courses are distributed into 6 semesters. The credit unit used in the programme structure is based on Student Learning Time (SLT) as defined in the MQF and the ETAC manual. The distribution of courses for each semester is shown in **Appendix C3-1d.**

The mapping between CLO and PO Matrix is stated in the curriculum documents. The program information document states the mapping for each course versus POs, as shown in **Table C3-1a.** The distribution of Engineering Courses is shown in **Table C3-1b,** and the calculations on ETAC practical component requirements are shown in **Table C3-1c.**

Table C3-1a: Courses versus Programme Outcomes Matrix

NO.	CODE	COURSES	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO10	PLO11
			PLO1: Engineering Knowledge (DK1-DK4)	PLO2: Problem Analysis (DK1-DK4)	PLO3:Design/Development of Solutions (DK5)	PLO4:Investigation (DK8)	PLO5: Tool Usage (DK2,DK6)	PLO6: The Engineer and the world (DK1,DK5,DK7)	PLO7: Ethics (DK9)	PLO8: Individual and Collaborative Team work (DK9)	PLO9: Communication (NA)	PLO10:Project Management and Finance	PLO11:Lifelong Learning (DK8)
COMPULSORY													
1	DUE10062	Technical English 1									√		√
2	DUE30072	Technical English 2									√		√
3	DUE50082	Technical English 3									√		√
4	DUE10065	Penghayatan Etika dan Peradaban							√	√		√	
5	MPU23182	Sains Teknologi dan Kejuruteraan Islam							√	√		√	
6	MPU23172	Nilai Masyarakat Malaysia**							√	√		√	
7	MPU20172	Penghayatan Etika dan Peradaban							√	√		√	
8	MPU22071	Kursus Itegriti dan Anti Rasuah								√		√	
9	MPU24031	Sukan 1					√					√	
10	MPU24051	Sukan 2					√					√	
11	MPU24XX1	Unit Beruniform 1					√					√	
12	MPU24XX1	Unit Beruniform 2					√					√	
13	MPU24041	Kelab/Persatuan					√					√	
COMMON CORE													
14	DUW10042	Occupational, Safety and Health for	√			√		√					

		Engineering											
15	DBS10042	Engineering Science	√			√		√					
16	DBM10163	Engineering Mathematics 1	√	√						√			
17	DBM20173	Engineering Mathematics 2	√	√						√			
18	DBM30183	Engineering Mathematics 3	√	√						√			
19	DJJ30332	Engineering and Society						√	√		√		
20	DUU10072	Entrepreneurship					√				√	√	
DICIPLINE CORE													
21	DJJ10223	Engineering Drawing	√				√		√				
22	DJJ10232	Mechanical Workshop Practice 1					√	√					
23	DJJ10243	Workshop Technology	√						√				√
24	DJJ20252	Mechanical Workshop Practice 2					√			√			
25	DJJ20263	Electrical and Electronic Technology	√				√						√
26	DJJ20273	Fluid Mechanics	√				√						
27	DJJ20282	Computer Aided Design	√				√						√
28	DJJ30332	Engineering and Society						√	√	√			
29	DJJ30302	Mechanical Workshop Practice 3					√	√					
30	DJJ30313	Engineering Mechanics	√	√			√						
31	DJJ30323	Strength of Materials	√			√	√						
32	DJJ30293	Thermodynamics	√	√			√						
33	DJJ40343	Material Science and Engineering	√				√			√			
34	DJJ40373	Pneumatic and Hydraulics	√		√		√						
35	DJJ40383	Engineering Design	√		√		√	√					
36	DJJ40352	Computer Programming	√				√						√
37	DJJ40363	Mechanics of Machines	√	√			√						
38	DJJ40392	Project 1		√				√				√	
39	DJJ50403	Project 2			√	√					√	√	
40	DJJ50413	Troubleshooting and Maintenance for Mechanical Components		√		√						√	
41	DJJ50422	Maintenance Engineering and Management	√					√				√	

ELECTIVE													
42	DJJ40432	Engineering Plant Technology		√					√		√		
43	DJJ40442	Industrial Management		√					√		√		
44	DJJ40462	Railway track system	√	√							√		
45	DJJ40452	Instrumentation and control		√		√					√		
46	DJJ40452	Renewable and Sustainable Energy	√					√					√
TOTAL			**21**	**12**	**3**	**6**	**21**	**10**	**10**	**11**	**10**	**15**	**8**

Table C3-1b: The Distribution of Engineering Courses

Semester	Course Code	Course	Course Type	Contact Hours			Credits
				L	P	T	
Semester 1	DJJ10223	Engineering Drawing	Core	1	3	0	3
	DJJ10232	Mechanical Workshop Practice 1	Core	0	4	0	2
	DJJ10243	Workshop Technology	Core	3	0	0	3
Semester 2	DJJ20252	Mechanical Workshop Practice 2	Core	0	4	0	2
	DJJ20263	Electrical and Electronic Technology	Core	2	1	1	3
	DJJ20273	Fluid Mechanics	Core	2	1	1	3
	DJJ20282	Computer Aided Design	Core	1	2	0	2
Semester 3	DJJ30293	Thermodynamics	Core	2	1	1	3
	DJJ30302	Mechanical Workshop Practice 3	Core	0	4	0	2
	DJJ30313	Engineering Mechanics	Core	2	1	1	3
	DJJ30323	Strength of Materials	Core	2	1	1	3
Semester 4	DJJ40343	Material Science and Engineering	Core	2	1	1	3
	DJJ40363	Mechanics of Machines	Core	2	1	1	3
	DJJ40373	Pneumatic and Hydraulics	Core	2	1	1	3
	DJJ40383	Engineering Design	Core	2	1	1	3
	DJJ40392	Project 1	Core	2	0	0	2
	DJJ40432	Engineering Plant Technology	Elective	2	0	0	2
	DJJ40442	Industrial Management	Elective	2	0	0	
	DJJ40452	Instrumentation and Control	Elective	2	0	0	
Semester 5	DJJ50403	Project 2	Core	1	3	0	3
	DJJ50413	Troubleshooting and Maintenance for Mechanical Components	Core	2	1	1	3
	DJJ50422	Maintenance Engineering and Management	Core	2	0	0	2
Semester 6	DUT600910	Engineering Industrial Training	Core	20 weeks			10
TOTAL CREDIT HOURS ENGINEERING RELATED COURSES							**63**

Table C3-1c: Practice oriented components courses

TYPE	CODE	COURSE	CREDIT	F2F HOURS	NF2F HOURS	TOTAL PRACTICAL SLT CREDIT
Common Core	DBS10042	Engineering Science	2	14	0	0.4
Discipline Core	DJJ10223	Engineering Drawing	3	42	50	2.3
Discipline Core	DJJ10232	Mechanical Workshop Practice 1	2	56	24	2.0
Discipline Core	DJJ20252	Mechanical Workshop Practice 2	2	56	24	2.0
Discipline Core	DJJ20263	Electrical and Electronic Technology	3	14	14.5	0.7
Discipline Core	DJJ20273	Fluid Mechanics	3	16	16	0.8
Discipline Core	DJJ20282	Computer Aided Design	2	32	30	1.6
Discipline Core	DJJ30293	Thermodynamics	3	14	9.25	0.8
Discipline Core	DJJ30302	Mechanical Workshop Practice 3	2	56	24	2.0
Discipline Core	DJJ30313	Engineering Mechanics	3	14	16	0.8
Discipline Core	DJJ30323	Strength of Materials	3	14	16	0.8
Discipline Core	DJJ40343	Material Science and Engineering	3	14	0.5	0.4
Discipline Core	DJJ40363	Mechanics of Machines	3	14	4	0.5
Discipline Core	DJJ40373	Pneumatic and Hydraulics	3	14	10	0.6
Discipline Core	DJJ40383	Engineering Design	3	23	30	1.3
Discipline Core	DJJ50403	Project 2	3	42	46	2.2
Discipline Core	DJJ50413	Troubleshooting and Maintenance for Mechanical Components	3	28	36	1.6
Industrial Training	DUT600910	Engineering Industrial Training	10			10
TOTAL PRACTICAL COMPONENT SLT CREDIT						**30.3**

The mapping of DKM's PLOs to the ETAC Knowledge Profile (DK), Well-Defined Problem Solving (DP) and Well-Defined Engineering Activities (NA) are shown in **Appendix C3-1e.** The mapping of DKM's courses to the ETAC Knowledge Profile (DK), Well-Defined Problem Solving (DP) and Well-Defined Engineering Activities (NA) are shown in **Appendix C3-1f.**

The curriculum document is distributed to polytechnics using the Curriculum Information Document Online System (CIDOS) portal http://portal.cidos.edu.my/. The current curriculum document of DKM was published in Julai 2024.

C3-2. Discuss the programme delivery and assessment methods and how these are appropriate to, consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the PO.

B. Delivery Methods

The DKM programme employs the Outcome-Based Education (OBE) approach as the learning model in the curriculum. This educational approach encourages the interaction between lecturers and students as it requires active participation from students. The delivery process focuses on Student-Centred Learning (SCL), whereby students are encouraged to participate actively in face-to-face delivery teaching methods in the classroom. SCL requires students to be more responsible in learning and utilizes self-determined study methods. By implementing this,

- Students are required to be more active both individually as well as in teams;
- Lecturers may focus more on promoting learning and facilitating the learning process;
- Students may become independent learners, as lecturers act mainly to create a learning environment that motivates students to be more active in searching course materials.

As part of the integrated approach, the programme adopts various teaching-learning methods. These methods include modern technology in classroom instruction, tutorials, project-based learning in laboratories and assignments, open-ended problem solving, seminar presentation and attendance, project demonstration, industrial, academic visits and industrial visiting lecturers.

Each course is accompanied by a course outline with a plan of weekly teaching and learning activities. It consists of the identity and description of the course, instructional analysis, course learning objectives, course outcomes, teaching and learning methods, outlines of the course content, course schedule, assessment methods, and the list of supporting literature. The content of the course outline is discussed with the students at the beginning of the semester.

The fundamental requirement in OBE is the identification of the student learning outcomes. Assessment methodologies for all programme outcomes and their relationship have been identified and shown in **Appendix C3-2a.**

C. Practice-Oriented Components

Theoretical lectures are complemented by hands-on skills and laboratory work attached to relevant courses. The students work in groups of 3 to 4 during practical sessions and

conduct experiments on the theories learnt through lectures. Thus, the students gain experience using the equipment in executing experimental works.

D. Final-Year Project (project-based)

Final-Year Project is a compulsory course for diploma programmes before graduation. This course enables students to apply their prior knowledge and skills by contributing ideas, creativity, innovation and problem-solving to a project with commercial values. Students will be guided and supervised by a lecturer involved in the teaching and learning process theoretically and practically, as well as through observations and assessments.

Project 1 in semester 4 provides the students with knowledge regarding implementing and developing a project based on problem statements, ideas and innovation. The students are exposed to the selection and early planning of a project, techniques to develop a project, application of the theory, and methods of preparing and presenting the project.

Project 2 in semester 5 is the continuation of Project 1. This course focuses on methods of construction, testing, troubleshooting, debugging, repairing, and completing the planned project. They are also required to prepare a project report and deliver a project presentation at the end of the semester.

The students are divided into groups of 3 to 4 under the guidance of a supervisor, but the students are assessed individually. The assessment includes the following:

Assessment Rubric DJJ40392 Project 1 as in **Appendix C3-2b**

a. Report - 40%
b. Log Book - 40%
c. Presentation - 20%

Assessment Rubric DJJ50403 Project 2 as in **Appendix C3-2c**.

a. Practical Product - 40%
b. Presentation - 20%
c. Log Book - 20%
d. Project report - 20%

Industry practitioners are invited as judges to give input and advice on the student's projects during the project presentations. Guidelines on the planning, implementation and reporting of the final-year project can be referred to the Students' Project Guide Book (Diploma Programme) Polytechnic Malaysia 2021 Edition (**Appendix C3-2d**)

E. Industrial Training

Industrial Training is a compulsory 10-credit-hour course that exposes students to actual engineering practice in various industries in their field of study. All students must undergo 20 weeks of industrial training during their final semester as a part of their graduation requirements.

The Industrial Training Course is introduced to empower the students' competencies and to enhance the graduates' work skills. It allows students to learn and gain practical experience in a real work setting to improve graduate employability.

This course provides students exposure to technology literacy, effective communication, social skills and teamwork, policies, procedures and regulations, professional ethics and reporting. It also provides students with real working experience while building enthusiasm, proactive attitude, and confidence to become excellent co-players in the industry upon graduation.

Upon completion of the industrial training, students are expected to be able to:

a. Apply related knowledge and skills at the workplace
b. Communicate effectively with others
c. Practice teamwork
d. Professionally and ethically comply with policies, procedures and rules of the organization
e. Perform the tasks assigned (during the industrial training) according to the prescribed format

The assessment process is divided into two categories namely:

1. Assessment by industry (60%)
    - Performance Appraisal (55%)
    - Logbook (5%)
2. Assessment by polytechnic (40%)
    - Visiting (20%)
    - Final Report (10%)
    - Presentation (10%)

The assessment forms to evaluate the students are shown in **Appendix C3-2e.**

F. Other Methods

Other modes of teaching delivery besides teaching and learning activities in the classroom include online learning and the Industry Visiting Lecturer Programme.

The 'Curriculum Information Development Online System' (CIDOS) is a Learning Management System (LMS) for students and lecturers to interact and exchange knowledge and information.

i. Blended Learning (BL)

BL is a formal education programme that involves combining online learning with

traditional classroom methods that require the physical and virtual presence of both teacher and students over a certain period. Polytechnic Malaysia requires that each institution practise at least 70% of their courses in the blended form. The course breakdown is determined using the Blended Learning Distribution Table (BLDT) and the Blended Learning Fulfilment Record (BLFR) as in **Appendix C3-2f** and **Appendix C3-2g.** The BL and face-to-face elements include the following components:

a. Online lectures/videos
b. eNotes (pdf/doc/etc.)
c. eCollaborative classes (online forums, collaborative activities)
d. Collaborative classes (face to face activities, in the form of tutorials, project based-learning, CDIO etc.)

ii. Industry Visiting Lecturer Programme

The Industry Visiting Lecturer Programme is an approach introduced to vary the teaching and learning delivery methods to enhance students' understanding of specific learning domains. Industry involvement enables students to relate the theories learned in the classroom to real work situations. There are two approaches under this framework, namely:

- Industry academic visits
- Visiting industry

An industrial, academic visit aims to provide students with an excellent opportunity to interact with industries and learn more about the industrial environment. Intending to go beyond academics, the industrial-academic visit provides students with a practical perspective on the world of work. It allows students to learn practically through interaction, working methods and employment practices. It gives them exposure to new technology and work practices instead of receiving solely theoretical knowledge taught in class. JPPKK also published the guide book for this programme as in **Appendix C3-2h**.

In the industry visiting lecturer programme, the industry practitioners are invited to give lectures on relevant topics to the students. This allows the students to gain insight into current technological developments in engineering. **Appendix C3-2i** shows the list of industries involved in this programme from 2023 to 2025.

G. Assessment Method

The program assesses the students' learning outcomes through various assessments, covering both formative and summative assessments. The assessment methods for students are consistent with the specified learning domain.

The course assessments are divided into two components, namely Continuous Assessments (CA), carried out throughout the semester, and the Final Examinations (FE), conducted at the end of each semester. **Appendix C3-2j** shows the percentage distribution between CA and FE for all courses in the programme.

i. Continuous Assessments

Each course has its appropriate assessment methods depending on the characteristics of the course itself. Students are assessed through various modes such as theory tests, assignments, quizzes, oral presentations, demonstrations, reports, practical work and practical tests. The achievement of learning outcomes is measured using these various methods of assessment. The specific evaluations are stated in the respective course syllabus's Assessment Specific Table (AST). **Appendix C3-2k** shows the Assessment Specific Table (AST) for semester 2 courses: DJJ20273 – Fluid Mechanics.

Course Item Specification Table (CIST) is used in planning and monitoring the development of the items for the coursework assessment. Through CIST, the distribution level of learning domains is monitored. In CIST, the learning outcomes, learning domain, mark distribution and types of assessment items are provided. **Appendix C3-2L** shows the developed CIST for the Thermodynamics course.

ii. Final Examination (FE)

The final examination is carried out at the end of each semester. It is a 2-hour examination session for 2 weeks. Evaluation through final examination involves assessment of the Cognitive Learning Domain (LD1). FE items are developed by the lecturers based on the Final Exam Item Specification Table (FEIST) for each course. FEIST is used to coordinate and ensure the assessment items are developed according to the predetermined Course Learning Outcome (CLO). **Appendix C3-2m** illustrates the Final Examination Specification Table (FEIST) for DJJ30293 – Thermodynamics course.

a. Moderation process for assessment on final examination papers and marking schemes

The reliability and validity of the assessments and evaluation for all final examination papers and scripts are conducted using a moderation process. This process is performed at the department level based on the assessment activities scheduled by the department moderation coordinators and their committee members. The moderation process of assessing and evaluating students' final examination scripts provides students with the fairness and validity of their assessments by the assessors. The procedure applied and the flowchart of the process can be referred to **in Appendix C3-2n.**

iii. Grade Point System and Grading System

a. Grade Point System

The evaluation system of the polytechnics under the Higher Education Ministry is based on the quantitative assessment method of students' performance for a particular programme, known as the Grade Point System.

According to the Grade Point System, students' performance for a particular course is based on the Grading System in which the student's achievement is assessed using two types of measurements, i.e.:

- Grade Point Average (GPA);

- Cumulative Grade Point Average (CGPA).

b. Grading System.

Marks obtained by students in a particular course will be given grade points and grades according to the groupings in **Appendix C3-2o.** The detailed procedure of examination and evaluation can be referred to *Buku Arahan-arahan Peperiksan dan Kaedah Penilaian* issued by the Examination and Evaluation Division, DPE, shown in **Appendix C3-2p**.

An instruction by JPPKK circulated on 10 February 2023 updated that passing requirements for a subject must consist of a minimum of 40% for continuous assessment and 20% for final examination referred to in **Appendix c3-2q**. This aligns with one of the 6 programme standards, which require a minimum passing rate for both continuous assessment and final assessment/ final examination.

The assessment to evaluate the achievement of the Programme Outcomes is carried out both at the programme level and the course level.

The evaluation process of the course learning outcomes and programme outcomes have been explained in **Section C2**. The data from the course learning outcome review report (CLORR) and programme learning outcome review report (PLORR) is analyzed by the Academic Committee of the programme to identify the necessary measures for improvement.

C3-4. Discuss how benchmarking report/s and feedback from stakeholders have been considered in Academic

H. Benchmarking

Benchmarking is a way of discovering what is the best performance being achieved. The objective of benchmarking is to use the data gathered in benchmarking process to identify areas where improvements can be made. The report for benchmarking is appended in **Appendix C7-5a**, all the feedback and outcome from the benchmarking then been considered to be presented in the Academic department meeting as platform to inform the best practice which can be used in the curriculum development.

C3-5. Discuss how the requirements of Well-defined Engineering Problem Solving (WEPS) and Well-defined Engineering Activities (WEA) have been addressed

I. Well-defined Engineering Problem Solving (WEPS) and Well-defined Engineering Activities (WEA)

The requirements of WEPS and WEA have been systematically addressed through the CLO–WEPS/WEA mapping in the curriculum. Each CLO is carefully aligned with the relevant category of engineering problem solving or activity, ensuring For WEPS – The mapped CLOs emphasize application of established principles, methods, and tools to solve problems with clear specifications and predictable solutions.

For WEA – The mapped CLOs ensure students are engaged in structured, supervised engineering activities that follow standard procedures and practices. These activities are well-defined, limited in

complexity, and through this CLO mapping, the program provides clear evidence that both WEPS and WEA requirements are fully integrated and addressed in teaching, learning, and assessment practices.

C3-6. Discuss laboratory exercises, including delivery approach and assessment scheme; and how these are mapped to PO.

J. Laboratory

All laboratory exercises are systematically mapped to the relevant Programme Outcomes (PO) to ensure a balanced development of knowledge, skills, and attitudes. Typically, the laboratory components address PO1 (Engineering Knowledge), PO2 (Problem Analysis), PO4 (Investigation), PO5 (Modern Tool Usage), PO6 (Engineer and Society), PO7 (Environment and Sustainability), PO8 (Ethics), PO9 (Individual and Teamwork), PO10 (Communication), and PO11 (Project Management and Finance) depending on the nature of the experiment. In certain cases, PO3 (Design/Development of Solutions) is also emphasised, particularly when the exercises involve designing procedures, applying engineering software, considering sustainability aspects, or addressing ethical implications. Assessment of these outcomes is carried out using structured rubrics, with an example provided in **Appendix C3-6a**: Labsheet and Rubric DJJ20273 Fluid Mechanics.

C3-7. Discuss Industrial Training scheme and how it is mapped to PO.

K. Industrial Training

Industrial Training is a compulsory component designed to expose students to real workplace practices and professional responsibilities. Through placement in relevant industries, students perform assigned tasks, communicate with supervisors, work both independently and in teams, and practice ethical and safe conduct in line with organizational policies. They are also required to prepare technical reports and demonstrate adaptability in handling workplace challenges.

The mapping of CLOs to POs shows that Industrial Training contributes significantly to the attainment of PO1, PO2, PO6, PO7, PO8, PO9, PO10, and PO11. These outcomes cover technical competence, problem-solving, ethics, teamwork, communication, sustainability awareness, and lifelong learning. Assessment is carried out through performance appraisals, observation, logbooks, presentations, and industrial training reports, ensuring that students are evaluated holistically in both technical and non-technical domains.

Table C3-7a: Mappinng CLOS to POS for Indutrial Training Scheme

CLO	Course Learning Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	Teaching & Learning Activities	Assessment Methods
CLO1	Perform the assigned task according to the requirements of the job scope	✓	✓										Demonstration / Coaching	Performance Appraisal
CLO2	Explain tasks assigned in the workplace utilizing effective communication skills										✓		Observation / Discussion	Performance Appraisal & Logbook

CLO3	Display ability to work collaboratively and individually based on the given task								✓			Observation	Performance Appraisal & Observation
CLO4	Practice professional ethics and fulfill responsibilities as an engineering technician						✓		✓			Observation / Discussion	Performance Appraisal, Observation & Presentation
CLO5	Initiate responsibilities as an engineering technician while adhering to policies, rules, and safety						✓	✓				Observation / Coaching	Performance Appraisal & Observation
CLO6	Write a report based on the given task, adhering to technical practices									✓		Discussion / Coaching	Industrial Training Report
CLO7	Demonstrate lifelong learning skills in completing the given tasks										✓	Observation / Coaching	Performance Appraisal & Industrial Training Report

C3-8. Describe exposure to engineering practice and how it is mapped to PO. Give examples of engineering practice activities.

L. Engineering practice mapped to PO

Students are systematically exposed to engineering practice through structured teaching, learning, and industrial-based activities. These activities allow students to apply theoretical knowledge, develop practical competencies, and experience real workplace environments. Such exposures are carefully designed to ensure alignment with Programme Outcomes (PO), thereby equipping graduates with the necessary skills, attitudes, and professional values required in the engineering field.

Table C3-7b: Mapping Example of Engineering Practice to Program Outcomes

Engineering Practice Activity	Description	Mapped to Programme Outcomes (PO)
Laboratory & Workshop	Machining, fitting, measurement, and testing using industry-standard tools and equipment.	**PO2 – Problem Analysis**: Identify and analyze well-defined engineering problems. **PO4 – Investigation**: Conduct investigations of well-defined problems using structured methods. **PO5 – Modern Tool Usage**: Apply appropriate techniques, resources, and modern engineering tools.
Industrial Training	Hands-on training in industries (maintenance, production, quality control).	**PO6 – The Engineer and Society**: Demonstrate awareness of societal, health, safety, legal and cultural issues.

		PO7 – Environment and Sustainability: Understand the impact of engineering solutions in environmental and sustainable contexts. **PO8 – Ethics**: Apply ethical principles and commit to professional ethics and responsibilities.
Projects	Solving real engineering problems through design, fabrication, and process improvement.	**PO3 – Design/Development of Solutions**: Design solutions for well-defined engineering problems. **PO8 – Individual and Team Work**: Function effectively as an individual and as a member in diverse technical teams. **PO9 – Communication**: Communicate effectively on well-defined engineering activities.
Engineering Software	Application of CAD, CAM, design and analysis.	**PO5 – Modern Tool Usage**: Apply appropriate techniques, resources, and modern engineering tools. **PO11 – Lifelong Learning**: Recognize the need for, and engage in independent and life-long learning.
Field Visits / Benchmarking	Visits to industries/plants/exhibitions for exposure to real-world applications.	**PO10 – Project Management and Finance**: Demonstrate knowledge of engineering management principles and apply them to one's own work. **PO11 – Lifelong Learning**: Recognize the need for, and engage in independent and life-long learning.

C3-9. Discuss Design Projects (DP) and/or Final Projects (FP), and how it is mapped to PO.

M. Final Year Project (FYP)

The Final Year Project (FYP) serves as a capstone experience that integrates knowledge, skills, and attitudes acquired throughout the programme. It provides students with the opportunity to demonstrate their ability to solve engineering problems, apply project management principles, and communicate effectively in both written and oral forms. The CLOs for the FYP are systematically mapped to the Programme Learning Outcomes (PLOs) to ensure constructive alignment with the programme objectives.

Through activities such as practical project work, discussions, presentations, and report writing, students are exposed to real engineering practices that develop creativity, critical thinking, teamwork, and professionalism. Assessment methods including logbooks, presentations, and project reports are employed to evaluate the achievement of CLOs, thus ensuring that the FYP contributes significantly to the attainment of PLOs and prepares students for professional practice or further studies. Table below shows the mapping of programme learning outcomes and assessment methods in Final Year Projects.

Course Learning Outcomes (CLO)			Programme Learning Outcomes (PLO)											Proposed Teaching & Learning Activities	Assessment Methods
			PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11		
CLO1	Organize project outcomes in progress report based on standard format	(P4 , PLO 10)										/		Project Activities	Log Book
CLO2	Construct design solutions to meet specified needs of the project with appropriate consideration	(P5 , PLO 3)			/									Project Activities	Practical Product
CLO3	Analyze the project results and write the project report to achieve proposed objectives	(C4 , PLO 4)				/								Discussion	Project Report
CLO4	Explain the project work and defend project outcomes effectively with good communication skills	(A4 , PLO 9)									/			Discussion	Presentation

Table C3-9a: Mapping of programme learning outcomes and assessment methods in Final Year Projects

C3-10. Discuss the extent to which the programme's various stakeholders are involved in the curriculum development and review process.

N. Stakeholders

Stakeholders play a crucial role throughout the curriculum review and development process. Their feedback, drawn from diverse groups such as industry, alumni, academic experts, professional bodies, staff, students, and benchmarking partners, forms the foundation for curriculum enhancement. This input guides the Curriculum Development Committee in drafting and improving curriculum documents, ensuring that the content remains relevant, current, and responsive to industry needs. The revised drafts, shaped by stakeholder perspectives, are then verified and recommended by advisory and technical committees before being approved at higher levels. Once endorsed, the curriculum is formalized through official circulars and implemented across institutions. Updates are also shared with MQA and professional bodies to maintain compliance and recognition. This process reflects the extensive involvement of stakeholders at every stage, from initiating improvements to ensuring the successful delivery of a curriculum that meets both academic standards and industry expectations.

The diagram shows the flow of curriculum development and approval. Stakeholder feedback is collected, and the curriculum document is drafted and improved. It is then verified and reviewed by committees, followed by approval at higher levels. Once approved, circulars and guidelines are issued, equipment norms are updated, and information is shared with professional bodies. Finally, the curriculum is interpreted and implemented at the institutional level.

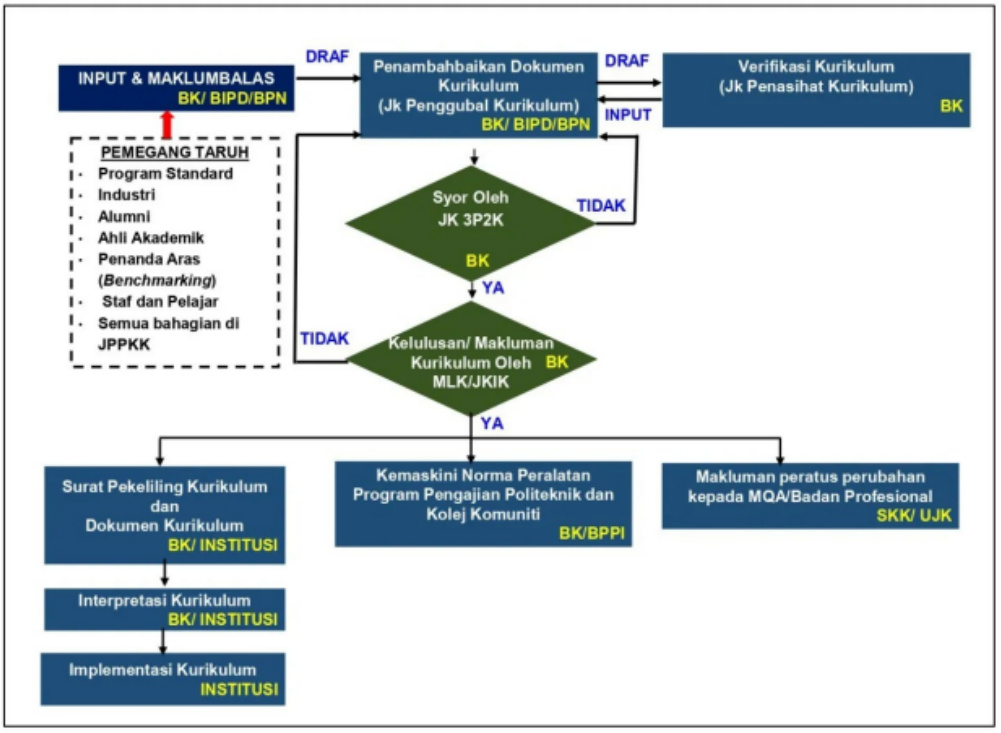


Figure C3-10a: Flow of curriculum development and approval

This table outlines the main stakeholders involved in curriculum development, their roles, and the related documents that support their contributions.

Table C3-10a: Main stakeholders' involvement in curriculum development

No.	Stakeholder	Description	Related Reports / Documents
1	Government / Quality Assurance Agencies	Provide funding and requirements for an educated population, and set policies and directions for higher education.	National Education Policy
2	Industry / Employers	Provide input on the latest developments in technology and industrial practices.	Industrial Advisory Committee (IAC) Report Minutes of Industrial Advisory Meetings
3	Academic Experts	Provide input on the latest technological developments and curriculum improvements.	Programme Advisory Meeting Minutes
4	Lecturers	Involved in both academic and administrative roles, with their professional lives influenced by the programme.	Curriculum Feedback System S3P Achievement Reporting System
5	Alumni	Provide input on technological developments and share past learning experiences.	Graduate Employability Survey PEO (Programme Educational Objectives) Survey
6	Current Students	Students who set aside other activities and potential income opportunities to pursue studies in the programme.	Student Performance Analysis Reports (CORR & PLORR)

C3-11. Discuss CQI strategies to be implemented in Academic Curriculum review

O. CQI strategies

Continuous Quality Improvement (CQI) in academic curriculum review is an integral part of Outcome-Based Education (OBE) practices and a requirement by ETAC/MBOT to ensure that the curriculum remains relevant, effective, and aligned with the Programme Educational Objectives (PEOs), Programme Learning Outcomes (PLOs), and stakeholder expectations.

1. Stakeholder Feedback and Industry Engagement

Regular feedback is gathered from students, alumni, employers, and industry advisory panels (IAP) through exit surveys, tracer studies, and employer surveys. Industry representatives are invited to curriculum review meetings to evaluate the adequacy of programme content against current and future industry needs. Feedback is then documented and used as evidence for revising course outcomes, content, and delivery approaches.

2. Outcome-Based Education (OBE) Assessment

Analysis of Course Learning Outcomes achievement in Course Outcome Review Reports (CLORR) and Programme Learning Outcomes attainment is carried out at the end of every semester in Program Outcome Review Report (PLORR). Areas of weakness are identified and actions are proposed in the CQI section of course reports.

3. Curriculum Benchmarking

The programme curriculum is benchmarked against similar programmes at other universities, polytechnics, and international institutions. Benchmarking findings are reported during curriculum review sessions and used to justify curriculum updates.

4. Formal Curriculum Review Cycle

The programme undergoes formal curriculum review every 3–5 years in addition to annual monitoring via course file reviews. Findings from course reports, external examiners, industry panels, and accreditation exercises are consolidated into a CQI action plan.

The CQI strategies embedded in the curriculum review process ensure that the programme remains relevant, competitive, and responsive to industry and stakeholder needs. This systematic approach strengthens the quality of teaching, enhances student learning outcomes, and ensures continuous compliance accreditation requirements.

C4-1 Discuss the requirement and process for admission of students to the program.

A. Requirement for Admission

The implementation of the policies towards achieving the targeted enrollment is overseen by the Student Admission Division with the support of Student Affairs Department in the respective polytechnics.

Student admission for the DKM programme is carried out twice a year, in Session 1:2025/2026 and Session 2:2024/2025 respectively. Both intakes process is done using online application procedures. During the Session 1:2025/2026 intake, application is done through Centralised Admission Agency at the Ministry of Higher Education via the portal http://upu.mohe.gov.my while application for the Session 2:2024/2025 intake is opened via the Student Admission Division portal at http://ambilan.mypolycc.edu.my. Admission requirements and all information related to admission can be obtained from the student admission portal at http://ambilan.mypolycc.edu.my. Refer (**Appendix C4- 1a)**

B. Process for Admission

Student admission for the Diploma in Mechanical Engineering (DKM) programme is carried out twice a year, in Session 1:2025/2026 and Session 2:2024/2025 respectively. During the Session 1:2025/2026 intake, application is done through Centralised Admission Agency at the Ministry of Higher Education via the http://upu.mohe.gov.my. Application for the 2:2024/2025 intake is opened via the Student Admission Division portal at http://ambilan.mypolycc.edu.my. Both intakes are done using online application procedures. Admission requirements and all information related to admission can be obtained from the student admission portal at http://ambilan.mypolycc.edu.my . (**Appendix C4- 1b)**

Entry requirement (**Appendix C4-1c**) for admission to the Diploma in Mechanical Engineering (DKM) is as follows:

1. **Malaysian Certificate of Education (SPM) holders:**
   - Malaysian Citizen
   - Has PASSED SPM or its equivalent and meets the following minimum entry requirements:

     i. Pass in *Bahasa Melayu* (Malay Language)
     ii. Pass in English Language
     iii. Pass in *Sejarah* (History) - (SPM 2013 onwards)
     iv. THREE (3) credits for the following subjects in SPM
       - Mathematics or Additional Mathematics
       - ONE (1) subject from the Science/Technical/Vocational grouping of subjects
       - Any subjects not accounted for from (i, ii, iii, & iv)
       - Does not have any disability that will hinder practical work

2. Polytechic Pre-Diploma holders:

- Has PASSED the Pre-Diploma Science Programme

3. Polytechnic Certificate holders:

- Malaysian Citizen
- Has PASSED SPM with :
  i. Pass in Bahasa Melayu
  ii. Pass in History (SPM 2013 onwards)
  iii. ONE (1) credit in any subject of SPM

Has a Polytechnic Certificate in the following fields:

- Sijil Politeknik Tahap 3, KKM
- Sijil Kolej Komuniti Tahap 3, KKM
- Sijil Institut Kemahiran Tinggi PERDA Tahap 3, KKM
- Sijil Institut Kemahiran MARA Tahap 3, KKM
- Sijil Kemahiran Malaysia Tahap 3

4. Lulusan APEL:

- Malaysian Citizen
- Has Pass APEL (Accreditation of Prior Experiential Learning) Certificate from MQA (Malaysian Qualifications) for Diploma (Tahap 4).

The admission procedures can be generalized into four major processes as shown in **Table C4-1a. Table C4-1b** shows the distribution of student enrolment for all academic years for the past three years for DKM and **Table C4-1c** show the entry qualification of final year students of the current year.

Table C4-1a: Admission Procedures

PROCESS	ACTIVITIES
APPLICATION	1. Applicants fill in on-line application forms using unique IDs. 2. Applicants print application slips for reference and verification.
SELECTION	Selection is done based on merit calculated from academic results and co-curricular activities participation, and is subject to the availability of places at the respective polytechnics.
OFFER & PLACEMENT	Approved applicants will need to indicate acceptance and send all supporting documents e.g. copies of certificates directly to the polytechnic for verification after which they can print their letter of admission and registration procedures.
APPEALS	Unsuccessful applicants can submit appeals on-line and all appeals will be considered based on the availability of places.

Table C4-1b: Distribution of Student Enrolment for All Academic Years for the Past Three Years for Diploma in Mechanical Engineering Programme

Year	**Semester**	**Year**				
		2025	**2024**		**2023**	
		I/2025-2026	**I/2024-2025**	**II/2024-2025**	**I/2023-2024**	**II/2023-2024**
1st Year	Sem 1	200	153	28	175	23
	Sem 2	28	24	150	15	171
2nd Year	Sem 3	150	164	26	92	13
	Sem 4	25	14	158	32	89
3rd Year	Sem 5	157	87	14	96	32
	Sem 6	15	32	93	34	93
Total Number of Students per Year		**584**	**474**	**469**	**444**	**421**

Table C4-1c : Entry Qualification of Final Year Students of the Current Year

Entry	Number
SPM	174
Certificate	7
Others (credit transfer, etc)	-

C4-2 Discuss the policies and processes for credit transfer/exemption.

C. Credit Transfer/Exemption Policies and Processes

Currently, the policies and processes for credit transfer and course exemption are outlined in the Guidelines for *Garis Panduan Pindahan Kredit & Pengecualian Kursus Program Pengajian Politeknik Edisi 2020* (Credit Transfer and Course Exemption for Polytechnic Programmes) edition 2020. Refer (**Appendix C4-2a)**

i. Credit Transfer

Credit Transfer is credit given to students who have taken the course in a previous programme in the same or different institution. There are two categories of credit transfer; horizontal and vertical. The horizontal credit transfer allows credit transfer from the same level of programme, e.g. diploma to diploma. The vertical credit transfer allows credit transfer from a lower level of programme to a higher level of programme, e.g. certificate to diploma.

The minimum requirements to be eligible for credit transfer are as follows:

- Minimum grade to be achieved for the consideration of credit transfer is C.
- The course must be equivalent or similar to 80% in content based on course and course comparison
- The course content does not exceed the equality of two courses when combined
- The courses are of the same credit value or equivalent or more to the new course in the programme.
- The course has been/is accredited by MQA.

The latest circular from the Department of Higher Education (DHE), dated 25 April 2016 has added to the credit transfer requirements, as follows:

- Allowing a maximum of 30% credit transfer for certificate holders (Level 3, MQF) to diploma holders (Level 4, MQF).
- Allowing credit transfer for students who have already obtained the qualification and wishes to continue studies for the second time at the same level.

Applications for overall grade transfer for students who transfer between polytechnics with the same program have been considered by MQA based on the stipulation that credits are counted in students' graduated credits and course grades are taken into account in the calculation of Grade Point Average (PNG) and Cumulative Grade Average (PNGK) at the same polytechnic is taken as a whole to the new polytechnic for the same program.

Notification has been made to all polytechnics through a letter Notification of Exchange of Polytechnic

Students with the Same Program dated March 20, 2023. Refer (**Appendix C4-2b**)

ii. Course Exemption

Course Exemption is given based on the students' knowledge and skills from the previous learning or experience. Course exemption does not carry any credit value. The policy for course exemption is done on the following bases:

- The equality of course content is proven by students' knowledge and skills
- The course exemption does not allow students to obtain credit value
- Students will be required to take other courses to replace the credit hours exempted in order to fulfil the total credit hours to graduate.

There was an amendment done on the credit transfer requirement in a letter dated 19th August 2016 from DHE (**Appendix C4-2c** is referred), where the following requirements were added:

- Graded Credit Transfer: Horizontal credit transfers for students who are still in the programme. Credits will be accounted for in total graduating credit and will be calculated in their GPA (Grade Point Average) and CGPA (Cumulative Grade Point Average).
- Non-Graded Credit Transfer/Credit Exemption: Both vertical and horizontal credit transfers for students who are not in the system (graduated students) and students who have achieved the competency level of the course. Credit transfer will not be reflected in their GPA and CGPA calculation but will be accounted for in total graduating credit.

Recently, there was an amendment done on the credit transfer requirement in a letter dated 30th January 2023 from JPPKK Refer (**Appendix C4-2d**), where the following requirements were added:

- Change of Mapping Form for Credit Transfer Guidelines and Exemption of Polytechnic and Community College Courses 2020 Edition.

C4-3 Discuss the counselling services available.

D. Counselling service

Unit Pengurusan Psikologi (UPP) provides various services aimed at student and staff psychological wellbeing and career development. The services include:

Table C4-3a : Service category provided by UPP

Service Category	Specific Functions
Personal / Emotional / Social Support	Helping students develop personal, social, spiritual strengths; supporting their mental health; helping them cope with personal or emotional issues.
Academic-Psychological Support	Interventions to help in academic performance: skills, study habits, motivation, overcoming academic-related stress or fears.
Career / Kerjaya Services	Career guidance / counselling: planning career paths, aligning student strengths (psychological) with career options.
Programs & Planning	Designing, implementing, evaluating & controlling psychology & career programs; developmental workshops etc.
Evaluation & Assessment	Psychological evaluation/assessments (possibly inventories, performance review etc.) as part of interventions.

Students at PSA can typically access the UPP through several channels. They may choose to walk in directly at the UPP, contact the counsellors via email or phone through the PSA administration, or schedule appointments using online portals and student service counters. These multiple access points ensure that counselling and support services are easily reachable and responsive to students' needs. Psychology and Counselling Services offered by UPP can be referred in **Appendix C4-3a**

At PSA, there are three counsellors available who can be approached directly by students for guidance, support, and counselling services. They provide assistance in areas such as academic stress, personal wellbeing, motivation, and time management, while also conducting awareness programmes and workshops to promote positive mental health among students. (**Appendix C4-3b**)

Other than that, there were also Rakan Pembimbing Perkhidmatan Awam / Public Service Peer Guidance (AKRAB) in PSA. **(Appendix C4-3c)** AKRAB stands for *Amanah, Komitmen, Rasional, Akhlak, Bestari*. It is a formal program of peer mentoring / peer guidance in the Malaysian public service. AKRAB is essentially a rebranding of earlier names like *Rakan Pembimbing*, *Pembimbing Rakan Sekerja*, *Pegawai Khidmat Kaunseling*, etc.

The objectives & purpose of AKRAB are:

- To provide guidance and mentoring among public servants to help improve potential, performance, and well-being.
- To serve as an intermediary support between employees and HR or psychological services for issues in the workplace.

- To help those facing challenges (personal or professional), including performance issues, stress, interpersonal problems, adapting to changes, etc.

C4-4 Discuss formal or informal feedback platform/channel to obtain student feedback for programme improvement, and how the feedback has been considered

E. Discuss formal or informal feedback platform

At PSA, student feedback is gathered through both formal and informal platforms, each playing a vital role in programme quality assurance, curriculum relevance, and continuous improvement.

Formal Feedback Platforms

Table C4-4a : Formal Feedback Platforms

Platform / Channel	Issue / Feedback Identified	Action Taken	Result / Improvement
Course & Teaching Evaluation	Some students reported less engaging teaching methods and unclear course delivery.	Results analysed by Head of Programme: lecturers sent for OBE and digital teaching training.	Improved teaching approaches, more interactive delivery, and higher Course & Teaching Evaluation scores.
Tracer Study *(Kajian Pengesanan Graduan)*	Graduates indicated a need for stronger soft skills and industry-relevant competencies.	Curriculum review added generic skills modules, group projects, and industrial input.	Better alignment of programmes with industry needs: improved employability rates.
Customer Complaint Box *(Peti Aduan Pelanggan)*	Students requested upgrades in ICT and sports facilities, and better counselling access.	PSA allocated funds for ICT and sports facility upgrades; strengthened UPP counselling services.	Enhanced campus environment, facilities, and student wellbeing.

Platform / Channel	Description	How Feedback is Considered
Class Representative Meetings *(Jawatankuasa Perwakilan Pelajar(JPP) /Perwakilan Pelajar Jabatan (JPP))*	Class reps act as intermediaries between students and the administration, raising issues like workload, facilities, or timetabling.	Feedback is discussed in departmental meetings. If the concern affects multiple programmes, it is escalated to higher management for systemic action.
MyJKM Student Info System *(MYJKM Info Pelajar)*	A centralised platform where student information such as academic progress, attendance, financial aid, and disciplinary records are stored and monitored.	Data analysed by academic and student affairs units : interventions planned (academic support, counselling, financial aid adjustments) to improve student performance and wellbeing.
Lecturer–Student Informal Dialogue	Students raise immediate academic concerns directly with lecturers during or after class.	Lecturers can make short-term adjustments (e.g., assignment deadlines, teaching methods) or channel feedback to the Programme Coordinator for longer-term improvements.
Student Affairs / Counselling Unit (UPP)	Students share academic and non-academic challenges in counselling sessions.	Counsellors identify recurring themes (e.g., stress, workload) and provide anonymised reports to management, informing decisions on support programmes or workload adjustments.
Social Media / WhatsApp / Telegram Groups	Departments and lecturers maintain group chats where students give spontaneous feedback (e.g., faulty equipment, scheduling).	Although informal, issues are often resolved quickly (e.g., lab repairs, class rescheduling), making this a fast-response feedback channel.

Table C4-4b: Informal Feedback Platforms

PSA uses a dual system of formal platforms (online evaluations, surveys, tracer studies, academic advising) and informal platforms (student reps, counselling, class dialogues, social media). Feedback is systematically channelled to programme committees, departments, and management. The feedback has led to curriculum adjustments, improved facilities, staff training, academic support, and wellbeing initiatives — ensuring continuous improvement and student-centred education.

At PSA, several Continuous Quality Improvement (CQI) initiatives have been implemented in response to data gathered from surveys, evaluations, and advisory systems.

Curriculum alignment was strengthened when feedback from graduate tracer studies revealed that employers valued stronger soft skills. As a result, PSA introduced generic skills modules and increased the use of group project-based learning to enhance teamwork, communication, and problem-solving abilities.

In terms of facilities upgrade, student satisfaction surveys highlighted the need to improve sports facilities at PSA. PSA responded by allocating funds to upgrade the sports infrastructure, ensuring that students have access to safer, more modern, and well-equipped facilities that support both co-curricular activities and overall wellbeing. (**Appendix C4-4a**)

Regarding teaching methods, course evaluations showed that students preferred more interactive learning approaches. To address this, lecturers were provided with professional training in Outcome-Based Education (OBE) and digital teaching methods, enabling them to deliver more engaging and effective lessons. (**Appendix C4-4b**)

Finally, in the area of student wellbeing, counselling records from the Unit Psikologi dan Kaunseling (UPP) showed that stress related to workload was a recurring issue. PSA took proactive steps by organising awareness programmes on time management and stress control, aimed at promoting healthier study habits and better mental resilience.

Through these measures, PSA demonstrates its commitment to continuous improvement by responding systematically to feedback and ensuring that curriculum, teaching, facilities, academic support, and wellbeing services evolve to meet student and industry needs.

By combining these formal and informal platforms, PSA ensures that student voices are consistently heard and acted upon. Formal channels contribute to long-term strategic reviews and quality assurance, while informal channels allow for agile day-to-day problem solving. Together, they form a comprehensive Continuous Quality Improvement (CQI) system that supports student success, enhances curriculum relevance, and strengthens the overall learning environment.

C4-5 Discuss students' workload.

F. Students Workload

The DKM curriculum structure has been designed to ensure that the student's workload is appropriate. The Head of Programme will ensure through the Course Coordinators that the assessments are scheduled and conducted accordingly to the course outline. The course outlines are circulated to students within the first or second week of each semester. The course outlines will help the students to manage their study schedules and prepare for the scheduled assessments.

As for Course Registration, according to *Buku Arahan Peperiksaan & Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama 2025 (Examination Instructions and Evaluation Methods Polytechnics and Community Colleges First Edition 2025)* published by the Department of Evaluation & Examination (Refer **Appendix C4-5a**), students are advised to register between 12 credit hours to 20 credit hours per semester or as stated in Programme Structure for DKM.

1. Students are allowed to register **below 12 credit hours per semester** if they fulfill the following requirements:
   - Permitted by Academic Advisor
   - Approved by Head of Department
   - Fulfill one of the following:
     i. Final semester student
     ii. Short semester student
     iii. Part time student
     iv. Students who obtained Restricted Results (KS) status for the previous semester examination.
2. Students are allowed to register **more than 20 credit hours per semester** if they fulfill the following requirements:
   - Permitted by Academic Advisor
   - Approved by Head of Department
   - Fulfill one of the following:
     i. Final semester students
     ii. Passed all courses from previous semesters
     iii. Obtained a CGPA of more than 3.00 in the previous semester

Based on the programme structure, for the hours the students need to spend in the class and laboratories as well as the expected number of their own self-study and working hours outside the class, it has been decided that the reasonable credit hours is 18 per semester. In general, for every credit hour registered, students are expected to spend 40 hours of learning time for a subject matter. This includes all the formal and informal lectures, assignments, tutorials, projects, self-study, examination preparation, and other activities related to the course.

For example, a three credit hour course will require 120 hours of Student Learning Time (SLT) meanwhile for a two credit hour course will require 80 hours of Student Learning Time. **Appendix C4-5b** shows an example of the SLT calculation.

Typically, a student goes through five academic semesters and one semester of industrial training to complete a diploma programme. Every semester the number hours is maintained not more than 18 hours. Table C4-4a shows the summary of the DKM students' workload per semester.

Table C4-5a: Summary of Credit Hour Breakdown by Semester for DKM Programme

Semester	**Credit Hour**					
	Compulsory	Common Core	Discipline Core	Specialization	Elective	Total
DKM 1	3	7	8	-	-	18
DKM 2	4	3	10	-	-	17
DKM 3	2	5	11	-	-	18
DKM 4	-	-	14	-	2	16
DKM 5	4	2	8	-	-	14
DKM 6	INDUSTRIAL TRAINING					10
Total Credit Hour						93

C4-6 Discuss student activities and involvement in student organizations that provide experience in management and governance, representation in education and related matters and social activities.

G. Student Activities and Involvement in Student Organizations

Students are encouraged to join clubs or organisation while studying at the polytechnic. Being actively involved in extracurricular activities will offer the students an opportunity to experience the management and social skills. Such organisations will organize functions, conduct elections to select administrators, meetings and discussions to help the society to bring benefits to the students.

There are many student activities provided and organised either at the polytechnic or at department level during the period of study at PSA.

In order to encourage the participation of students in curriculum development, teaching and learning, student welfare and various other activities, the following methods are used:

- Motivating students to participate at inter polytechnic or higher level activities by providing resources e.g. training grounds, coaches
- Leadership courses and financial support
- Sport events
- Open day
- Appreciating students' involvement through certificates of appreciation

There are many avenues for students to make contribution to curriculum and other relevant matters to them such as:

i. Polytechnic Student Representative Committee (JPP)

The JPP was formed with the objectives to create good student leaders, maximise the use of student facilities, plan and conduct various student-centered activities, promote multiracial participation in activities, and as mediator between students and upper management. JPP is represented by the students for the students. An annual student election is conducted to fill the posts offered in the MPP (**Appendix C4-6a**). There are various executive committees that help to address student's life issues and rights on campus. The activities managed and conducted by the committee range from organizing social corporate responsibility activities, student welfare and social activities. The activities conducted by the JPP benefits students either academically or for personal development (**Appendix C4-6b**).

ii. Mechanical Engineering Department Student Representative Council (PPJ JKM)

The establishment of PPJ JKM (Mechanical Engineering Department) (**Appendix C4-6c**) aims to nurture capable, responsible, and ethical student leaders while ensuring the effective utilisation of facilities and resources provided for Mechanical Engineering students. It strives to plan and organise student-centred programmes that emphasise academic excellence, innovation, and skills development. At the same time, it promotes inclusivity and unity by encouraging participation from all students regardless of background. PPJ JKM also serves as a bridge between students and the faculty or management, safeguarding and representing their welfare, rights, and concerns. Furthermore, it is committed to conducting activities that contribute to students' academic success, professional growth, and personal development. The activities conducted by PPJ JKM listed in **Appendix C4-6d.**

iii. Peer Facilitator (PRS)

PRS in PSA was initiated by the Psychology and Carrier Unit with the cooperation of Student Affairs Department. The intention of this organisation is to produce students as peer facilitators as well as conduct psycho- educational programmes such as self-development, motivation and career development. The organisational charts are shown in **Appendix C4-6e.** The activities conducted by Psychology and Carrier Unit listed in **Appendix C4-6f.**

iv. Mechtech Club

All the activities are planned according to the needs of the programme outcomes so students will have a comprehensive learning experience in and out of the classroom. Among the activities organised by Mechtech Club (**Appendix C4-6g**) are Academic/Industrial Visits, Community Social Responsibility, Engineering knowledge based competition and Social and recreational activities (**Appendix C4-6h).**

v. Friends of Islamic Centre (RAPI)

RAPI is under the patronage of PSA Islamic Centre. The objective of this organization is help build and strengthen the personality of Muslim students by empowering their religious knowledge. Community based activities are conducted to enrich students' communication skills with the society as well as their management skills. (**Appendix C4-6i & Appendix C4-6j)**

vi) Residential College Student Committee (JPKK)

JPKK is a committee established to look after the welfare of residential college residents which is Aman, Damai & Sentosa. (**Appendix C4-6k**) Among the activities organized by JPKK (**Appendix C4-6l**) are registration for residential college, introduction to residential college and community social responsibility.

C4-7 Discuss student performances in relation to PO from overall holistic perspective involving both curricular and cocurricular activities, such as participation in competitions, public speaking, sports and cultural activities, etc

H. Students' Performance in Relation to Programme Learning Outcomes

Students' performance in relation to the Programme Learning Outcomes is assessed based on:

Academic Assessment

These assessments require students to demonstrate knowledge and skills that are measured in order to obtain the expected outcomes. The assessments include the following:

- **Coursework Assessment** - Coursework is conducted to broadly test the students' retention and ability to use prerequisite materials. Coursework grades are based on performance on tests, quizzes, assignments, tutorials and projects. These items are an important standard evaluation component. All coursework assessments are designed based on appropriate cognitive domains and levels of taxonomy provided by the course syllabus.
- **Laboratory Work** - Students participate in laboratory experiments and derive the data required. They then proceed to tabulate and analyze the data obtained. Finally, they prepare laboratory reports as required. The laboratory work is designed based on appropriate cognitive domains and levels of taxonomy provided by the course syllabus.
- **Final Year Project** - Currently, the processes for the Engineering Final Year Project are outlined in the Guidebook for Buku *Panduan Pelaksanaan Projek Pelajar Politeknik Edisi 2021* (Guidebook for Student Project Review) edition 2021 (**Appendix C4-7a**). For the Engineering Final Year Project, every student will have a project topic and supervised by a lecturer. The student has to produce a complete project report and presentations to be evaluated by the internal and external review teams. The guidebook is in effect starting December 2020 session, as instructed in a letter circulated on 30 March 2021 (**Appendix C4-7b**)
- **Final examination** - Final examinations are conducted at the end of each semester.

Non Academic Activities

Non Academic Activities are basically co-curricular activities to benefit the development of student personality and provides a platform for students to express their diverse interest, talents, skills and their creativity. There are graded and non-graded co-curricular activities. **Appendix C4-7c** shows the tabulation of Graded Co-Curricular Paths

1. Graded co-curricular activities **-** Students are given the option to choose one of the two

paths offered in graded co-curricular activities. There are two paths to choose from; Path 1 and Path 2.

- Path 1 (Uniformed units): Students who are interested in this path are required to join Level 1 during the semester one. They will proceed to Level 2 during semester 2. This path only carries one (1) credit value for Levels 1 and 2.
- Path 2 (Clubs): Students who are interested in this path are required to join one (1) sport club during the semester one and one (1) club during semester 2.

2. Non-graded co-curricular activities - Students are given opportunities to express their talents and skills in various sporting events as well as non-sporting events. The list of student's achievements in sport events that have been conducted for the year of 2024 - 2025 is shown in **Appendix C4-7d** while student achievements in other co-curricular areas are stated in **Appendix C4-7e**.

As for Academic Advisory System, according to *Buku Panduan Sistem Penasihatan Akademik (SPAk) Edisi 2022* (Academic Advisory System Guidebook, 2022 Edition), published by Department of Education - Instructional and Digital Learning Section, all students are assigned to an academic advisor. The academic advisor will monitor student performance throughout their studies. Weekly meetings are conducted between the students and the academic advisor to discuss the students' performance and well-being. Refer (**Appendix C4-7f).**

In addition, students with other problems such as social, spiritual and emotional problems are referred to the counselor. Counselors are available to offer counseling and psychological services either through walk-in appointments, pre-dated appointments or invitation from the counselor. All of the students' data and records are kept private and confidential by the counselors.

Intervention programmes were conducted to boost the morale of the students, to motivate the students, inculcate self-directed learning and to nurture lifelong learning among these students. Programmes such as 'Psychometric Test" have been conducted in collaboration between the Psychology and Counseling Unit and Academic Advisory System to motivate the students on their studies. These programs offer opportunities for students to develop personal autonomy, positive self-perceptions, leadership skills, social responsibility, and a heightened community consciousness of and appreciation for sameness and difference.

For financial help, students are referred to the Student Affairs Department for financial loans. Refer (**Appendix C4-7g)**

C4-8 Discuss CQI strategies to be implemented in relation to student performance.

I. CQI strategies to be implemented in relation to student performance

Continuous Quality Improvement (CQI) at PSA is implemented through a continuous cycle that includes data monitoring, academic interventions, curriculum enhancement, lecturer development, student support, and systematic feedback review.

In terms of **data collection and monitoring**, course assessment analyses are carried out regularly, covering assignments, examinations, projects, and practical work to identify weaknesses in learning outcomes (LOs). In addition, assessment committee or examination board meetings are held to review grade distributions, failure rates, and overall performance patterns. An early alert system is also applied to monitor attendance, GPA, and continuous assessment results in order to identify at-risk students as early as possible.

For **academic support interventions**, remedial and bridging classes are offered in core courses with high failure rates such as Strength of Material & Electrical & Electronic Technology. Peer tutoring and mentoring programmes are also introduced, where senior or high-achieving students guide their juniors. Learning skills workshops are conducted to cover areas such as study strategies, time management, and examination techniques. Furthermore, the *Sistem Penasihatan Akademik* (SPAk) ensures students are monitored through regular academic advising sessions that also address personal challenges.

With regard to **curriculum and teaching enhancement**, Outcome-Based Education (OBE) alignment and review is carried out by mapping Course Learning Outcomes (CLOs) to Programme Outcomes (POs) and adjusting teaching strategies where CLO attainment is weak. Lecturers are encouraged to adopt innovative pedagogies such as flipped classrooms, project-based learning, and problem-based learning (PBL), while integrating digital tools including learning management systems (LMS), simulations, and e-learning platforms. The curriculum is also made industry-relevant through real-world projects, industrial training, and employer feedback.

In **lecturer development**, continuous professional training is provided in areas such as OBE, assessment strategies, and digital pedagogy. Peer observation and sharing sessions allow lecturers to reflect on and exchange best practices. New lecturers are also supported through mentoring programmes with guidance from experienced staff.

For **student wellbeing and motivation**, psychological support is made available through the Unit Psikologi dan Kaunseling (UPP), assisting students in managing stress, motivation, and personal issues that may affect performance. Co-curricular and leadership activities are organised to strengthen soft skills, teamwork, and confidence. Recognition and rewards such as *Anugerah Ketua Jabatan*, scholarships, and certificates are also offered to encourage academic excellence.

Finally, **continuous review** is conducted through both formal and informal student feedback, including

course evaluations, surveys, and class representative meetings. Feedback from employers and alumni is also gathered through graduate tracer studies and industry advisory panels. All CQI actions are documented in programme CQI reports, capturing issues identified, corrective actions taken, and measurable improvements achieved.

In conclusion, CQI at PSA is implemented holistically through an ongoing cycle of performance monitoring, academic and personal support, curriculum and teaching enhancement, lecturer development, and structured feedback mechanisms. These efforts ensure effective teaching, stronger learning outcomes, industry-aligned programmes, and graduates of high quality.

C5-1 Discuss the strength and competencies of the teaching staff in covering all areas of the programme and in implementing the outcome-based approach to education

A. Strength and Competencies of Academic Staff

DKM programme is supported by twenty-five (25) competent teaching staff with an average of thirteen years of teaching experience in the engineering field. They consist of three (3) PhD holder, five (5) master degree holders, fourteen (14) bachelor degree holders and three (3) diploma holders. **Table C5-1a** shows the breakdown of the teaching staff (full time programme) for the past three years. The result from the calculation shows that the teaching staff of the programme is definitely capable to accommodate student-staff interaction, advising and counselling, service activities, professional development and interaction with practitioners and employers. **Appendix C5-1a** show the table of competency matrix of the DKM programme teaching staff. It shows the distribution of the courses which are offered by the programme to the DKM teaching staff to ensure that they are covering all areas of the programme.

OBE is an approach practised by the teaching staff which during the teaching and learning sessions, assessments (end of chapters, quizzes, tests, presentations, practical works, etc.). They are always encouraged to attend programs, courses, talks and workshops to enhance their knowledge in the approach.

Table C5-1a: Breakdown in Terms of Number of Academic Staff (Fulltime and Inter- programme) by Session for All Academic Years for the Past Three Years

Academic Staff	Year					
	2022/2023		2023/2024		2024/2025	
	I-JUN	II-DIS	I-JUN	II-DIS	I-JUN	II-DIS
(a) Total number of full-time staff (including those serving other programmes and staff on study leave)	29	25	27	28	28	25
(b) Full-time equivalent of teaching staff servicing other programmes	9	4	7	10	8	6
(c) Teaching staff (on study leave)	-	-	-	-	-	-
(d) Tutor	-	-	-	-	-	-
(e) Effective full-time academic staff = (a) – (b) – (c) – (d)	20	21	20	18	20	19
(f) Full-time equivalent of academic staff from other programmes servicing this programme	17	15	15	18	18	16
(g) Full-time equivalent of part time teaching staff	-	-	-	-	-	-
Full-time Equivalent Academic Staff (FTES) Contributing to Staff:Student Ratio = (e)+(f)+(g)	37	36	35	36	38	35

B. Summary of qualification, industrial experience and development

The staff of DKM programme possess relevant qualifications, industrial experiences and development in their career. **Table C5-1b** and **Appendix C5-1b** illustrates the names of the full-time staff with their areas of specialisation. The table clearly shows that there is a good and adequate blend of academic staff in terms of individual traits to ensure the smooth running of the programme. The details of each teaching staff can be referred from their Curriculum Vitae (CV).

Table C5-1b: Analysis of All Teaching Staff

No	Name	Post Held	Date of First Appointment at the Fac/ Sch/ Dept.	Part or Full Time or from other Programmes	Academic Qualifications/ Field of Specialization/ Institution and Year of Award	Professional Qualifications	Membership in Professional Bodies	Years of Experience		Level of Activity (high, med, low, none)				
								Industrial	Teaching	High	Medium	low	none	
										Professional Society (indicate society)	Research	Consulting (Industry)	Publications	Administration
MECHANICAL ENGINEERING DEPARTMENT														

1	MUHAMMAD FAIZ B. ABDULLAH	Senior Lecturer	01.02.2004	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'03	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	BEM, Ahli Majlis Rekabentuk Malaysia	ROKUM INCKO ELEKTRONIK (M) SDN. BHD	19 years						
2	MOHD SHARIZAN B MOHD SHARIF	Senior Lecturer	01.04.2002	Full time	Sarjana Muda Kejuruteraan Mekanikal, UTM'2013	SIJIL KEMAHIRAN MALAYSIA - Mesin Level 3	BEM, Malaysian Nature Society (MNS)	INDSYS ENG. SDN. BHD	21 years						
3	DR. NORASIAH BINTI MUHAMMAD	Senior Lecturer	01.04.2004	Full time	SARJANA MUDA KEJURUTERAAN BAHAN. SARJANA SAINS KEJURUTERAAN BAHAN.	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA -	BEM		19 years						

						Pengajaran TVET Level 4				
					DOKTOR FALSAFAH KEJURUTERAAN MEKANIKAL (UiTM SHAH ALAM)					
4	SHARIZA AZWIN BINTI YAHYA	Senior Lecturer	20.01.2003	Full time	Sarjana Muda Kejuruteraan (Mekanikal - Aeronautik), UTM'2000	SIJIL CIDB MALAYSIA - CONSTRUCTION SITE SUPERVISOR (MECHANICAL WORKS) (LEVEL 4)	BEM MAJLIS REKABENTUK MALAYSIA	Universiti Teknologi Malaysia PSC-Naval Dockyard	20 years	
					Diploma Perguruan (KPLI)	DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4				

						SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3										
						AUTODESK CERTIFIED PROFESSIONAL_Inventor										
						AUTODESK CERTIFIED PROFESSIONAL_Inventor 2015										
5	ZETTY ROHAIZA BINTI MOHD SAHAK @ ISHAK	Senior Lecturer	01.04.2004	Full time	SARJANA FALSAFAH(MEKANIKAL)	Profesional Certificate in System Integration (2021) (European International Universiti).	BEM	NAZA KIA SDN BHD ,PUCHONG.	19 years							
					Sarjana Muda Kejuruteraan Mekanikal, UTM'2000	PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS										
						SKM 3- FABRIKASI LOGAM, MINYAK & GAS (2023)										

6	MOHAMAD KHIRUDIN AMDAN	Senior Lecturer	1.7.1997	Full time	Sarjana Muda Kejuruteraan Mekanikal serta Pendidikan, OUM'07 Sarjana Proses Keselamatan & Pencegahan Kehilangan (UPM-2015)	Dip Advance Welding - SLV Duisburg SIJIL KEMAHIRAN MALAYSIA TAHAP 1 - Jurukimpal Arka	MEMBER TECH ASSOCIATION OF MALAYSIA, Professional Technologist MBOT (Malaysia Board Of Technologists)	MITSUI HIGH TECH SDN. BHD	26 years						
7	WAN MAJDAH BINTI TON MAMAT	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'04	Penyelia Tapak Binaan (Kerja Mekanikal)(Tahap 4) Profesional Certificate in KNX Systems (Basic)	BEM, Majlis Rekabentuk Malaysia, Professional Technologist MBOT (Malaysia Board Of Technologists)	PANASONIC APPLIANCES (M) SDN. BHD.	15 years						

					Sarjana Pendidikan Teknik & Vokasional, KUiTTHO'2002	AUTODESK CERTIFIED PROFESSIONAL: Inventor		NAZA KIA SDN BHD						
8	NURAZLINDA BINTI YAHYA @ MUHAMMED	Senior Lecturer	01.09.2003	Full time	Sarjana Muda Pengurusan Teknologi (Pembuatan), UTM'2000	AUTODESK CERTIFIED PROFESSIONAL: AutoCAD	MBOT (Malaysia Board Of Technologist)	KEMENTERIAN KERJA RAYA	20 years					
						AUTODESK CERTIFIED PROFESSIONAL: AutoCAD 2010		HING TAI (2020) SDN BHD						
						SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3								
						DIPLOMA KEMAHIRAN MALAYSIA -								

						Pengajaran TVET Level 4									
9	AHMAD FAKARUDDIN BIN MOHD FAUZI	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, UTM 2005 Sarjana Kejuruteraan (Sistem Pembuatan), UKM 2013 Diploma Pendidikan Lepasan Ijazah, UPSI 2009	Autodesk Certified User: Inventor SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	BEM, NUTP	MEDIA-TEK DIGITAL SERVICES SDN. BHD.	15 years					
10	NOORAZLAN BIN MOHD SAMSUDDIN	Senior Lecturer	01.11.1997	Full time	Sarjana Muda Kejuruteraan Mekanikal serta Pendidikan, OUM'07	SIJIL KEMAHIRAN MALAYSIA (Jurukimpal Arka Tahap 1 & Tahap 3)) WELDING MASTER (Manual Metal Arc Welding) (Germany) WELDING MASTER (Matel	MEMBER TECH ASSOCIATION OF MALAYSIA, Professional Technologist MBOT (Malaysia Board Of Technologists)	MAH SING PLASTICS INDUSTRIES SDN. BHD	26 years					

						Active Gas Welding - Steel) (Germany)									
11	ASRI BIN MAT DESA	Senior Lecturer	01.02.2000	Full time	Sarjana Pendidikan (Teknikal), UTM Sarjana Muda Sains Kejuruteraan Mekanikal (Pembuatan), UTM, Diploma Kejjuruteraan Mekanikal (Am) POLIMAS Sijil Kejuruteraan Mekanikal (Am) POLIMAS	International Cert. Sevices in Welding Inspection & NDT-CSWIP 3G Welder Certification (SMAW) Shielded Metal Arc Welding Process (Level 3)	BEM. MRM	Johnson & Johnson National Cience Centre	24 years					
12	ALIAS BIN OTHMAN	Senior Lecturer	20.01.2003	Full time	Sarjana Muda Kejuruteraan Mekanikal, University Of Salford, 1999	Approved welder, TWI	BEM		21 years					
13	Ts. TEOH THEAN HIN	Senior	01.03.2007	Full time	Sarjana Muda Kejuruteraan Mekanikal dengan	Microsoft Office Specialist PowerPoint 2013	Graduate Member BEM Professional		18 years					

		Lecturer			Kepujian, KUiTTHO 2005 Sarjana Pendidikan Teknik dan Vokasional, UTHM 2006		Technologist MBOT							
14	ASMIRA BIN ASHARI	Lecturer	02.01.1999	Full time	Master Process Safety & Loss Prevention, UPM'2015 Sarjana Muda Pendidikan (Kejuruteraan Mekanikal) OUM'2007 Diploma Kej. Mekanikal (Loji) ITTHO 1996	IRCA UK (Lead Auditor OSHMS) No. 193967	Professional Technologist MBOT Reg Num : PT18050565. Malaysian Society Occupational Safety & Health - Membership Number 7470	Matshushita Electronic (M) Motor - Technician 1995/1996	24 years					
15	DR. KHAIRULNIZAM BIN KASIM	Senior Lecturer	2/1/1999	Full time	PhD Mechanical Engineering, UiTM '2023			Sony Penang	24 yrs					

16	ZULKHAIRI BIN KHAIRUDIN	Senior Lecturer	01.07.1998	Full time	Sarjana Muda Pendidikan (Kejuruteraan Mekanik), OUM'06	SIJIL KEMAHIRAN MALAYSIA - Kimpalan Level 3			25 years					
17	DR. MAZYAN BINTI YAHAYA	Senior Lecturer	02.01.2002	Full time	PhD Mechanical Engineering, UiTM 2022	SKM - Pelukisan Pelan Mekanikal Level 3, SKM-Smart Home (modular), Profesional Certificate in KNX Systems (Basic/Advanced/Tutor), CIDB-SKKP Dye Penetrant Testing (PT) Level 2, CIDB-SKKP Magnetic Particle Testing (MT) Level 2, TWI-CSWIP 3.0 Visual Welding Inspector, CIDB	BEM-Graduate Engineer, MPM2A-Member	none	19 years					

						Greencard, NIOSH-OGSP, NIOSH-AESP, Google Certified Educator Level 2(expired 2025)									
18	MOHD FAUZI B DERANI	Senior Lecturer	07.09.2001	Full time	Sarjana Muda Kejuruteraan Elektrik serta Pendidikan, OUM'2009	KNX Basic, Intermediate, Advanced	BEM - G1258583L, NUTP	KOSIJAYA DIDACTIC	22 years						
19	MOHD NASIR BIN KAMARUDDIN	Senior Lecturer	04.08.2002	Full time	Sarjana Muda Kejuruteraan Mekanikal, Kuiitho 2002 Diploma Perguruan Malaysia, Maktab Teknik 2006	Autodesk Certified User: Inventor (competency) MASTERCAM Professional Certificate Basic Of Pneumatic		ICHOR SYSTEMS	22 years						

						SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 Profesional Certificate in KNX Systems (Basic) DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4									
20	ISHAK BIN HASSAN	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'04	memanah level 1, lesen c teknikal woodball, microsoft specialist (mos)-power point	BEM		15 years					
21	MOHD HARIZ B SAMIAN	Senior Lecturer	01.04.2009	Full time	Sarjana Muda Kejuruteraan Pembuatan (Bahan Kejuruteraan), UTeM'08		BEM, Jurulatih berdaftar Persatuan badminton malaysia	Delfi Cocoa Malaysia, Celcom Malaysia Berhad, Kinetic Chemicals Malaysia Sdn Bhd	14 years					

22	SYAHRULAZMIN BIN SARMIN	Lecturer	01.02.2005	Full time	Sarjana Muda Kejuruteraan Mekanika(Bahan), Sarjana Pendidikan Teknik dan Vokasional	AUTODESK CERTIFIED PROFESSIONAL_Inventor 2015	BEM		16 years						
23	NURHIDAYA BT MUSA	Lecturer	01.09.2003	Full time	Diploma Kejuruteraan Mekanikal (CNC), KUiTTHO'2003 Sijil Kejuruteraan Mekanikal, Politeknik PD 1999	Microsoft Office Specialist EXCEL 2019 Associate.	1. (BEM) Board of Engineers Malaysia 2. (PSIMA)Persatuan Psikologi Malaysia 3. (MEPS)Malaysia Educational Psychology Society	NZ WHEELS SDN BHD STMicroelectronics Sdn. Bhd	21 years						
24	NORLIDAWATI BT MOHAMAD	Lecturer	01.04.2002	Full time	Diploma Kejuruteraan Mekanikal Serta Pendidikan, KUiTTHO'2001	SIJIL KEMAHIRAN MALAYSIA - fabrikasi logam Level 3 PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS,	BEM, MBOT,NUTP		22 years						
25	WAN NORHAZLIM	Lecturer	01.04.2008	Full time	Sarjana Pendidikan Teknik dan Vokasional	SKM 3- FABRIKASI LOGAM, MINYAK & GAS (	NUTP, BEM		15 yeras						

	BT WAN MUSTAFA				Sarjana Muda Kejuruteraan Mekanikal , KUiTTHO'2000	2023)PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS									

JABATAN SOKONGAN

1	NOOR HAYATI BINTI MAT TAIB	Senior Lecturer	16.01.2004	Full time	Sarjana Pendidikan Teknik & Vokasional, KUITTHO,2003 Sarjana Muda Kejuruteraan Bahan USM, 2001		BEM, NUTP		21 years					

This report provides a general overview of the academic staff under the Mechanical Engineering Department (DKM) based on the submitted analysis file. The primary focus of this summary is to highlight the distribution of professional qualifications, memberships in professional bodies, and general trends in recorded levels of professional activity.

A total of 26 academic staff members are listed. Upon analysis, it is evident that most of the staff possess commendable professional backgrounds. Specifically, 23 out of the 26 staff members (approximately 88%) hold relevant professional qualifications. These qualifications typically include certifications such as the Sijil Kemahiran Malaysia (SKM), Diploma Kemahiran Malaysia (DKM), and other equivalent technical or vocational certifications that are crucial for enhancing hands-on teaching quality in a TVET environment.

Similarly, 23 staff members are actively registered with professional bodies. Common affiliations include the Board of Engineers Malaysia (BEM), Majlis Rekabentuk Malaysia, and the Malaysian Nature Society (MNS). This strong engagement with professional institutions reflects the department's emphasis on maintaining a high standard of academic and industry relevance among its personnel. As for the level of professional activity, the updated data shows that 3 staff members are classified as having high activity, 3 staff members have medium activity and 20 staff members fall under the low activity category.

This distribution suggests that while a portion of staff is actively involved in professional or scholarly engagements, the majority currently maintain minimal external or research-related activities. Moving forward, targeted initiatives such as professional development programs, research grants, and industry collaboration incentives could help balance this distribution and promote higher engagement.

In addition, **Table C5-1c** shows the summary of highest academic qualifications of the teaching staff of DKM programme. Meanwhile the list of Membership in Professional Bodies of Academic Staff is shown in **Table C5-1d.**

Table C5-1c: Academic Qualification of Teaching Staff

Academic Qualifications	Year		
	2023	2024	2025
PhD	3	3	3
Master's Degree	7	7	6
Bachelor's Degree	15	15	14
Diploma	3	3	2
TOTAL	**28**	**28**	**25**

Table C5-1d: Membership in Professional Bodies of Academic Staff

Type of Qualification/Field	**Number**
Graduate Members of Board of Engineers, Malaysia (BEM)	25/25
Name	**No. Reg**
AHMAD FAKARUDDIN BIN MOHD FAUZI	62426A
ALIAS OTHMAN	G1183952A
ASMIRA BIN ASHARI	G1258708L
ASRI BIN MAT DESA	160861A
ISHAK BIN HASAN	GE65083R
KHAIRULNIZAM BIN KASIM	G1243868A
MAZYAN BINTI YAHAYA	JS138325
MOHAMAD KHIRUDIN AMDAN	G1258725A
MOHD FAUZI B DERANI	G1258583L
MOHD HARIZ BIN SAMIAN	G1160860A
MOHD NASIR BIN KAMARUDDIN	G1196350A
MOHD SHARIZAN BIN MOHD SHARIF	86339A
MUHAMMAD FAIZ B ABDULLAH	160772A
NOOR HAYATI BINTI MAT TAIB	G1256597A
NOORAZLAN BIN MOHD SAMSUDDIN	G1258639L
NORASIAH BT MUHAMMAD	13796R
NORLIDAWATI BT MOHAMAD	W11478n (L)
NURAZLINDA BINTI YAHYA @ MUHAMMED	W11341N(L)
NURHIDAYA BT MUSA	W19716
SHARIZA AZWIN BINTI YAHYA	G1217790A
SYAHRULAZMIN BIN SARMIN	G1185856A
TEOH THEAN HIN	51070A
WAN MAJDAH BINTI TON MAMAT	160862A
WAN NORHAZLIM BT WAN MUSTAFA	G172476A
ZETTY ROHAIZA BINTI MOHD SAHAK@ISHAK	160863A
ZULKHAIRI BIN KHAIRUDIN	T118473L

The academic posts held by the teaching staff are shown in **Table C5-1e**. Meanwhile, the total number of teaching staff certified with the industries is listed in **Appendix C5-1c.**

Table C5-1e: Posts held by Teaching Staff

No	Post		Number	
			Full Time	Part Time
1.	Head of Department	PPPT DH48	1	-
2.	Head of Programme	PPPT DH44	1	-
3.	Senior lecturer	PPPT DH54 PPPT DH52 PPPT DH48	0 8 7	-
4.	Lecturer	PPPT DH44 PPPT DH41/42 PPPT DH40	6 1 1	-
		Total	**25**	

C5-2 Discuss how the overall staff workload enables effective teaching, student-staff interaction, student advising and counselling, IHL service and research activities, professional development and interaction with industry.

C. Teaching load/contact hours

In general, teaching staff of the programme teach courses and practical work. The minimum contact hours for each staff is less than 16 hours per week except for the staff that didn't involve in final exam course. In order to ensure the effectiveness of their teaching and learning process, each staff is responsible to teach not more than three different theory courses in a particular semester. The teaching staff workload of the current semester session I 2025/2026 is shown in **Appendix C5-2a**. Besides teaching, the staff are also obligated to do other responsibilities as instructed by the HOD or HOP. **Table C5-2a** shows the average distribution of the teaching load and other responsibilities of the staff per week.

Table C5-2a: The Distribution of Workload and Other Responsibilities of DKM Teaching Staff Per Week

No	Distribution of Workload	Hours	Percentage (%)
1.	Teaching and learning	18 hrs.	47
2.	Academic advisor and student meeting	1 hr.	3
3.	Preparation of teaching and learning /interaction between industry	6 hrs.	16
	Professionalism Upgrading	3 hrs	7
4.	Student Evaluation	6 hrs.	16
5.	Research and development	2.5 hrs.	6
6.	IHL services	2 hrs.	5
	TOTAL	**38.5 hrs / week**	**100**

D. Teaching Staff: Student ratio

The average ratio of the teaching staff to students for DKM programme is 1:10. It shows that the programme has sufficient teaching staff to conduct the programme effectively. **Table C5-2b** shows the ratio of staff to students for the past four years. **Table C5-2b(i)** shows academic staff from other programmes servicing DKM programme.

Table C5-2b: Staff-Student Ratio

Year		Year					
		2022/2023		2023/2024		2024/2025	
SEMESTER		I	II	I	II	I	II
1st Year	Semester 1	94	17	175	23	153	28
	Semester 2	34	91	15	171	24	150
2nd Year	Semester 3	100	33	92	13	164	26
	Semester 4	33	97	32	89	14	158
3rd Year	Semester 5	78	33	96	32	87	14
	Semester 6	33	78	34	93	32	93
al No. of Students per Session [A]		372	349	444	421	474	469
FTES [B]		37	36	35	36	38	35
ACADEMIC STAFF: STUDENT RATIO [B:A]		**1:10**	**1:10**	**1:13**	**1:12**	**1:12**	**1:13**

Calculation ratio:

Total No. of Students Per Session = **[A]**

Full-time Equivalent Academic Staff (FTES) = **[B]**

Academik Staff: Student Ratio = [B] / [A]

E. Research and publication

The Commercialization, Research & Innovation (CRI) Unit at PSA plays a pivotal role in cultivating a strong culture of research and innovation among teaching staff. It oversees all research, publication, and consultancy initiatives, while actively encouraging staff to share their findings at seminars and colloquiums both locally and internationally. To further strengthen research capacity, the CRI Unit provides vital assistance in securing government-funded grants such as PPRN and Trans-Tech 4TVET,

which are designed to promote innovation in Malaysia. In addition, the unit organizes its own research-focused events, offering wider exposure and motivating staff to engage in scholarly publications and academic activities.

The organization, particularly DKM, strongly supports professional growth and career development among its staff. Active participation in paper presentations, research projects, and community engagement is highly valued, with direct implications for annual performance evaluations and promotion eligibility. This commitment is further reinforced by substantial financial support, as reflected in awarded grants: RM81,000 in 2023 from MOSTI and KPT, and a significant RM185,990 in 2025 secured by JKM staff through the Trans-Tech TVET grant. These achievements highlight the organization's consistent dedication to advancing research, innovation, and academic excellence. The summary of staff involvement in research/ publications/ presentations/ consultancy activities/ innovation can be referred to in **Appendix C5-2b.**

F. Industrial Involvement

The staff are provided with the opportunity to establish active and close rapport with the industry in various disciplines. In addition, external qualified speakers are also invited from industries/ public bodies to deliver lectures on experience/ engineering ethics/ professionalism for the students and academic staff. The information about speakers and their presentation can be refereed to **Appendix C5-2c**. The Diploma in Mechanical Engineering program emphasizes strengthening strategic partnerships with industries and higher education institutions. The initiatives include benchmarking visits, knowledge-sharing seminars, and engagements with industrial leaders through CEO@PolyCC programs. The focus extends internationally with academic visits and mobility programs to Japan, South Korea, and Indonesia, providing students with valuable global exposure. Students are involved in technical training and workshops with established companies, reinforcing their technical competencies in maintenance, industrial operations, and safety practices. Overall, DKM activities are designed to enhance academic quality, broaden industrial linkages, and develop graduates who are globally competitive and industry-ready. The DKM program engaged in 6 collaborative activities with 6 different industries and institutions. The initiatives covered diverse areas such as serving as industry panel members, technical visits, collaborative projects, and technical training.

Key highlights include:

- Industry Engagement – Close partnerships with companies like Panasonic Appliances, HICOM Diecastings, and Ideas Cad Technology enhanced the industry relevance of the program.
- Academic-Industry Collaboration – Students and lecturers participated in projects co-developed with industry, exposing them to real-world applications.
- Professional Involvement – Lecturers contributed as panel assessors (e.g., PITEX), reflecting recognition of PSA expertise at the national level.
- Technical Training & Visits – Activities such as industrial visits and air-conditioning system maintenance training expanded both technical knowledge and practical skills.

Impact: The DKM program successfully aligned academic training with industry needs, strengthened networks with local and international partners, and positioned its students to be industry-ready with global exposure.

G. Staff-Student Interaction, Student Advising and Counselling

The *Sistem Penasihatan Akademik* (SPAk) was introduced in polytechnics in 2004. Its purpose is to serve as a communication channel between students and academic advisors (PA). The scope and responsibility of PA is outlined in the Handbook on Scope of Duties and Responsibilities of Higher Education Officers (2022). Their responsibilities include the academic and personal development of students as it helps to develop goals, academic, career and self- esteem of the students. A one-hour session per week is allocated for each PA to meet their students to discuss their academic problems and other matters related to their studies.

Other than SPAk, students are also provided with advising and counselling career development services conducted by the Psychology Unit. The Psychology Officer and Counsellors are responsible in providing counselling or psychological counselling to the students based on the reference from PAs. Students are encouraged to see the psychological officer or counsellor with or without recommendation from their PAs. The unit also plans and implements psychological and career growth guidance to students.

Meanwhile, the CISEC Unit is responsible in designing and managing the supply of graduates in career direction as well as assisting students in determining employability and career paths after graduation.

C5-3 Discuss the sufficiency and competency of technical and administrative staff in providing adequate support to the educational program.

H. Sufficiency and Competency of Technical and Administrative Staff

DKM programme has sufficient and competent technical and administrative staff to support the implementation of the programme efficiently. Their particulars are shown in **Table C5-3a** and **Table C5-3b.**

Table C5-3a: Analysis of All Support Staff

Name	Post Held	Date of First Appointment at the Fac/Sch/Dept	Academic Qualifications/Field of Specialisation/ Institution and Year of Award	Years of Experience	
				Govt/ Industry Practice	This Fac/Sch/Dept
DEVELOPMENT AND MAINTENANCE UNIT					
NIK AHMAD HUSNI BIN NIK AB RAHMAN	ASSISTANT ENGINEER	15/12/2021	DIPLOMA OF MECHANICAL ENGINEERING	18	3
MUHAMMAD FAIZAL BIN MAT NOOR	ASSISTANT ENGINEER	2/11/2020	DIPLOMA OF MECHANICAL ENGINEERING	20	4
LAB ASSISTANT					
SITI KHADIJAH BINTI MAT TAHIR	PEMBANTU MAKMAL C2 (TBK)	23/4/2004	STPM	21	7 MONTHS
COMPUTER TECHNICIAN					
ILAVARASAN A/L NADARAJAN	ASST COMPUTER ENGINEER	13 AUGUST 2001	DIPLOMA IN ELECTRICAL (ELECTRONIC)	24	10
ADMINISTRATOR					
NURUL AINI BINTI NUFZI	PEMBANTU PEJABAT	27/7/2020	SPM	5	3
ZUERAINI BINTI ZAKARIA	PEMBANTU TADBIR	20/9/2009	SPM	16	1
SPORTS, CO-CURRICULUM AND CULTURE DEPARTMENT					
JAMALIAH BINTI JAAFAR	PENYELARAS	1/8/2002	IJAZAH PERDAGANGAN	22	21
MUHAMAD LUQMAN B. MOHD NAZIR	KETUA KURSUS PAKAIAN BERUNIFORM	3/10/2005	IJAZAH PENGAJIAN ISLAM	19	16
ROKIAH BINTI HASSAN	KETUA KURSUS SUKAN	1/1/2005	DEGREE OF ELECTRICAL ENGINEERING	19	16

Table C5-3b: Posts Held by Support Staff

Post	Number
Assistant Engineer	2
Lab Assistant	1
Computer Technician	1
Administration	3
Sport Technical Support	3
Total	**10**

C5-5 Discuss the implemented professional training scheme and incentives for teaching staff. List down teaching staff who have undergone or still undergoing training. Provided projected professional training programme.

i. Professional training scheme and incentives

The institution has implemented a structured professional training scheme for teaching staff in line with the Ministry of Higher Education and institutional policy. Academic staff are encouraged and supported to attend certified technical, pedagogical, and industry-related training to enhance their teaching and professional competency.

Incentives provided include:

- Financial support such as course fees, travel allowance, and accommodation.
- Priority in promotion and scholarship applications for staff who actively participate in professional development.

Several staff have successfully undergone professional training, including certification courses such as Professional Certification on KNX and Pneumatic from Festo referred to **Appendix C5-5a**. This reflects the institution's strong commitment to professional staff development as part of its strategic plan.

The institution has outlined several projected professional training programmes for the next 2–3 years, focusing on both technical and pedagogical enhancement referred to **Appendix C5-5b**:

- Technical Certification Programmes: CNC Machining, Additive Manufacturing, Smart Factory & IoT Applications.
- Pedagogical Training: Outcome-Based Education (OBE) assessment, e-learning & blended learning strategies, curriculum innovation workshops.
- Industry Attachment: Short-term industrial placement for staff to gain current industry practices.
- Soft Skills Development: Communication, leadership, project management, and supervision skills.

C5-6 Discuss participation of teaching staff in consultancy activities

j. Participation of teaching staff in consultancy activities

Participation of teaching staff in consultancy activities serves as a critical avenue for applying academic expertise to address real-world challenges. Such engagements not only enhance the professional competency of staff but also strengthen the linkage between academic institutions and external stakeholders, including industry, government agencies, and community organizations.

At PSA, consultancy activities take multiple forms, ranging from industry-driven projects to advisory roles and academic juries in competitions such as POLYCCSKILLS and innovation showcases. Staff also contribute as panel members in workshops and have been engaged in institutional initiatives such as the commissioning of ILP Kuala Lumpur (ILP KL). In addition, many staff members are appointed as paper reviewers in academic conferences, reflecting recognition of their expertise within scholarly circles. These opportunities enable staff to demonstrate their knowledge, contribute to the advancement of academic and professional practice, and gain visibility at both national and international levels.

Importantly, consultancy contributes directly to institutional objectives by fostering knowledge transfer, expanding research collaborations, and generating outputs that align with grant-funded initiatives. Staff have successfully secured multiple government-funded grants, including PPRN, Trans-Tech TVET, and the MOSTI MyGRIs grant, all of which provide strong financial and structural support for innovation and research activities. Moreover, participation in consultancy strengthens career development pathways, as outcomes are incorporated into annual performance evaluations and promotion criteria. International collaborations, such as joint research and consultancy projects with Polyteknik Caltex Riau (PCR), Indonesia, further underscore the role of consultancy in extending academic impact beyond national boundaries. Collectively, these activities reinforce the institution's commitment to innovation, academic excellence, and sustainable community engagement.

The summary of staff involvement in research/ collaboration/consultancy activities can be referred to in **Appendix C5-6a.**

C5-7 Discuss participation of teaching staff in development activities

k. Participation of teaching staff in development activities

Teaching staff also actively participate in various development activities that extend beyond certification. These include *Program Peningkatan Kemahiran* (PPK) and Career Path Competency Matrixs (CPCM) in **Appendix C5-7a**, e-learning and blended learning, as well as soft-skill enhancement programmes such as sign language, grooming for civil servants, communication, and leadership training in **Appendix C5-7b.**

In addition, staff members have joined seminars and conferences such as the Seminar on Digital Transformation of Cooperatives and integrity-focused programmes for public service. Participation also covers curriculum review and Continuous Quality Improvement (CQI) workshops, ensuring alignment with accreditation standards and industry relevance.

Overall, staff participation in development activities is encouraging, supported by institutional policies that provide funding and promotion incentives. This continuous involvement ensures that academic staff not only strengthen their individual competencies but also contribute significantly to curriculum improvement, teaching quality, and institutional excellence.

C5-8 Discuss CQI strategies to be implemented in relation to teaching and support staff.

I. CQI strategies to be implemented in relation to teaching and support staff

The institution adopts Continuous Quality Improvement (CQI) strategies to ensure teaching and support staff remain competent, effective, and aligned with institutional goals. CQI is applied through the Plan–Do–Check–Act (PDCA) cycle and emphasizes continuous enhancement of knowledge, skills, and professional practices.

For teaching staff, CQI is implemented through regular pedagogical training such as Outcome-Based Education, student assessment, and blended learning workshops. Lecturers are also encouraged to attend technical upskilling and certification programmes to stay current with industry standards, and their performance is continuously reviewed through peer evaluations and student feedback. Industry attachments and collaborative projects are also promoted to ensure that teaching staff can integrate real industry practices into classroom delivery.

For support staff, CQI strategies focus on skill enhancement in areas such as ICT competency, laboratory and workshop safety, equipment maintenance, and customer service. Administrative efficiency is also strengthened through training on process automation, data management, and quality management systems. Performance of support staff is reviewed regularly using feedback from students and lecturers, and targeted training is provided to address identified gaps.

Overall, CQI strategies for both teaching and support staff are monitored through training needs analysis, annual staff appraisal, and institutional KPI reviews. These initiatives ensure that all staff continuously improve and contribute to academic excellence, operational efficiency, and enhanced student satisfaction.

C6-1 Criterion 6: (i) Discuss the adequacy of teaching and learning facilities such as classrooms, learning-support facilities, study areas, information resources (library), computing and information-technology systems, laboratories and workshops, and associated equipment to cater for multi-delivery modes.

A Introduction

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) provides a strong support in the implementation of Diploma Engineering programme in the Mechanical Engineering Department (MED). MED occupies 9 blocks of building namely KA, KB, KC, KD, KE, KF, KG, KH and KI. The main MED administrative office is located at Level 1 of Building KA block. The offices of the Head of Department and Heads of Programmes are located at KA block building of level 1.

This section discusses the engineering and general facilities provided by the MED, PSA. In general, the facilities consist of Teaching and Learning Facilities and Support Facilities.

B Teaching and Learning Facilities

The teaching and learning facilities comprise of lecture rooms, laboratories, workshops, library, as well as computer and IT facilities.

There are sufficient instructional lecture facilities available to ascertain effective delivery of the programme. More than 30 facilities are available which are categorized into lecture rooms which are able to be used with multimedia facilities and a seminar room. These facilities are located in block KA, KB, KC, KD, KE, KF, KG, KH and KI.

There are 16 lecture rooms located at the block KA building, each with an average capacity of 40 students, 5 lecture rooms located at the block KI building, each with an average capacity of 30 students, including 1 lecture hall with capacity of 80 students.

Drawing rooms are also located at block KA, which is at level 1. All lecture rooms are available to be used with LCD projection systems and desktops/laptops to further enhance teaching and learning. Such facilities are also used for seminar sessions. Most lecture rooms are either furnished with tables and chairs or flip chairs.

A few lecture rooms are also meant for tutorial classes. The tutorial rooms have basic facilities required to conduct optional tutorial sessions. Each room can cater for a maximum of 40 students.

TVET education is now entering a new phase through an innovative initiative that introduces more advanced, immersive, and technology-driven learning. At MED, a smart digital space is currently being developed, known as TeCC 4.0 (Technology-Enabled Creative Classroom).

TeCC 4.0 is a creative learning room focused on the development of teaching and learning (T&L) materials based on Augmented Reality (AR) and Virtual Reality (VR) technologies. This initiative aims to create a new learning environment that:

- Is more interactive and effective
- Aligns with current industry needs and standards
- Enhances the overall student learning experience
- Equips lecturers with high-powered digital teaching tools

With TeCC 4.0, TVET students can now learn in a simulated, realistic, and engaging environment — bridging the gap between the classroom and the real world through immersive AR/VR experiences. (**Appendix C6-3c)**

MED has utilized three lecture halls for teaching and learning purposes. One hall is located at the Department of Mechanical Engineering (known as Mechanical Engineering Lecture Hall), one hall located near the Mathematics and Science Department (known as Auditorium Ibnu Sina) and also the Multi-Purpose Hall (known as Dewan Al-Jazari) which located beside administration block of PSA. The MED Lecture Hall can accommodate up to 150 students per session while the Auditorium Ibnu Sina can occupy a maximum of 300 students and the Multi-purpose Hall is with the capacity of 1500 students per session. These halls are also used for general assembly and briefing for new students.

MED has an independent study area as a self-learning facility for students to support students' achievement on students' learning outcomes. In addition, this place provides a conducive learning environment for students.

MED provides laboratories, computer laboratories and workshop equipment which are optimally used in teaching and learning process. These facilities are not only used for formal learning and teaching processes, but also as informal learning activity center for upgrading the skills of students, staff and industrial community at large. The data **Table C6-1a** indicates that MED are able to provide substantial physical facilities for usage in delivering the curriculum, administration and conducting research.

Table C6-1a: List of Physical Facilities

No	Facilities	Present	
		No	Capacity
1.	**Lecture Hall**		
	Multipurpose Hall (Dewan Al-Jazari)	1	1500
	Main Hall (Auditorium Ibnu Sina)	1	300
	Mechanical Department Hall	1	150
2.	Lecture Room	20	30-40
3.	Technology Enable Collaborative Classroom (TECC)	1	30
4.	Laboratories/Workshops	11	40
5.	Library and Resource Centre	1	900
6.	Student Activity Room	1	40
7.	Student Learning Centre	1	40
8.	Drawing Room	2	40
9.	Interactive Room (KJA)	1	15
10.	Project Gallery	1	15
11.	Surau	1	15
	Others		
12.	Musolla Jumaat Prayer (Islamic Centralic)	1	1500
13.	Sports Complex	1	100
14.	Health Room	1	2

C The adequacy of physical facilities and equipment (such as workshops, studios, laboratories) and human resources (such as laboratory staff, technicians)

Physical facilities available at the polytechnic are sufficient in handling the implementation and development of the programme. Continuous improvement of the facilities is made to improve the quality of the facilities. The number of employees is at the optimum level. However, continuous improvement efforts are made to increase the number of posts at PSA to ensure the operations effectiveness. The maintenance management personnel carry out maintenance work periodically and based on needs by a qualified technician. The list of physical facilities and number of equipment is shown in **Table C6-1b** and the list of technicians and support staff are illustrated in **Table C6-1c**. The details of the physical facilities and equipment/tools can be referred at **Appendix C6-1a** and **C6- 1b** shows List of Course Involving with Practical Work.

Table C6-1b: Physical Facilities and Equipment

No	Laboratory/ Workshop	Number Of Equipments
1	Welding Workshop	60
2	Fitting & Machine Workshop	71
3	Foundry Workshop	15
4	Makmal ADMC	42
5	Strength of Material & Mechanics of Machine Laboratory	22
6	Pneumatic & Hydraulic Lab	9
7	Control Lab	15
8	CADCAM & Manufacturing Lab	19
9	Fluid Mechanics & Thermodynamics Lab	10
10	Metallurgy Lab	36
11	Maintenance Lab	5

Table C6-1c: List of Technicians and Support Staff

No	Name of Technicians
1	Muhammad Faizal Bin Mat Noor
2	Nik Ahmad Husni Bin Nik Ab Rahman
No	**Name of Lab Assistant**
1	Siti Khadijah Binti Mat Tahir
No	**Name of Support Staff**
1	Nurul Aini Binti Nufzi

D Resource Centre (Library)

PSA library consists of a spacious and conducive study environment with capacity for 430 users consisting of 12 carrels, 11 discussion rooms, 1 audio-visual viewing rooms. It has sufficient seating. In addition, the library also provides an Integrated Library Management Utility (ILMU) systems, a computer lab as well as computer facilities for the library users.

Its total collection includes approximately 37,530 volumes of monographs, 30 serial titles on subscription, 1500 volumes of bound serials and 2,661 units of audio-visuals. In addition to providing access to the internet, the library also subscribes to a number of online databases and electronic journals and e-books. The library uses the Library of Congress List of Subject Headings

and the Library of Congress Classification Scheme to organize its collections.

The PSA Library Resource Centre is designed to ensure that the services and facilities provided satisfy the needs and expectations of the customers. The library implements strategies specifically designed to establish and strengthen liaison with customers, particularly the academic staff. The objectives are to market the library services and to solicit more active participation from the faculty members in patronizing the library services and forwarding recommendation of relevant titles to build and enrich the collection and feedback in the form of constructive criticisms and suggestions. The lists of engineering collections available in the library are 15,000 copies of General Collection and 560 copies of Reference Collection.

To complement the information resources available in the collection, the library offers systematically packaged information in its Webpage: https://perpustakaanpsa01.wixsite.com/digitallibrary . The main webpage provides links to selected electronic resources and websites according to subjects. In addition, specially packaged information, based on specific customer needs, is also made available in the webpage.

Facilities available at the library for the use of academic staff and students are able to support the Mechanical Engineering programme. PSA library provides the information about the library facilities and services through:

a. Orientation Week
b. PSA Portal
c. Library Bulletin
d. Email (lib.psa@gmail.com)
e. Manual Book
f. Counter Service
g. Library open day
h. Let's Read Programme
i. Benchmark Visit
j. Questionnaire
k. Bulletin infolib

To support the Mechanical Engineering programme, the library has provided facilities as listed in **Table C6-1d** with operation time as shown in **Appendix C6-1c.**

Table C6-1d: Facilities at the Library

No	Services	Equipments
1	Counter Circulation	a) Book Check and Computer b) Security Door c) Barcode Reader *d)* PA System
2	Discussion Room	Discussion Room 1 to Discussion Room 10 * Min use for 5 people * Maximum use for 12 people
3	Photostat Machine	* 1 Units * Self Service for staff
4	Newspaper Corner	a) Berita Harian b) Utusan Malaysia c) The Star d) News Straits Times e) Tamil Nesan f) Sin Chew
5	Magazine Corner	* 12 title (local & overseas)
6	Information Corner	* Current Information
7	Open Reading Space	Collection of subjects *Material classification used Library Congress of Classification System (LCC) and Library Classification of Subject Heading (LCSH) *Capasity of 1000 people/session
8	Red Spot Corner	a) Student's Industrial Report b) Newspaper cutting
9	Exhibition Corner	Displaying information related to the history and current issues.
10	Childrens Corner	a) Children's Literature
11	Computer Room	a) 25 units of computers b) Printer c) Equipped with PMIS+LIS system d) Collection of Examination Question
12	Depository	a) 100 pigeon holes
13	OPAC Corner	a) 3 computers equipped with PMIS+LIS system
14	Indoor Games	a) Ludo Game b) Chess c) Cross word game d) Snake & ladder game e) Checkers game
15	CCTV	3

iList of reference books relates to programme.

To support this programme, the library provides reference materials related to this programme as shown in **Appendix C6-1d**.

E Information and Communication Technology (ICT)

The implementation of ICT in PSA is based on current policies issued by the Ministry of Higher Education (MOHE) and the Malaysian Administrative Modernization and Management Planning Unit (MAMPU).

PSA is equipped with a campus network system where all the academic and academic support ICT equipment is provided at PSA. Overall, ICT infrastructure consists of:

a. Intranet

b. Internet

c. Computer laboratories

d. WiFi Hotspot

e. CIDOS

- *(Curriculum Information Document Online System)* is a platform that is implemented in Malaysian polytechnics in order to implement the teaching and learning process. This system allows students and lecturers to interact online no matter where the users are. Students can get the notes, training and academic resources that are shared online by the lecturer. Assessments for students such as assignments and quizzes can also be made online through CIDOS. CIDOS statistic usages are reported by ICT Unit to all CIDOS committee members at academic departments to observe e-learning implementation under CeLT unit. CeLT (Centre for e–Learning & Teaching) is a special name for the digital learning unit under the purview of The Instructional and Digital Learning Division, Department of Polytechnic Education. Ministry of Higher Education. CeLT is created to engage and assist the deployment of the e-Learning / Blended learning agenda in Malaysian polytechnics.

f. Staff Email Account
   - PSA email has been centralised under 1GOVUC Web which is implemented as cost-saving measures through an integrated collaborative communication where all the public sectors in Malaysia can communicate and ensure the success of the project through communication systems offered by 1GovUC.

g. Campus Network System

h. Students Data Storage

i. Online Application:
   - PSA Applications
     - PSA email
     - e-Dokumen
     - e-Fasiliti
     - e-Kenderaan
     - SPMP
     - e-HelpDesk
     - e-Senggaraan
     - Sistem Penilaian Prestasi Pembekal

- Sistem ELMU

- e-Government Applications
  - HRMIS
  - e-Perolehan
  - EPSA
  - SPA

- MOHE Applications
  - e-SIS

  The description of each application can be referred in **Appendix C6-1e**

List of ICT PSA staff responsible for implementing ICT policies at PSA is given in **Appendix C6-1f**.

PSA ICT Unit is responsible to provide equipment, software and services related to the civil engineering programme such as computer supplies, accessories, new software installation, periodical maintenance, repairing works, webmail services and internet access to the CED communities. Other examples of PSA ICT Unit scope of work are as below:

a. Replacement and addition of computers in library, offices, laboratories and other units / departments.
b. Improve broadband network to a higher capacity.
c. Increase fiber network to a higher capacity for expansion of 'ports' network facilities.
d. Provide e-mails to all students by expanding coverage for WiFi hotspot in all offices, classrooms, and student residence.
e. To maintain and upgrade computers in computer labs according to the latest requirements.

Development of ICT services is implemented continuously through budget allocated under the Malaysian Plan. The list of licensed software provided in MED is given in **Appendix C6-1g**.

C6-2 Criterion 6: (ii) For programmes offered wholly or partly in distance mode, or at multiple or remote locations, describe how the facilities provided are equivalent to those provided for on-campus students.

Not applicable.

C6-3 Criterion 6: (iii) Describe the adequacy of support facilities such as hostels, sport and recreational centres, health centres, student centres, and transport in facilitating students' life on campus and enhancing character building.

F PSA Student Residence

Student Residence of PSA can accommodate a capacity of 1,272 students for every semester. It can reside as many as 636 male students in 1 and half blocks and a total of 636 female students in 1 and half blocks of the hostel. The capacity of PSA residence for student is given in **Table C6- 3a**. Students' residential hostels excel in providing students' accommodation which is comfortable and environmentally safe to support students' development and learning while producing educated and holistic semi-professionals.

The selections for placement in the student residence are stated as following:

a. New students – Residential hostels are offered to all new students of the first semester.
b. Senior Students – Interested senior students are required to apply accommodations in the residential hostels. The selection process is carried out by the management of the residential hostels based on certain selection criteria such as socio-economic background, special needs and students with disabilities. Students who are active in sports and extra-curricular activities are considered for residence too.

Table C6-3a: Capacity of PSA Residence for Students

	Male	Female
Total Block	1	2
Total Room	212	424
Total Bed	424	848

i) Student Residence Support Facilities:

Table C6-3b: List of Support Facilities provided at PSA Student Residence

Facilities	Capacity
Student Residence Office	1 Supervisor Office and 1 Warden Office
Cafeteria	3 booths at the main campus 1 booth at Student Residence
Washing Room	1 in every floor of student residence
Recreational Room	1 in every block of student residence
Musolla Jumaat Prayer (Islamic Centre)	A building for 1500 people
Wifi	The entire area of the student residence, around the Multipurpose Hall of PSA, ULPL area, cafeteria and academic departments

G Sport and Recreational Centre

PSA, through the Department of Sports, Co-Curricular and Culture (JSKK), provides facilities and infrastructure for sports and recreational activities. The list of sports and recreational facility and infrastructure is given in **Appendix C6-3a**.

H PSA Health Care Centre

For urgent medical attention, students are advised to go to the Health Care Centre for immediate medical attention.

a. A Medical Assistant Grade (U29) is placed at the PSA Health Care Centre by the Ministry of Health Malaysia.
b. First aid facilities are provided in the Supervisor's Office and Warden's Office.
c. Supervisor works during office hours while wardens will be on call after working hours.
d. The Medical Assistant will also monitor the cleanliness of the cafeteria and canteen.

In the event of emergency, students will be referred to Hospital Shah Alam or Hospital Klang by the academic lecturer or warden.

I Insurance/ Takaful (PSA Student Accident Group Insurance)

Each student will be covered under the insurance scheme known as 'Accident Takaful' and 'Family Group Takaful'.

Insurance Policy from Takaful Company has been selected to cover the scope and amount of coverage as follows:

Table C6-3c: Takaful Malaysia Scope and Coverage

Company	Scope	Sum Assured
Takaful Malaysia **Premium:** RM36.70 yearly Students are insured 24 hours during their studies in PSA	Death Total Permanent Disablement Burial expenses Death caused by accident Total Permanent Disablement by accident	RM5,000.00 RM5,000.00 RM 750.00 RM40,000.00 RM40,000.00

	Half Permanent Disablement by accident Expenses caused by accident Medical Expenses Burial expenses by accident	RM40,000.00 RM3,000.00 RM50.00 per day RM1,500.00

Actions to be taken during the occurrence of accidents are as follows: -

a. Students can get treatment from government or private hospitals in case of accidents.
b. Academic Advisors / Coordinators of Welfare / Students / Students Next Kin of Guardians / Guardians must report the accident to the Student Affairs Department (HEP), PSA within 14 days from the date of accident. HEP will notify Takaful within 30 days after the report is made for further actions to be taken.
c. In the case of the student's location is far from PSA and he or she may want to apply for claims from insurance companies, PSA will hand the "Insurance Claim Form" to the student / family / guardian for follow-up actions. The completed claim form and supporting documents can be delivered or mailed to HEP PSA.

Documents that need to be attached with the claim form are :-

a. A copy of the identity card and student card
b. A copy of the police report / industry
c. A copy of driver's license
d. Doctor report / Original medical bills
e. A copy of discharge letter
f. A copy of the death certificate / post mortem
g. Pictures (scene location / physical)

Police report as a supporting document is required in the case of road accidents and drowning. While the medical certificate is required for the case of death / paralysis. For industrial accident while training the industry, additional reports are required from the management of the industry.

J Cafeteria

Cafeteria serve foods and beverages to students and staff at the PSA, including those living in PSA Student Residence (Dormitory) PSA.

a. Capacity: 300 peoples
b. Hours of operation: Monday - Friday (6.30am - 5.30pm)
c. Operators: 3 operators for selling food and drink
d. Features:

- Air-conditioned room for lecturers and staff with a capacity of 30 people.
- Students Dining Area - Capacity of 300 peoples.

K Transportation

Transportation is provided for PSA students to ensure the involvement of students in formal and informal academic programmes. Vehicles such as buses, cars and vans are available to support the implementation of student activities that lead to increased student achievement including affective, cognitive and psychomotor domains. Details of the vehicles at PSA and list of Drivers' Name is given in **Appendix C6-3b**.

C6-6 Criterion 6: (vi) Discuss the procedure, monitoring process and management of safety, health and environmental aspects of facilities, including lecture halls, laboratories, teaching and safety equipment, etc.

L Procedure

Procedures ensure that facilities are used safely, maintained properly, and comply with legal/organizational requirements.

a. Lecture Halls

- Emergency Preparedness**:** Clear evacuation routes (emergency exit plan), fire extinguishers, alarm systems, fire drills and clear display of emergency exits.
- Occupational Safety**:** Proper seating arrangements, ergonomic considerations, adequate lighting and ventilation.
- Electrical Safety**:** Regular inspection of audio-visual systems, projectors, and wiring to avoid hazards.

b. Workshop and Laboratories

- Equipment Use**:** Standard Operating Procedures (SOPs) for each machine and equipment and training on handling laboratory instruments.
- Chemical Handling**:** Standard Operating Procedures (SOPs) for storage, labelling, and disposal of chemicals.
- Safety Noticeboard**:** Display all required information including Occupational Safety & Health Policy, Smoking, Alcohol and Drug Policy, workshop and laboratory rules, emergency contact number, emergency exit plan, safety notification and safety awareness signage.

c. Teaching & Safety Equipment

- Personal Protective Equipment (PPE)**:** Availability and proper use of safety shoe, goggle, welding shield, face shield, glove, ear muff, apron and face mask.
- Inspection & Calibration**:** Routine checks, maintenance and calibration of teaching tools and safety devices.
- First Aid & Fire Safety**:** First aid kits, wash stations, fire blankets, and extinguishers readily accessible.

M Monitoring Process

Monitoring ensures compliance with OSH standards and identifies risks early.

- Regular Inspections
  - Daily checks by staff for cleanliness, hazards, and functionality of equipment.
  - Scheduled audits by Safety and Health Committees.
- Incident Reporting
  - Systematic recording and investigation of accidents or unsafe conditions.
  - Corrective and preventive action follow-ups.
- Environmental Monitoring
  - Monitor air quality, noise levels, and waste management practices.
  - Compliance with environmental regulations of hazardous waste disposal.
- Audit and Compliance Review
  - Internal compliance with ISO standards, followed by corrective action.
  - Adherence to local occupational safety regulations (DOSH).

N Management

Effective management integrates OSH practices into daily operations.

- Safety & Health Committees
  - Formed as per legal requirement to oversee OSH implementation.
  - Emergency Response Team for JKM is formed as preparation to handle emergencies such as fire and critical incidents in facilities.
  - Regular meetings to review risk assessments and incident trends.
- Training & Awareness
  - Induction training for students and staff.
  - Regular workshops on lab safety, fire drills, chemical handling, and emergency response.
- Emergency Preparedness
  - Fire drills, evacuation simulations and first aid training.
  - Communication plans for emergencies (alarm systems, public address systems).
- Documentation & Record-Keeping
  - Maintaining risk assessments (HIRARC), chemical inventories, waste disposal logs, and training records.
  - Continuous improvement through feedback and audits.
- Resource Allocation

- Budget for safety equipment such as PPE, fire systems and first aid.

C6-7 Criterion 6: (vii) Discuss maintenance and calibration of teaching equipment/apparatus.

O Maintenance and Calibration

The department performs preventive maintenance of the equipment used in the workshops and laboratories by the students twice a year prior to the beginning of a new semester. The equipment's are routinely inspected and maintained to assure the proper performance so that the ratio of equipment and students can be maintained as targeted. The Lab Supervisors have the responsibility to ensure all equipment are checked and calibrated (if any), their usage is controlled and properly maintained. In case of defective equipment resulting in unsatisfactory performance during use, the following actions are taken: -

a. Maintain/recalibrate the equipment immediately, or

b. Consult equipment supplier immediately to check and rectify the error and report the defective equipment in an online system.

C6-8 Criterion 6: (viii) Discuss CQI activities implemented in relation to facilities.

P CQI Activities

CQI activities for facilities focus on preventive maintenance, safety compliance, feedback and benchmarking to ensure that lecture halls, workshops, laboratories, and equipment continuously improve to meet the standards.

1. Facilities Maintenance and Upgrading

- Preventive Maintenance:
  Scheduled servicing of workshops and laboratories equipment, electrical wiring and safety systems to prevent breakdowns.
- Facility Upgrade:
  Introducing smart classrooms, Technology Enable Collaborative Classroom (TECC), energy-efficient lighting, and upgraded lab technology to enhance teaching and research. Details of TECC is given in **Appendix C6-3c**.
- User Feedback Loop:
  Gathering input from students, lecturers, and lab staff to identify facility shortcomings and implement corrective actions.
- Accessibility Enhancements:
  Continuous improvements for differently-abled users, such as ramps, ergonomic seating, and assistive technology.

- Benchmarking:
  Comparing facilities against other institutions to identify gaps and implement best practices.

2. Safety, Health & Environmental Improvements

- Regular Safety Audits:
  Conducted by Safety & Health Committees to ensure compliance with occupational safety standards.
- Emergency Drills & Training:
  Continuous refinement of evacuation procedures and fire safety practices.
- Sustainability Practices:
  Implementing green initiatives such as rainwater harvesting, and energy-saving campaigns.

C7-1 Outline the organizational structure of the IHL including the structure within the faculty/department/programme.

A. Organizational

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) operates under the Department of Polytechnic and Community College Education (JPPKK), which manages the administration and governance of polytechnics and community colleges across Malaysia. To strengthen the role of polytechnics and community colleges in education and training, the Cabinet approved the merger of polytechnics and community colleges into a single department on 24 March 2017. The new organisational structure of JPPKK was subsequently endorsed by the Public Service Department (PSD) on 23 February 2018 and came into effect on 31 May 2019, as illustrated in **Figure 7-1a**. This structural consolidation aimed to enhance coordination, governance, and strategic development of technical and vocational education at the national level.

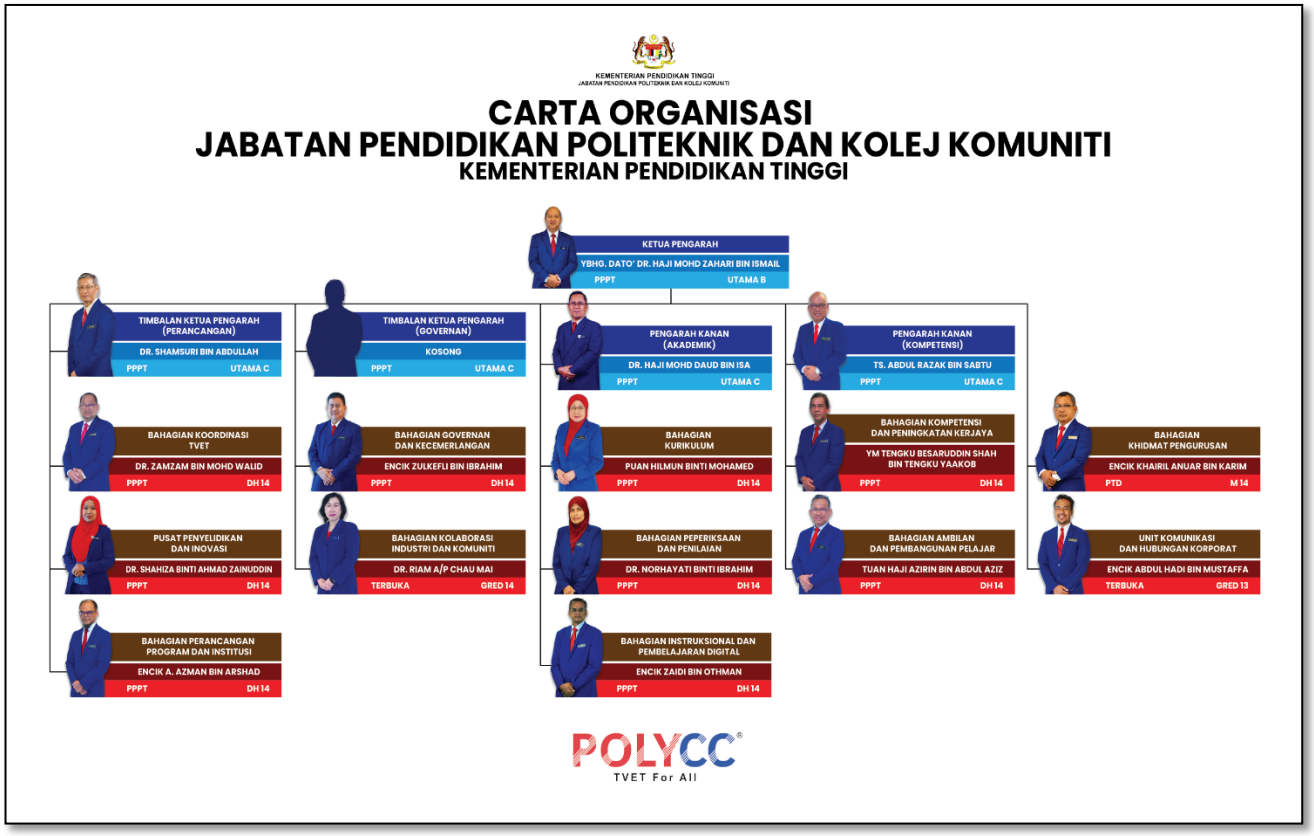


Figure 7-1a: The Organizational Chart of the Department of Polytechnic and Community College Education (JPPKK)

PSA is committed to the highest standards of quality in delivering its academic programmes. Its management committee ensures that the management system is implemented in accordance with programme accreditation requirements and the institution's ISO 21001:2018 Educational Organization Management System certification. Continuous monitoring and evaluation mechanisms are in place to ensure the effectiveness of these systems and to support continuous improvement. The organisational structure of PSA is presented in **Figure C7-1b**, illustrating governance from institutional leadership down to departmental and programme levels.

PSA Management and Leadership PSA promotes constructive leadership to drive the development and continual improvement of the institution through:

- Developing, implementing, and evaluating PSA's strategic direction.
- Establishing a system for top-down and bottom-up communication across all levels.
- Promoting shared values that unite the PSA community
- Reviewing the suitability, adequacy, and effectiveness of the Quality Management System (QMS) through management meetings and review sessions.
- Ensuring the availability of resources required for implementing, maintaining, and improving all main processes as outlined in the QMS.

Figure C7-1b: Organizational Chart of PSA Management

To support sustainable management, in 2020, PSA established two main categories of committees:

1. High-level Management Meeting (AMT) – serving as the strategic group, comprising the Director, Deputy Director (Academic), and Deputy Director (Academic Support).
2. Management Meeting Committee (AMP) – serving as the tactical group, comprising heads of centres and units within PSA.

Regular meetings are conducted at different levels to ensure the implementation of all processes is aligned with the institutional action plan. The hierarchy of meetings includes:

- PSA Management Meeting – focusing on operational matters.
- Academic Management Meeting – discussing academic-related issues.
- Department Meeting – reviewing departmental operations and initiatives.
- Management Review Meeting (MRM) – conducted at least once per year to ensure continuous quality improvement.

B. Role of AMT and AMP

High-level Management Meeting (AMT):

- Strategic Oversight: Focuses on high-level decision-making and sets long-term goals for PSA.
- Policy Formulation: Develops policies aligned with PSA's mission and vision.
- Resource Allocation: Prioritizes initiatives and allocates significant human and financial resources.
- Risk Management: Assesses and manages risks impacting strategic objectives.

Management Meeting Committee (AMP):

- Tactical Decision-Making: Translates AMT's high-level strategies into actionable plans.
- Implementation Planning: Plans programmes and projects, defining timelines and allocating resources at a detailed level.
- Operational Coordination: Oversees daily operations of centres and units.
- Performance Monitoring: Evaluates departmental and unit performance to ensure alignment with strategic goals.

Within PSA, the institution is structured into four core academic departments and two academic support departments, all working together to ensure the effective delivery of its programmes. The Department of Mechanical Engineering (JKM) is one of these core academic departments, playing a central role in providing high-quality technical education in the field of mechanical engineering. JKM is led by a Head of Department (HOD), supported by three Heads of Programmes (HOPs), 39 academic staff, and four support staff.

The department currently offers three academic programmes: Diploma in Mechanical Engineering (DKM), Diploma in Mechanical Engineering (Industrial Packaging) (DMP), and the Exclusive Certificate in Mechanical Maintenance (KMK). The KMK programme is specifically designed for deaf students (*OKU Pendengaran*), reflecting JKM's commitment to accessibility and inclusivity in technical education. Through a combination of structured curriculum, practical training, and professional development opportunities, JKM ensures that its graduates are equipped with both technical competence and professional skills to meet industry standards.

Table G7-1a and **Figure G7-1c** provide the general information and organisational chart of JKM, illustrating the department's internal governance and operational framework that support its academic and administrative functions.

Name of Head of Department	Muhammad Faiz Bin Abdullah
Phone Number to be Contacted	03-51634000 ext: 1235
No. of Programmes Offered at the Department	3
Name of Programmes	Diploma in Mechanical Engineering
	Diploma in Mechanical Engineering (Industrial Packaging)
	Exclusive Certificate in Mechanical Maintenance
Number of MED Staff	47

Table C7-1a: General Information of JKM

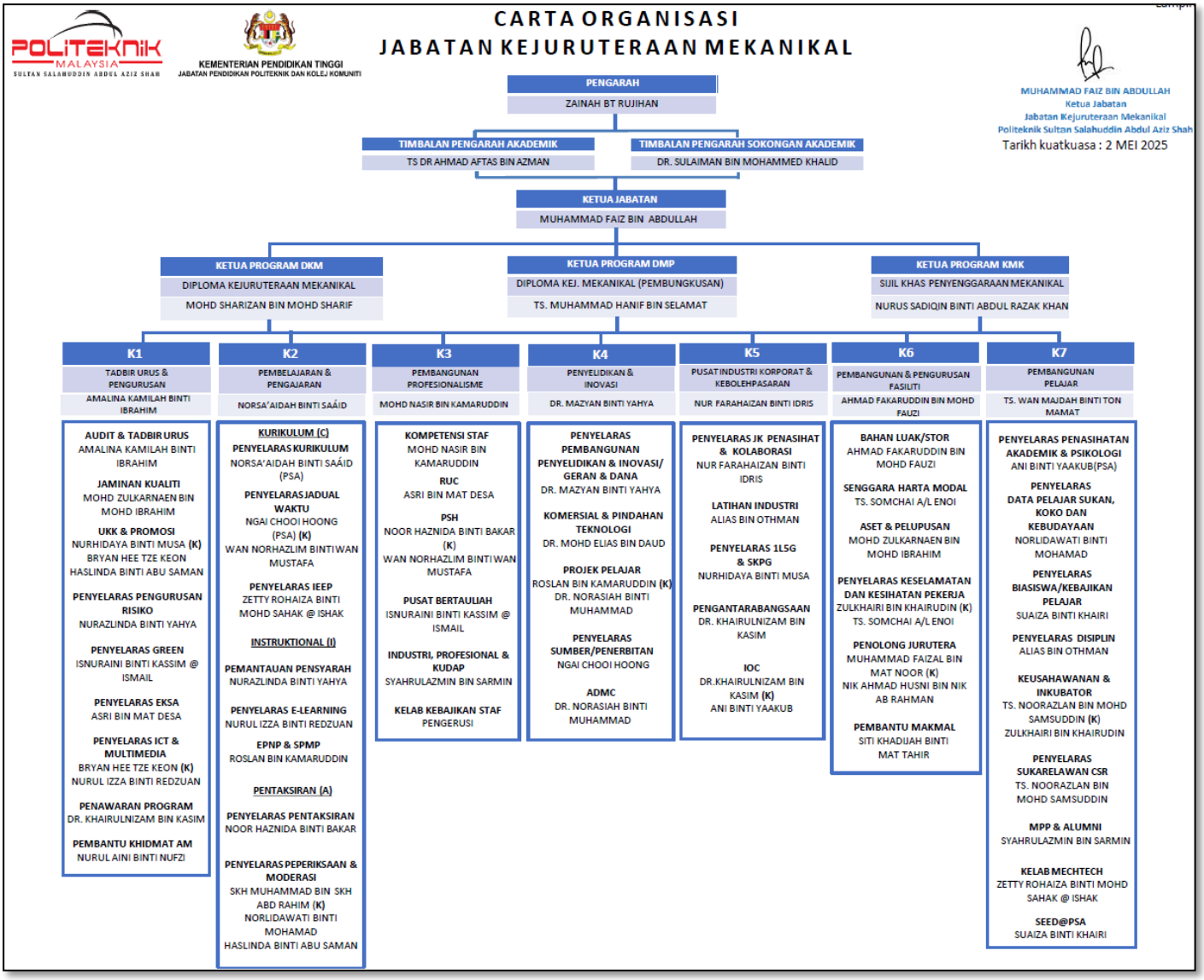


Figure C7-1c: The Organizational Chart of JKM

C7-2 Discuss the level and adequacy of institutional support, operating environment, financial resources, constructive leadership, policies and mechanism for attracting, appointing, retaining and rewarding well qualified staff and provision of professional development, and provision of infrastructure and support services to achieve PEO and PO and assure continuity of the programme.

C. Quality Management System (QMS)

The Quality Management System (QMS) provides a framework to manage all related processes, ensuring high-quality services to stakeholders and implementing continuous quality improvement. A structured mechanism for disseminating and receiving information is critical. **Figure C7-2a** illustrates the general process of assuring process quality. The Department of Polytechnic and Community College Education (JPPKK) develops curricula based on input from content experts with active stakeholder involvement. Recruitment of academic staff and student intake are also key responsibilities. JPPKK has partial autonomy regarding allocated posts and staff appointments, subject to approval by the Public Service Department (PSD) and the Education Service Commission Malaysia. JPPKK also plans and submits financial proposals based on financial review meetings. The main task of all polytechnics is to deliver programmes according to designed outcomes, supported by available resources. To ensure continuous quality improvement, feedback from employers and alumni is systematically collected, analysed, and used to review and enhance all educational programmes.

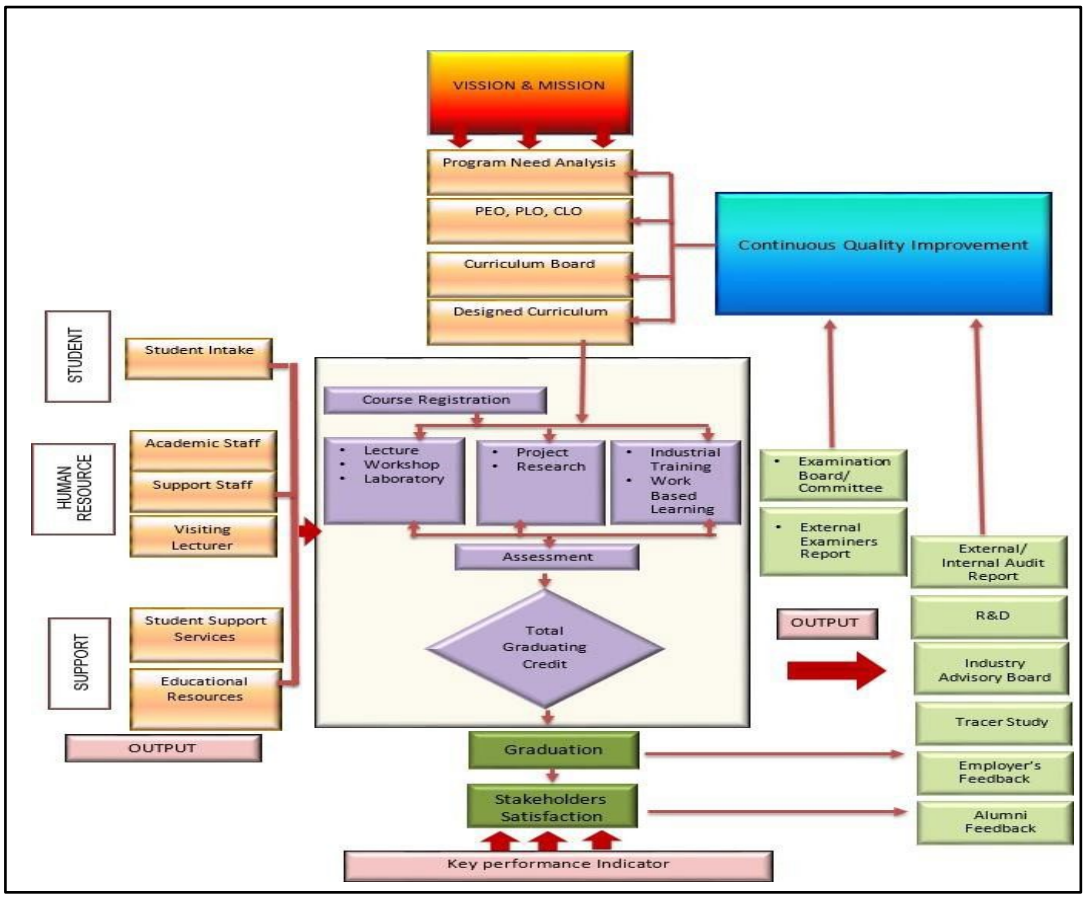


Figure C7-2a: Quality Assurance Process of Polytechnic Education System

D. Financial Resources

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) is a public higher education institution under the Ministry of Higher Education (MOHE) and is fully funded by the Government of Malaysia. Each polytechnic, including PSA, is required to identify its operational and developmental financial requirements for the forthcoming fiscal year based on planned programmes and activities. At the departmental level, budget allocations cover programme management, teaching and learning activities (PdP), and student-related programmes and activities. All budgetary requests are submitted through formal proposals to PSA management for review and prioritization. The PSA management consolidates these departmental requests and submits the overall financial proposal to MOHE for approval. As is standard practice, the approved allocation may not fully match the requested bid. Consequently, PSA internally prioritizes and allocates resources across its departments and units, ensuring that critical and high-priority programmes and activities receive adequate funding. To ensure effective financial management, the Finance Unit regularly monitors and reports on the institution's financial status through periodic meetings. In addition, the unit undergoes external audits by relevant authorities to ensure compliance with the financial regulations and guidelines set by the Ministry of Finance, Malaysia.

E. Adequacy of Constructive Leadership

PSA management promotes constructive leadership for the development and improvement of PSA by:

a. Developing, implementing and evaluating of PSA's strategic direction.
b. Establishing a system for top-down and bottom-up communication across all levels.
c. Establishing and embracing shared values that unite citizens of PSA.
d. Reviewing the suitability, adequacy and effectiveness of Quality Management System
e. (QMS) through management meetings and management review meetings.
f. Ensuring the availability of resources required for implementing, maintaining and improving all main processes as outlined in the QMS procedure.

i. Academic Committee

The Academic Committee (**Figure C7-2b**) oversees all matters related to teaching and learning, including syllabus interpretation, curriculum review, and assessment of students' coursework and final examinations. Industrial training, a critical component of polytechnic education, is closely monitored to ensure the attainment of its outcomes. The committee is led by the Deputy Director of Academic and includes the Heads of Academic Departments, Head of Examination Unit, Head of Industrial Training Unit, and representatives from the Centres of Research and Innovation, Technology (CMET), Multimedia Technology, Corporate, Industrial Services and Employment (CISEC), and Work-Based Learning (WBL). Teaching and learning issues are discussed and decided during committee meetings, with the Quality Assurance Unit involved when matters pertain to quality documents and procedures.

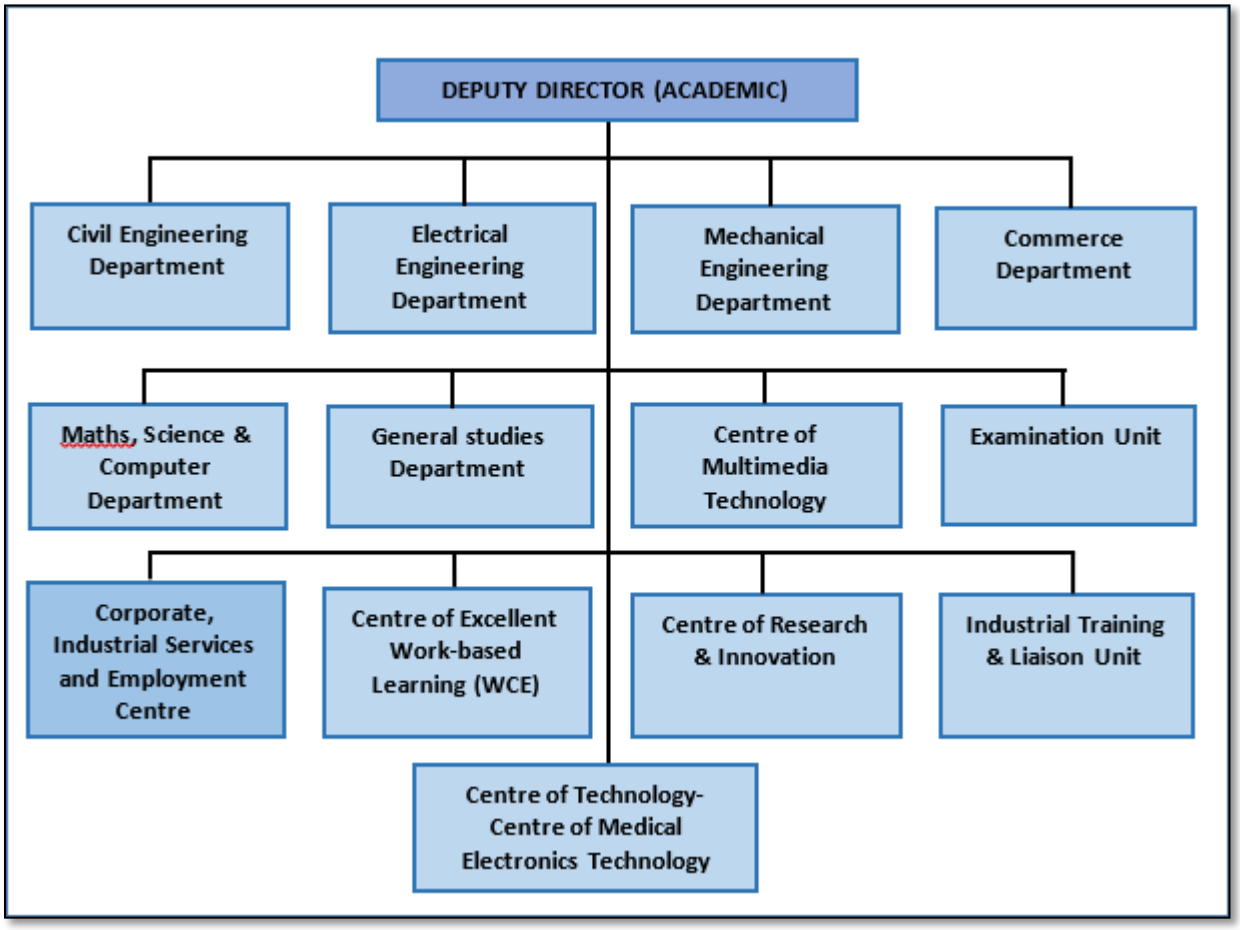


Figure C7-2b: Academic Committee

ii. Academic Support Committee

The Academic Support Committee as in **Figure C7-2c** is led by Deputy Director (Academic Support) and investigates the facilities, training of the staff and all supporting matters in relation to the teaching and learning activities as well as the management of the IHL. The team members of academic support are Students' Affair Department, Sports, Co-Curriculum, and Cultural Department and all the heads of units consisting of Administration, Communications Corporate, Instructional Development and Multimedia, Facilities, Development and Management, Information Technology, Research and Innovation, Training and Professional Development, Library, Psychology and Entrepreneurship.

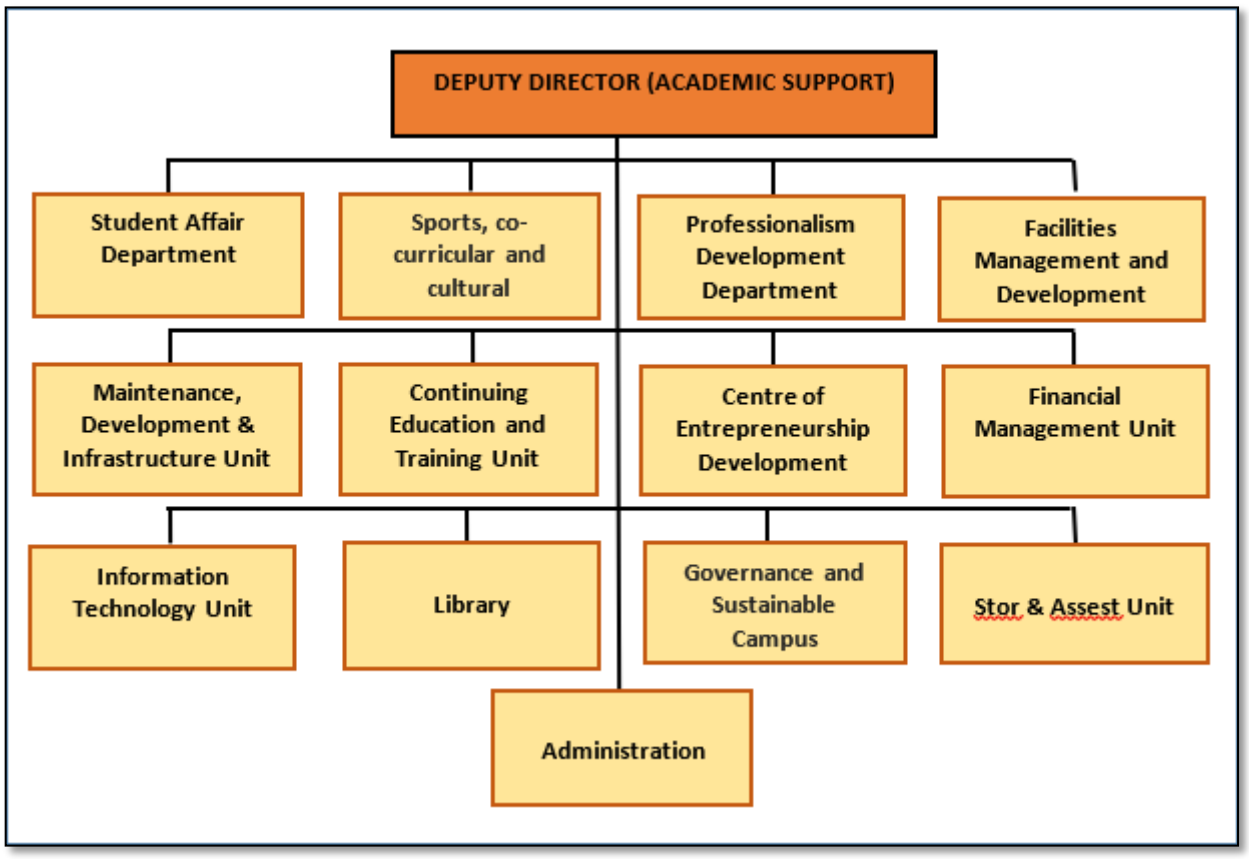


Figure C7-2c: Academic Support Committee

iii. PSA Quality Management System Overview

Quality Management System (QMS) provides a framework for managing all related processes to provide quality services to customers and to satisfy the stakeholders' requirements by implementing continuous quality improvement (CQI). Being a centralized system, a structured mechanism in the disseminating and receiving of information to and from the institutions is indeed critical.

The initial journey of ISO certification at the Polytechnic Sultan Salahuddin Abdul Aziz Shah (PSA) began in 1999. At that moment, PSA took a major initiative by becoming the first polytechnic institution to successfully obtain the MS ISO 9002:1994 certification from SIRIM. In 2002, PSA recorded significant achievements and successfully implemented the transition of the quality system from the MS version ISO 9002: 1994 to the version MS ISO9001:2000. As an educational entity committed to improving quality and management, PSA continues to step forward in improving the compatibility of quality management systems with current standard requirements. Through continuous efforts in line with evolution, PSA has achieved MS ISO 9001:2008 certification and beyond, MS ISO9001:2015 certification. This recognition demonstrates PSA's excellence in applying best practice in quality management and strengthening their involvement in the ISO certification process.

iv. ISO 21001:2018 - Educational Organization Management System

As a premier educational institution, PSA is determined to provide a more stable and relevant learning experience. Aware of the current changing educational landscape, PSA has made a strategic shift by introducing Educational Organization Management Systems (EOMS) based on the ISO 21001:2018 standard. The move began in 2021 and continues to this day. PSA is committed to ISO 21001:2018 as the institution framework and approach used to ensure that quality in all aspects of operations and services within PSA is implemented and supervised. It combines processes, procedures, and practices designed to meet established quality standards.

The implementation of EOMS at PSA focuses on 7 Excellence Criteria which have been simplified based on the following model shown in **Figure C7-2d**. The PSA 7 Excellence Criteria in PSA are as follows:

K1 - Governance and Administration
K2 -Teaching and Learning
K3 - Staff Development
K4 - Research, Innovation, and Commercialization
K5 - Corporate, Industrial Relations, and Employability
K6 - Other Resources
K7 - Student Affairs

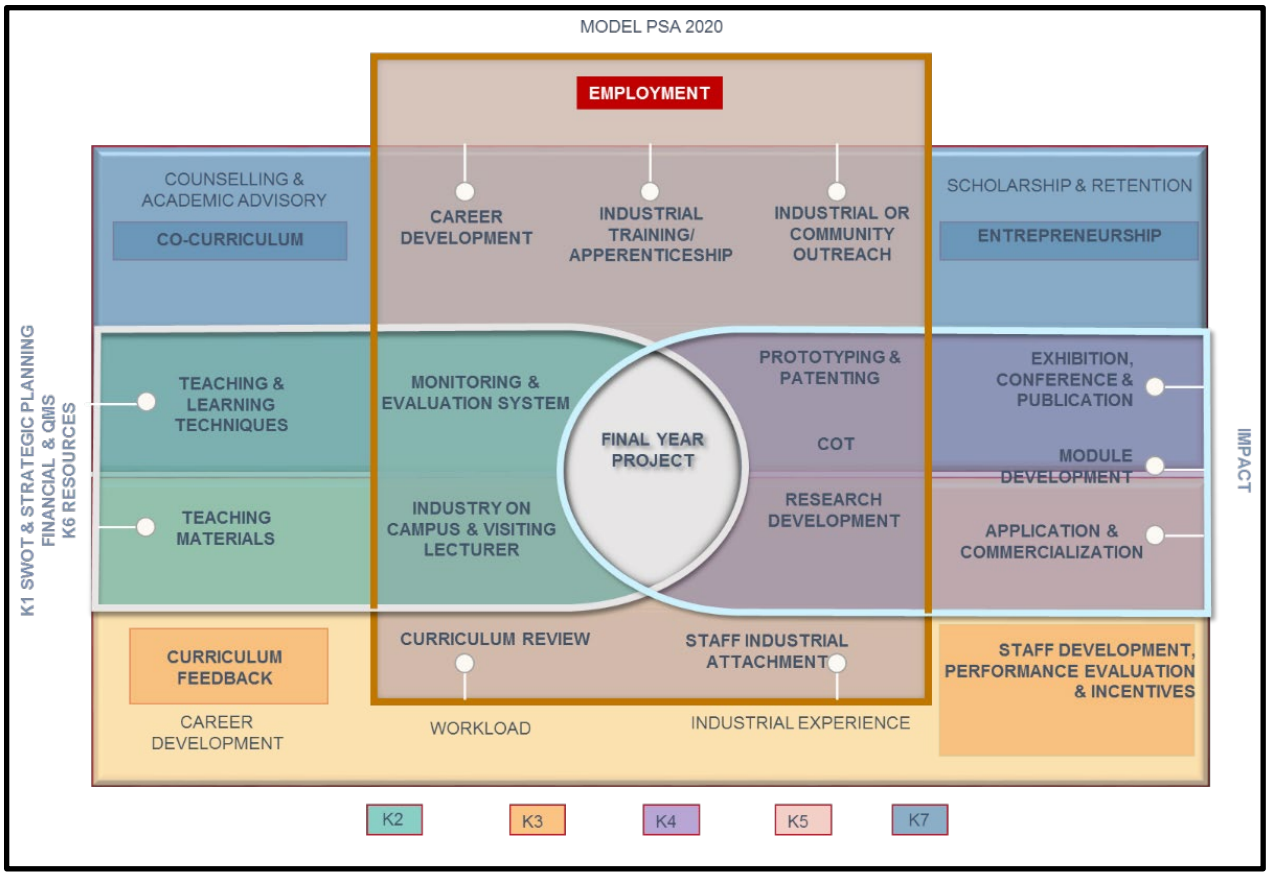


Figure C7-2d PSA Management Model

To ascertain the implementation of all processes is in line with the action plan developed, regular meetings are carried out at different levels. The highest order in terms of hierarchy is the PSA Management Meeting where the main content of the meetings is on operational matters. Academic

matters will be discussed at the Academic Management Meeting and at the Department Meeting. To ensure that continuous quality improvements are carried out accordingly, Management Review Meetings are carried out twice in each calendar year.

The implementation of the EOMS in PSA is aligned with the development of an integrated excellence management system based on the **Plan-Do-Check-Action (PDCA)** concept, which encompasses 7 PSA excellence criteria. The PDCA concept, which encompasses 7 excellence criteria and is depicted through the PSA PDCA - Management Model as shown in **Figure C7-2e.**

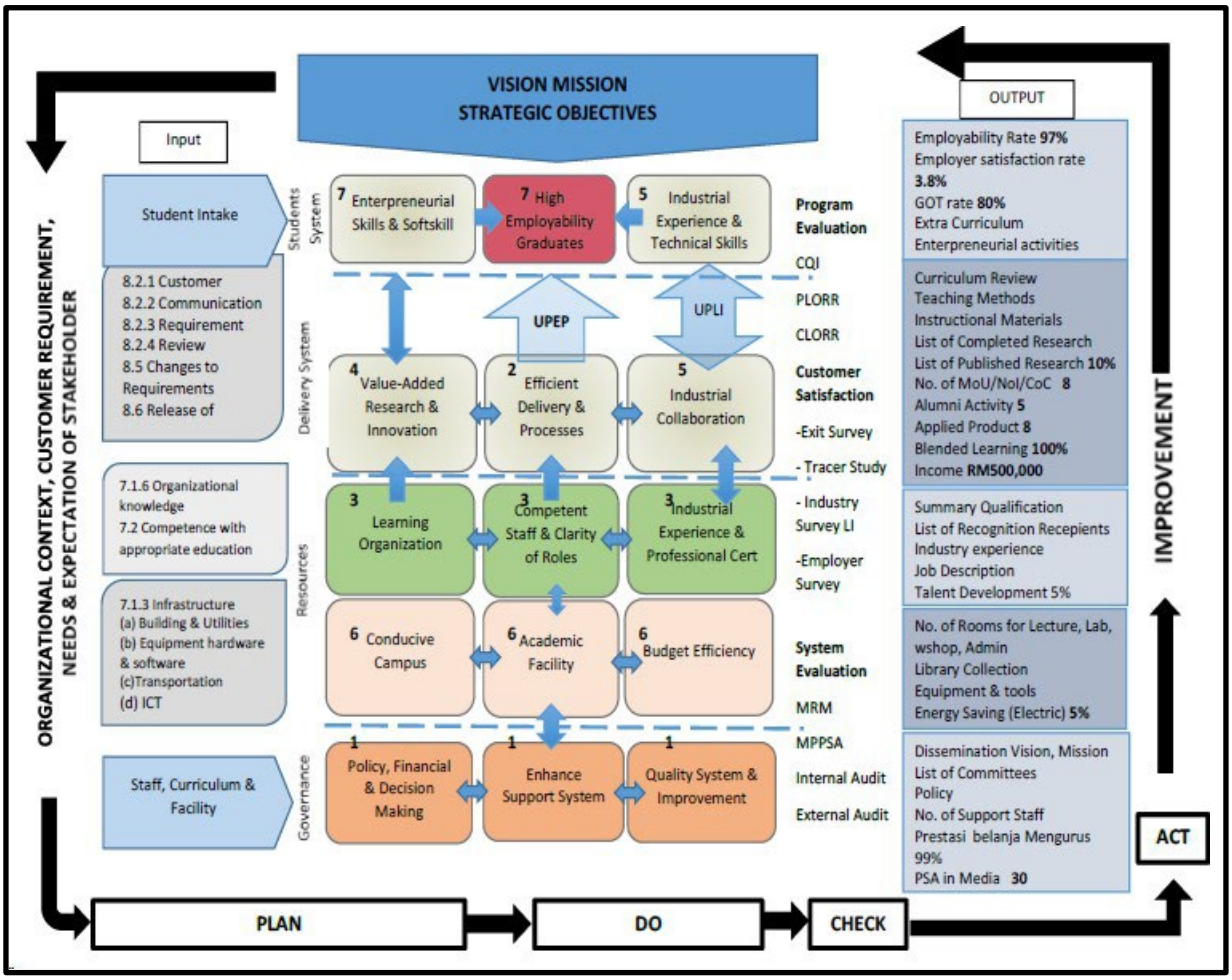


Figure C7-2e: PSA PDCA - Management Model

v. The scope and function of the PSA Excellence Criteria (*Kriteria Kecemerlangan*) according to QMS PSA

PSA PDCA - Management Model forms the foundation for the implementation of the EOMS within PSA. These 7 criteria of excellence serve as key drivers in ensuring the effectiveness and excellency of PSA Quality Management System while playing an important role in shaping the management of an effective and quality educational organization. Here are the general functions of each criterion in the PSA quality management system:

Criterion of Excellence 1: Governance and Administration (K1)

This criterion refers to effective administration in controlling educational institutions. It involves the establishment and implementation of effective policies, procedures, and organizational structures. Strong governance helps ensure transparency, accountability, and excellence in the delivery of education in PSA. This criterion of excellence also serves to consolidate governance as well as responsiveness in improving institutional performance in line with the principles, philosophy, vision, mission and goals set by JPPKK and KPT.

Criterion of Excellence 2: Teaching and Learning (K2)

The function of the Criteria 2: Teaching and Learning is to develop, organize, and oversee efficient methods of teaching and learning. It encompasses innovative teaching strategies, the use of technology in learning, as well as an approach that focuses on the needs and development of students, integration of technology in education, and a strategy that prioritizes students' needs and growth. These criteria's functions include planning, coordinating, and monitoring all activities associated with the Teaching and Learning Process (PdP). They also include developing the execution of learning and teaching using 21st-century teaching methodologies and the use of modern technology, including future technologies. Providing technical and multimedia assistance for the creation of digital material by developing ways to improve academic competency

Criterion of Excellence 3: Staff Development (K3)

This criterion is responsible for generating effective workers through comprehensive long-term talent development programmes. This criterion of excellence should focus on building the professionalism and expertise of academic and administrative staff through learning and development opportunities, as well as fair performance assessment. Continuous staff development helps ensure the level of quality in teaching, research, and management of institutions.

Criterion of Excellence 4: Research, Innovation, and Commercialization (K4)

These criteria serve to design, coordinate and monitor research, innovative discoveries, and commercialization opportunities of research results at PSA. Specifically, the functions of these criteria of excellence are:

a. Developing research and innovation
b. Disseminating and applying the results of project professors and students
c. Managing Research and Innovation

Criterion of Excellence 5: Corporate, Industrial Relations, and Marketability (K5)

These criteria are responsible for facilitating networking and collaboration between polytechnics and industry. Specifically, this criterion is responsible on the following matters:

a. Providing services and responses to the needs of industry, especially those involving collaboration and placement of graduates
b. Improving the marketability and employment availability of PSA student
c. Provide career advisory services, planning and preparation for graduates to the workplace
d. Implementing programmes designed by PSA and JPPKK to improve “graduate employability”

Criterion of Excellence 6: Facility Development and Management (K6)

These criteria refer to the management and provision of conducive facilities for teaching and learning. It involves the provision of appropriate infrastructure, the operation of facilities, as well as the sustainability and improvement of facilities in the long term. Specifically, the function of these criteria is:

a. Planning, coordinating, and monitoring the management of asset allocation and primary storage
b. Providing fundamental guidelines for physical construction, enforcement, and project management for development and facility projects, including planning and overseeing building upgrades, managing contracts for cleaning services, and mechanical and electrical systems.
c. Accelerating the foundation, strategic design of ICT, overseeing ICT allocation, overseeing ICT procurement processes, and ensuring the comprehensive operation of ICT systems and services, as well as providing technical support to ensure smooth system operations.
d. Assist in ensuring a safety and health of PSA environment by regular inspections related to safety, health, and work.
e. Monitoring the management of new collections from the academic department and coordinating the management of donated collections, journals, and newspapers, as well as preparing the process of updating library loan records.

Criterion of Excellence 7: Student Affairs (K7)

These criteria address the aspects of student welfare and management. They include the provision of quality student services, support in personal and professional development, and the management of student issues to ensure a holistic and satisfactory educational experience. Specifically, the functions of these criteria are:

a. Managing and processing the admission and enrolment of students
b. Planning and managing discipline-related matters
c. Monitoring and taking care of matters relating to student welfare
d. Planning, coordinating and implementing PSA voluntary activities

Design, managing, implementing and monitoring student activities by practicing and adhering to the principles in each of these excellence criteria, educational institutions can build and maintain an effective Management System of Educational Organizations, focusing on excellence in all aspects of their operations

F. Attracting and Appointment of Academic Staff

PSA is one of the polytechnics under the purview of the Department of Polytechnic Education, Ministry of Higher Education Malaysia. As mentioned, DKM has partial autonomy in terms of the number of allocated posts and the appointment of its academic staff and is subjected to the approval of the Public Service Department (PSD) and the Education Service Commission Malaysia (ESC). Academic staff under the polytechnic system are categorized under the DH scheme as stipulated by the PSD based on the Service Circular No. 33/2007: Service Scheme for Higher Education Officers. For all its polytechnics, DKM works closely with PSD and ESC to ascertain that the required academic posts and the appointment of its academic staff at all polytechnics fulfill the requirements of the education programmes. Specific and detailed requirements of the academic staff are relayed to ESC. ESC will then interview potential academic staff based on the eligibility of the candidates via online application. All polytechnics will

receive new appointed academic staff via DKM based on their specialization and programmes offered at the polytechnic. Appointment of all academic staff under the DH scheme is governed by the Service Circular No. 33/2007.

Based on qualifications attained, the academic staff is categorized as shown in **Table C7-2a.**

No	Category	Minimum Qualification
1.	Management & Professional	Bachelor's Degree
2.	Support Group I	Diploma
3.	Support Group II	Certificate

Table C7-2a: Qualification and Position

Based on responsibilities and tasks and with reference to the Service Circular No. 33/2007, academic staff are categorised as shown in **Table C7-2b**.

Category	Category Descriptions
I	Academic staff fully focusing on teaching and learning process
II	Academic staff with major responsibilities of teaching and learning and in addition handling some management responsibilities
III	Academic staff at polytechnics undertaking management responsibilities
IV	Academic staff at the MOHE undertaking management responsibilities

Table C7-2b: Category Descriptions

In terms of attracting and appointment of academic staff, all processes are based on all the General Orders, Acts and Government Circulations.

G. Professional Development, Retainment and Awarding Mechanism

To ensure the effectiveness of the teaching and learning process towards the attainment of learning outcomes, a continuous professional development mechanism is essential. At PSA, with a total of 426 staff, structured initiatives are implemented in alignment with the framework established by DKM. Under this centralized governance system, all polytechnics, including PSA, are required to conduct internal processes that ensure staff receive the necessary training to enhance their knowledge and skills. Professional development is divided into three main components, as shown in **Figure C7-2f**.

Figure C7-2f: Professional Development of Academic Staff

Under the first component, academic staff is given the opportunities to develop their academic attainment by furthering their education at post-graduate or bachelor's degree level utilizing the scholarships offered with full- pay leave benefit. For those wishing to further their education as part-time students, benefits of unrecorded leaves are given for them to attend examinations. The second component of the professional development aims to develop the academic staff in their area of expertise including areas that support their work performance. Continuous trainings are designed for the novice as well as for the experienced. These continuous trainings are also designed to assist academic staff in their career pathways including promotional exercises. Trainings covered under the second component shown in **Table C7-2c.**

No	Training Policy	Type of Training
1.	Newly Appointed staff without teaching qualification	Course on Instructional Leadership and Andragogy Development (KIPA)
2.	Compulsory Courses in Current	• Career Path Competency Matrix (CPCM) • Skills Development Programme Program Peningkatan Kemahiran (PPK)
3.	Coaching and Mentoring Programme	Senior Lecturer as mentor to coach their junior lecturers in work related activities.
4.	Self-Development Programmes	In-Service Courses *Kursus Dalam Perkhidmatan (KUDAP)*
5.	Human Resources Training Policy	5 days as per MOHE's requirements

Table C7-2c: Types of Training

The third component of the professional development focuses on developing the expertise and skills of academic staff in line with the latest technological advancement in the related industry. Three approaches adopted are namely as shown in **Table C7-2d.**

No	Programme	Scope
1.	Lecturer Industrial Attachment (SIP) *(Sangkutan Industri Pensyarah)/LSI*	• Max duration of 90 days • In related industry
2	Professional Industrial Certification	Lecturers are encouraged to be certified by related industry in ensuring relevance of knowledge and skill.
3.	Internal Collaboration	• Lecturers are encouraged to collaborate at international level in areas such as research, teaching & learning approach • and lecturers exchange program.

Table C7-2d: Programme approaches for developing academic staff expertise and skills

H. Institutional Support and Operating Environment

The Training and Continuing Education Unit in PSA is in charge with the planning, implementing and evaluating of all trainings required by all the staff. The staff is given the opportunity to plan their self-development programmes with full support from the management. A comprehensive training needs analysis is carried out to establish training requirements. Based on this analysis and the financial resources available, trainings are carried out either internally or externally. Information regarding staff development training is distributed through letters, e-mails as well as internal circulars. The staff is also encouraged to submit applications to the respective units if there are any other courses or trainings that tailor to their needs.

Academic staff is always encouraged to be involved in consultancy works not only to be exposed to the latest industrial technology and real-world environment but also to fulfill the long-term objective of achieving membership with various professional bodies. PSA also encourages staff to participate in the professional development programmes by executing the training policy whereby staff is required to attend a minimum of four days of training programmes within a year. In addition, the institution encourages staff to go for their industrial attachment (SIP)/LSI for a maximum period of 3 months especially so for academic staff without industrial experience. Academic staff may also be sent for professional certification courses based on needs of the departments as well as the institution.

Under the agenda of lifelong learning and in line with efforts to retain excellent staff, all lecturers are encouraged to further their studies at the master's or doctoral level. Information on the Hadiah Latihan Persekutuan (HLP) scholarship is disseminated by JPPKK through official announcements and advertisements, as referenced in **Appendix C7-2a**. These scholarships are fully sponsored by the government and are offered to eligible lecturers based on the proposed field of study.

Job promotion exercise in the scheme is continuously carried out by the JPPKK and academic staff may apply upon the fulfillment of all requirements. Promotion exercise is, among others, to ensure continuous career pathways and a method of ensuring work satisfaction amongst its employees. Academic staff is promoted to a higher grade upon fulfilling all the criteria that have been developed

based on the categorization of work. Part of the main criteria to be fulfilled for promotion purposes is shown in **Table C7-2e**.

No	Evaluation Scope	Evaluation Items
1.	Teaching and Learning	• Implementation of teaching and learning activities and co-curriculum • Assisting in teaching and learning activities in the unit/department • Develop innovation related to their teaching and learning process • Supervision of students' academic projects or activities
2.	Research and Development	• Research within the current grade level
3.	Writing and Publication	• The writing and publication of research output and based on current grade level

Table C7-2e: Job Promotion Evaluation and Scope

Towards continuous career development, the management of PSA always encourages lecturers to do research and development in their related fields and to present their findings at suitable platforms, be it at institutional level, national level or international level. At the institutional level, a well performed staff will be awarded with Monthly Excellent Staff Award (Anugerah Pekerja Cemerlang Bulanan). The ceremony is conducted during the monthly assembly and the recipients receive a certificate from the Director whilst their pictures are displayed at the administration main building. In addition, a yearly event known as Excellent Service Award (Anugerah Perkhidmatan Cemerlang) is organized to appreciate the staff that have shown excellent service to the institution under the Department of Polytechnic Education. All awards given are bounded by the circular as in **Table C7-2f**.

Staff Evaluation	
Yearly Performance Evaluation	General Circular No. 4/2012 Malaysian Remuneration System - Staff Evaluation.
Policy in Rewards	General CircularNo.13/2012- Excellent Service Award Administrative Circular KPT.Bil.1/2008- Monthly Employee Awards.

Table C7-2f: Staff Evaluation

C7-3 Discuss the mechanism for the following: programme planning; curriculum development; curriculum and content review; responding to feedback and inputs from stakeholders including industry advisors, partner industry for WBL training (if applicable), students and alumni; tracking outcomes of performance through assessment; responding to External Examiners/Advisor comments; reviewing of PEO and PO; and the CQI. Where these are discussed elsewhere in the report, specify their locations. For a new programme, the IHL also needs to discuss the processes surrounding the decision to introduce the programme.

I. Programme planning; curriculum development; curriculum and content review

The development and improvement of the curriculum are based on national-level acts, policies, and laws, development plans at the KPT level, and strategic plans at the JPPKK level, which serve as a guide for the BK in carrying out curriculum development and improvement activities for polytechnics and community colleges. This curriculum development and improvement can be referred to in **Figure C7-3a**

Figure C7-3a: Guidelines for Curriculum Development and Review of Polytechnics and Community Colleges

The curriculum development for new programme for Polytechnic and Community College programmes follows the design cycle outlined in the latest SOP for Programme Alignment and Delivery. As shown in **Figure C7-3b**, the process covers identifying programme needs, developing and verifying the curriculum, obtaining MLK/JKIK approval, and enforcing the use of curriculum documents. This ensures the curriculum remains relevant, of high quality, and aligned with current TVET needs.

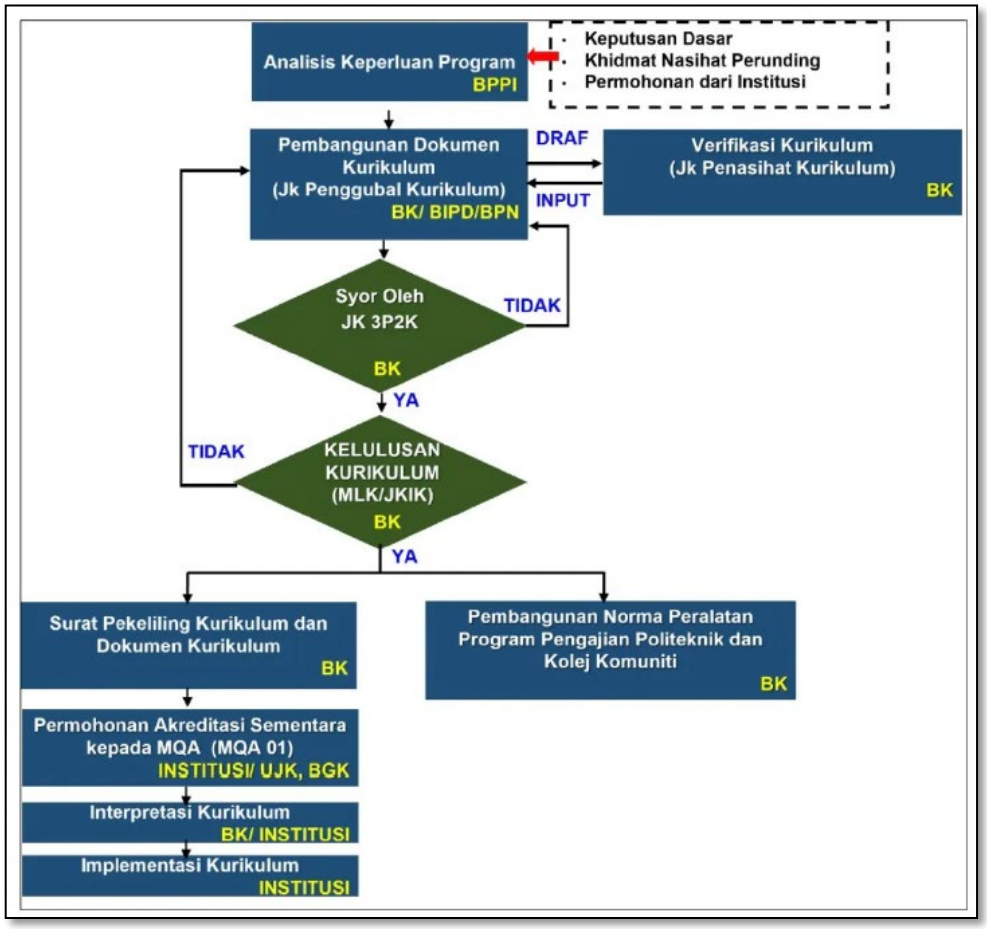


Figure C7-3b: Curriculum Development Process Flowchart

The curriculum review process for existing programme is essential to ensure that academic content remains relevant, aligns with job market needs, and reflects current technological and knowledge developments. As shown in **Figure C7-3c**, the process involves obtaining feedback, drafting, reviewing, approval, and enforcement at the institutional level. Each program must undergo these steps with thorough preparation and adequate planning to ensure effective implementation. Based on **Figure C7-3c**, the curriculum review process for academic programmes consists of five (5) main stages, namely:

a. obtaining input and feedback from stakeholders
b. implementing improvements to the curriculum document
c. obtaining curriculum verification from the Curriculum Advisory Committee
d. seeking endorsement from the Polytechnic and Community College Study Sub-Committee (JK3P2K)
e. securing approval from the Polytechnic Curriculum Board (MLK) and the Community College Main Curriculum Committee (JKIK)

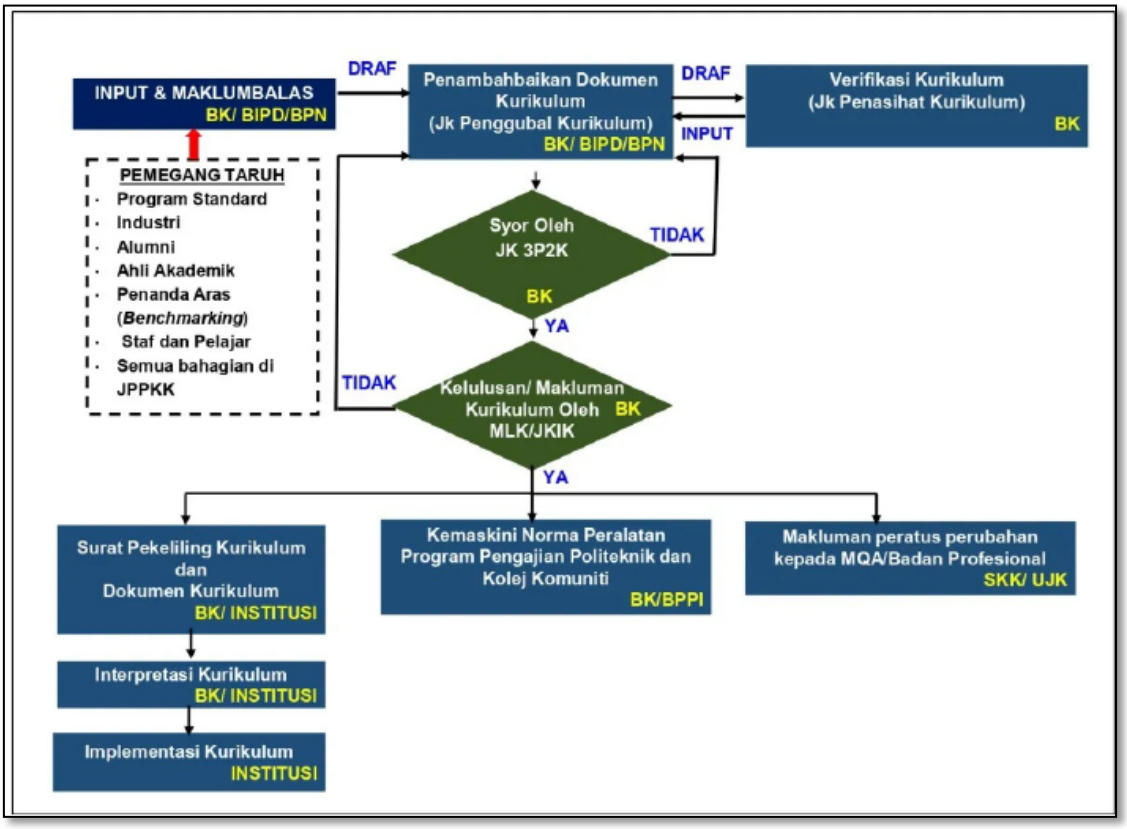


Figure C7-3c: Flowchart of Curriculum Review Process

J. Responding to feedback and inputs from stakeholders including industry advisors, partner industry for WBL training (if applicable), students and alumni

Stakeholder feedback is a key element in curriculum improvement, ensuring that programmes remain relevant and aligned with current industry and societal needs. **Figure C7-3d** illustrates how this process is implemented at the institutional level, where feedback is not only gathered within PSA but also coordinated and supported by JPPKK, which plays an important role in systematically incorporating stakeholder input.

No.	Stakeholder	Description	Related Report/Document	Responsible Division/Institution
1	Government/Quality Assurance Agency	Provides allocations and needs for an educated populace, sets policies and the direction of higher education	National Education Policy	JPPKK
2	Industry/Employer	Provides input regarding the latest developments in technology and industry practices	Industry Advisory Committee (IAC) Report; Industry Advisory Meeting Minutes	BKIK and Institution
3	Accreditation Body	Ensures standards and registration of PPT qualifications	Program Standards/Accreditation Manual; Accreditation Audit Report	BGK and Institution

4	Association/Professional Body	Ensures the PPT is registered with the professional body	Related Meeting Minutes and Reports	Institution and JPPKK
5	Academician	Provides input regarding the latest developments in technology and the need for curriculum improvement	Program Advisory Meeting Minutes	Institution and BK
6	Lecturer	Academic and administrative staff whose lives are affected by the quality of PPT	Curriculum Feedback System; PLO Achievement Reporting System (S3P)	Institution and JPPKK
7	Parents and Student Sponsors	Parties who make financial investments and place their hopes in higher education	Achievement Analysis Report	Institution and BAPP
8	Alumni	Provides input regarding technological developments and past experience	Alumni Study; Graduate Employability Study; PEO Study	BKIK
9	Current Students	Students who forgo other activities and potentially income to study at PPT	Student Achievement Analysis Report via CORR and PLORR	BPN

Figure C7-3d: Examples of Curriculum Feedback Sources/Documents

i. Tracking outcomes of performance through assessment

The direct assessment methods which mapping to learning outcome for each course has been identified during the curriculum development process. After all assessment methods (formative and summative) are implemented, the data of assessment will be recorded into i-EXAM, SPMP. Then, the system will process all data and generate results for CLO and PLO achievement (CORR and PLORR). The performance of all outcomes will be interpreted by stakeholders to act as continuous quality improvement. The involvement and assessment of students in non-academic activities such as clubs, sports, uniform bodies and others were also indirectly contributing to the achievement of the PLOs.

ii. Mechanism for Responding to External Examiners Comments

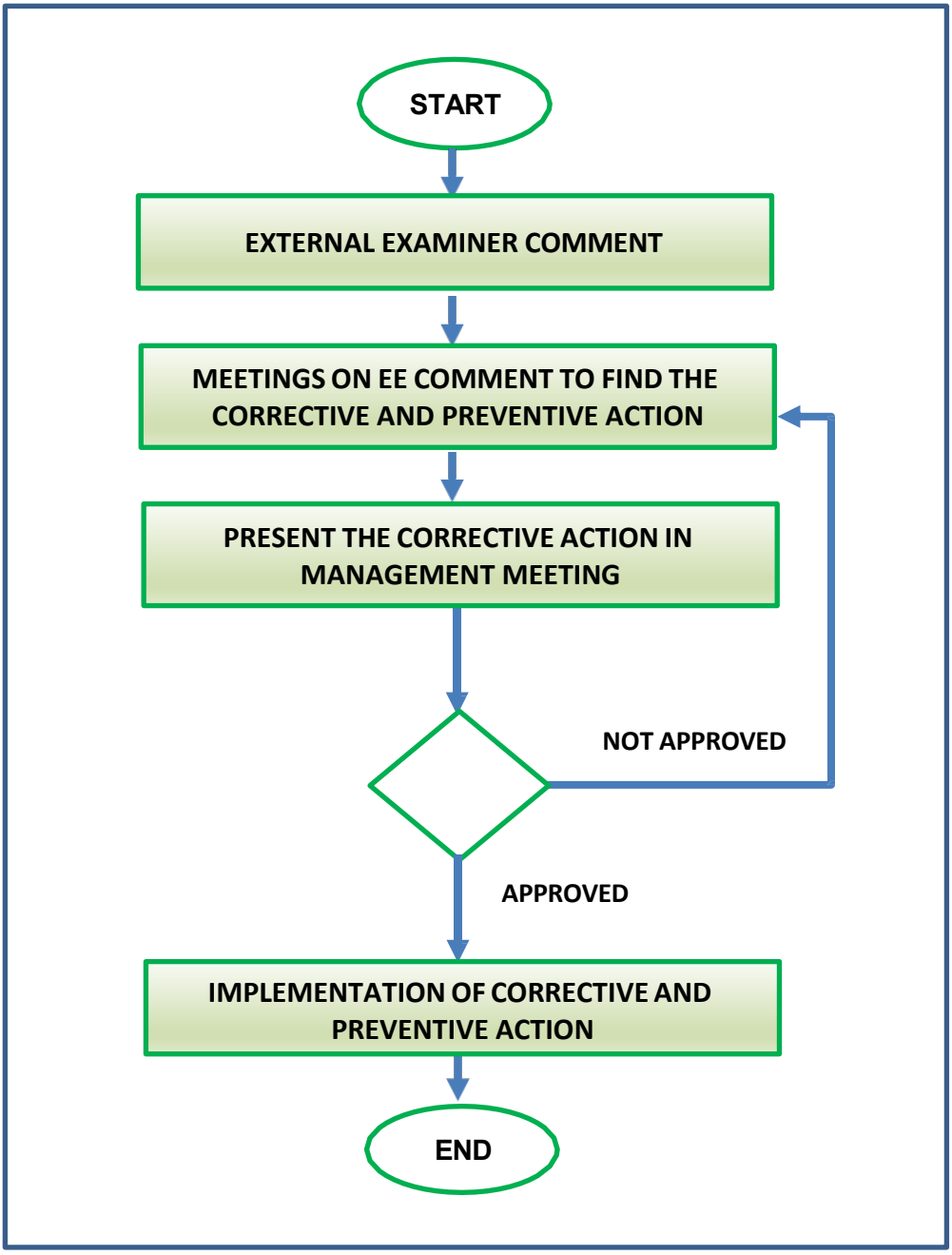


Figure C7-3e: Mechanism for responding to External Examiners Comments.

iii. Mechanism for Reviewing of Programme Objective and Programme Outcomes

Refer to Criterion 1 and 2

iv.Mechanism Continual Quality Improvement of the Quality System

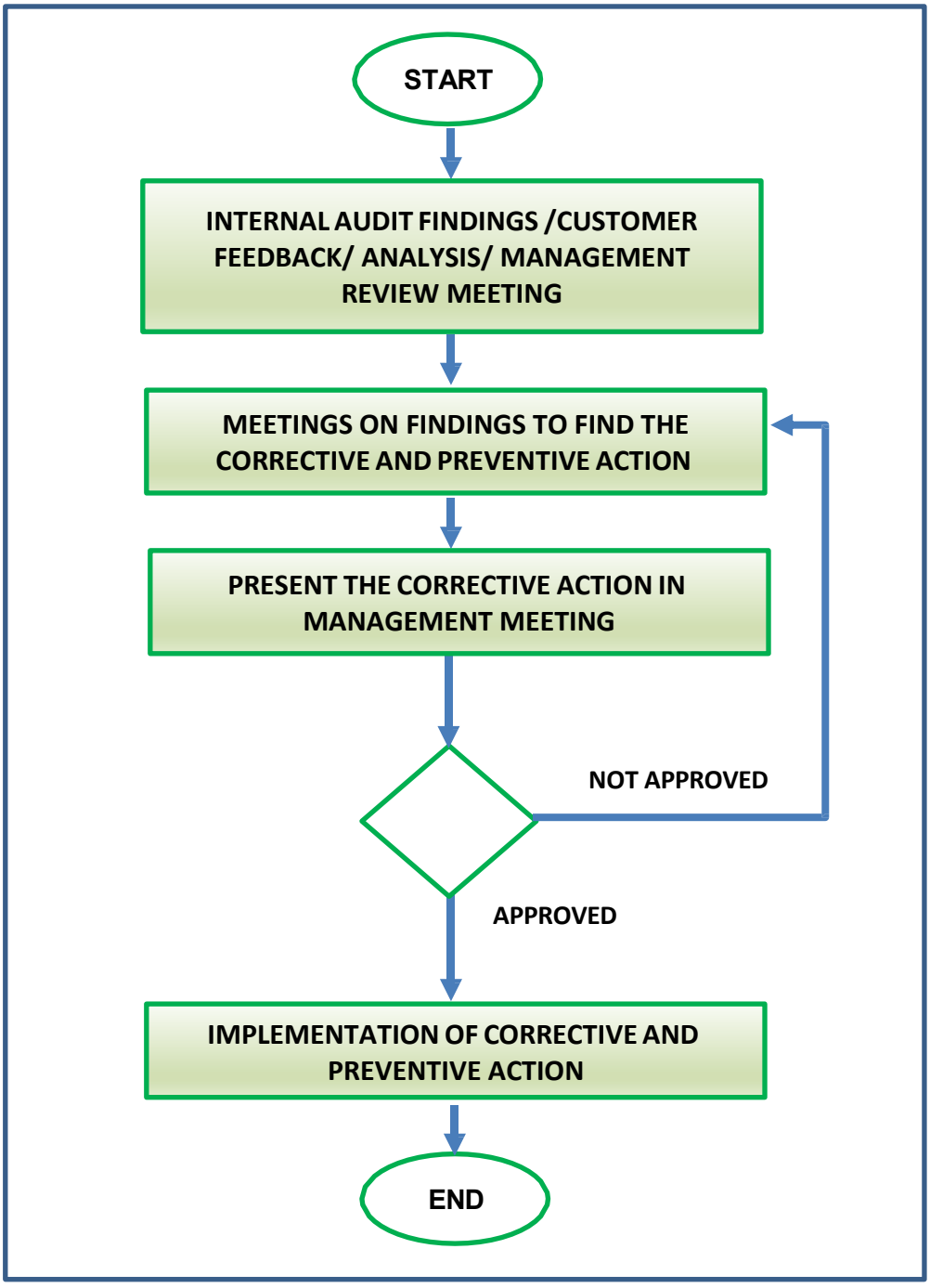


Figure C7-3e: Mechanism Continual Improvement of the Quality System

C7-4 Summarise Responses to the External Examiner/Advisor, IAP and Stakeholders and how CQI was carried out.

K. Summarise Responses to the External Examiner

The Department of Mechanical Engineering (JKM) has reviewed and summarised feedback received from the External Examiner/Advisor, the Industry Advisory Panel (IAP) and other stakeholders as part of its Continuous Quality Improvement (CQI) efforts. The feedback covered various aspects including curriculum relevance, programme management, teaching and learning support, industry alignment, student development, and long-term sustainability of the programme. Based on these inputs, the department has implemented several measures such as curriculum enhancement, improved monitoring of industrial training, strengthening industry collaboration, capacity building for staff, and reinforcing student support mechanisms. These actions demonstrate a structured CQI process where recommendations are translated into continuous improvements to ensure the programme remains relevant, sustainable, and responsive to stakeholder needs.

Evidence of stakeholder engagement and CQI actions are provided in the following appendices:

a. Appendix C7-4a: External Examiner/Advisor Report
b. Appendix C7-4b: Feedback for External Examiner/Advisor Report
c. Appendix C7-4c: Minutes of Industry Advisory Panel (IAP) Meeting
d. Appendix C7-4d: Feedback for Industry Advisory Panel (IAP) Minutes of Meeting

C7- 5 Summarise benchmarking reports and how CQI was carried out

L. Summarise benchmarking

At Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), stakeholder feedback serves as a critical foundation for programme enhancement. Input is systematically collected from industry partners, professional bodies, alumni, lecturers, and students to ensure that the programmes offered remain relevant, current, and aligned with the evolving demands of the job market.

Complementing stakeholder input, benchmarking exercises are undertaken with selected higher education institutions and industry practices. Benchmarking enables the Department to identify gaps, adopt best practices, and align programme standards with national and international benchmarks. The findings from these exercises are subsequently presented and deliberated in the Department's Academic Management Meeting, where appropriate strategies and actions are formulated. The outcomes of these discussions directly inform Continuous Quality Improvement (CQI) initiatives, thereby strengthening programme sustainability, competitiveness, and responsiveness to emerging educational and industrial trends.

Benchmarking is recognised as a systematic process of identifying and adopting the best practices and performance standards. Its objective is not only to highlight areas for improvement but also to provide measurable indicators that guide evidence-based decision-making. At PSA, benchmarking outcomes contribute to curriculum refinement, teaching and learning innovation, student support services, and long-term programme sustainability. The detailed benchmarking report is provided in **Appendix C7-5a**.

C7- 6 Describe how the QMS of the IHL provides quality assurance covering (not limited to) the following:

System for Examination Regulations including Preparation and Moderation of Examination Papers: The programme has established a working system for examination regulations including preparation and moderation of examination papers. System of Assessment for Examinations, Projects, and Industrial Training: The programme has established a working system for assessment of examinations, projects, industrial training and other forms of learning delivery. The scope of assessment is wide enough to cover the achievement of PO.

M. Examination Regulations

PSA has established a structured system for examination regulations, including the preparation and moderation of examination papers, as well as the assessment of examinations, projects, industrial training, and other learning activities. These systems are designed to ensure that the scope of assessment adequately measures the achievement of Programme Outcomes (PO). Procedures for preparing final examination papers are guided by ISO-certified processes and the assessment guidelines as provided in *Arahan-Arahan Peperiksaan dan Kaedah Penilaian* issued by JPPKK. The assessment framework encompasses continuous coursework, final examinations, final-year projects, and industrial training. Final examination questions are developed based on the Final Exam Item Specification Table (FEIST) and the approved DKM course syllabus.

At the departmental level, the Examination Committee oversees the preparation, moderation, and assessment of examination papers. Draft papers are first moderated internally against Programme Learning Outcomes (PLOs) and taxonomy levels before submission to JPPKK for further review. Assessment rubrics are applied to activities requiring subjective judgement to ensure consistency and fairness.

Quality assurance for assessment is maintained through both the Quality Management System (QMS) and the Integrated Educational Management System (IEMS). All related processes, procedures, and documentation are prepared in accordance with QMS and IEMS requirements. Supporting references, such as regulations, directives, and stakeholder guidelines, are also considered to strengthen implementation. At the polytechnic level, formal procedures for the preparation of final examination papers have been established. The process, coordinated by JPPKK, begins with the preparation of the FEIST, followed by the drafting and review of examination papers, the conduct of the examination, and finally the submission of results.

Institutions of Higher Learning (IHLs) are responsible for monitoring academic staff adherence to these work processes. To ensure reliability and fairness in assessment, moderation of both examination papers and answer scripts is conducted, reviewing the assessment items, marking schemes, and assessor judgements. The workflow for moderation is illustrated in **Figure C7-6a**.

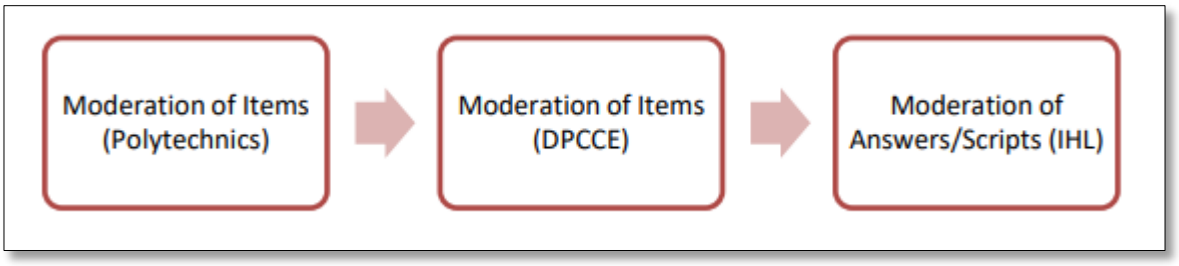


Figure C7-6a: Workflow of Moderation Process for Examination Papers

N. System for student admission and teaching and learning: The programme has established a working system for student admission and teaching and learning.

The programme has a well-established system for student admission and for the management of teaching and learning activities. Student admission into polytechnics is centrally managed by the Student Admission Division, JPPKK, and is conducted twice annually, in February and August. The admission process follows national guidelines to ensure transparency, fairness, and alignment with entry requirements, thereby guaranteeing that students admitted possess the qualifications necessary to undertake the programme successfully.

Teaching and learning activities at PSA are conducted in accordance with MS ISO 21001:2018 Educational Organization Management System (EOMS) quality procedures, which serve as the institutional framework for ensuring effective educational delivery. Lecture and practical session plans are prepared in advance for every semester to provide structured, consistent, and outcome-based learning experiences. Students are required to attend all scheduled academic activities, as compulsory attendance is part of the quality assurance mechanism to enhance engagement and learning outcomes. Lecturers are responsible for preparing Course Outlines aligned with the syllabus and Programme Learning Outcomes (PLOs), and for maintaining updated Course Files to document lesson plans, teaching materials, assessments, and student performance.

In addition, continuous monitoring and evaluation are carried out through periodic academic reviews, student feedback, and departmental meetings. This systematic approach ensures that teaching and learning activities not only comply with prescribed standards but also support continuous quality improvement (CQI) in line with institutional, national, and industry expectations.

O. PSA Quality Assurance. Quality assurance can be reflected through proper and sufficient policies/ rules/regulations/procedures in the Department/Faculty or IHL, and whether those systems are implemented.

Quality assurance at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) is embedded within the institution's governance and academic culture to ensure that all processes, services, and academic programmes meet established standards and stakeholder expectations. The Quality Management System (QMS) provides a structured framework for planning, implementing, monitoring, and evaluating institutional activities. This system ensures that services delivered are consistent, effective, and aligned with customer and stakeholder needs. PSA adopts the principle of Continuous Quality Improvement (CQI), where processes and outputs are regularly monitored, measured, and reviewed to identify areas for enhancement.

To operationalize QA, PSA has established an Internal Audit Unit, which functions to coordinate, monitor, and evaluate the implementation of QMS across departments. This unit ensures compliance with internal policies as well as external accreditation and regulatory requirements. Quality practices are supported by Standard Operating Procedures (SOPs) that standardize implementation, promote accountability, and provide clear guidance for staff. In addition, regular internal audits, management reviews, and external audits are conducted to verify compliance and effectiveness. At the academic level, QA is further reflected through curriculum review cycles, student assessment moderation, teaching and learning monitoring, and stakeholder feedback mechanisms. Collectively, these measures ensure that PSA maintains high educational standards, addresses stakeholder needs, and upholds the integrity and sustainability of its programmes.

C7- 7 Describe the management system for safety, health and environment.

P. Management system for safety, health and environment

Safety and Health (OSH) Management through the **Unit Pengurusan Keselamatan dan Kesihatan Pekerjaan (UPKES)**, ensuring that faculty, staff, and students have a safe and healthy environment for work and study. To support this, an OSH management team has been formally established by the top management in collaboration with the Department of Occupational Safety and Health (DOSH). In recognition of its structured approach, PSA has been certified with the **ISO 45001:2015 standard** since November 2020. The organizational structure of UPKES, which illustrates the hierarchy and responsibilities in managing OSH at PSA, is shown in **Figure C7-7a**.

Figure C7-7a: Organizational Chart of UPKES

The UPKES management team is responsible for creating a set of policies that outline responsibilities, activities, and assessment of performance with respect to safety, health and environmental goals shown in **Table C7-7a**. It is part of the overall management of PSA that addresses hazards and risks associated with its activities.

No.	Activity	Date
1	Taklimat Keselamatan dan Kesihatan Pekerjaan bersama Pekerja Kebersihan dan Lanskap	5 Feb 2025
2	Latihan Pengungsian Bangunan Kolej Kediaman	12 Feb 2025
3	Latihan Pengungsian Bangunan JKA (26 Feb 2025)	26 Feb 2025
4	Latihan Pengungsian Bangunan Bangunan Pengurusan Fasiliti	27 Feb 2025
5	Poster Keselamatan Pejabat Semasa Cuti Perayaan	24 Mac 2025
6	Taklimat UKKP Pelajar Baru Sesi 1 2025/2026	30 Julai 2025

Table C7-7a: List of activities on safety, health and environment which have been conducted in PSA with the involvement of students and staff.

The PSA OSH team is also responsible for creating OSH units in every department to assist in the creation of an accident-free and eco-friendly campus. The organization chart of the OSH unit at Department of Mechanical Engineering is illustrated in **Appendix C7-7a**. All OSH activities from JKM department are aligned with the PSA UPKES to comply with the requirement stated in the standard.

The emergency Response Team (ERT) unit is also formed to aid faculty and students in the case of an emergency. The ERT Unit is a support unit for emergency cases for the OSH unit under the Department of Mechanical Engineering. The overall objective of ERT unit is to ensure the effective management of emergency efforts involved in preparing for and responding to situations associated with emergencies.

These include:

a. Activating the emergency communications system;
b. Establishing priorities;
c. Managing and coordinating emergency operations;
d. Coordinating and maintaining liaison with local, state and federal agencies;
e. Requesting and allocating resources to deal with the crisis;
f. Collecting, evaluating, and disseminating situational and damaging information and other essential data;
g. Responding to requests for resources and support; and
h. Restoring essential services

PSA, an educational institution of Malaysia Government is determined to ensure all activities are conducted in a safe and healthy environment. To implement this policy, PSA will:

a. Ensure compliance with all rules and regulations related to Occupational, Safety and Health.
b. Establish an efficient and effective safety and health management system.
c. Prevent accidents and hazards for all customers and employees by providing a safe environment.
d. Ensure continuous improvement of the management system and implementation of operations with the full involvement of employees, customers, and stakeholders through consultation, training, and continuous education.

e. The policy is constantly monitored and reviewed to align with legal requirements and organizational needs, and this is achieved through the commitment of all parties involved. The policy is constantly monitored and reviewed in line with legal requirements and organization and this is realized through the commitment of all parties.

C7- 8 Describe CQI strategies to be implemented in relation to QMS

Q. CQI strategies to be implemented in relation to QMS

PSA is SIRIM MS ISO 21001:2018 Educational Organizations Management Systems (EOMS) certified in 2022 which requires undergoing surveillance audit once every year and recertification audit once in every three years. In addition, the Quality Management Team as in **Figure C7-8a** also conducts internal auditing to ensure the process of teaching and learning as well as the management of IHL are implemented according to the MS ISO procedures.

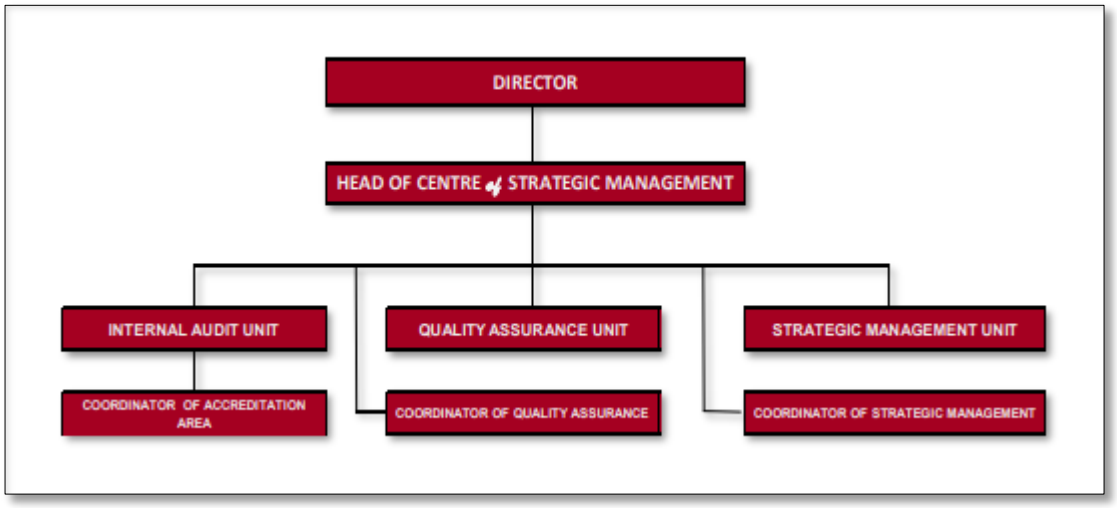


Figure C7-8a: Unit Quality Management Committee

In order to achieve PSA's mission and vision, the departments and units have developed quality objectives for every major process and function. The quality objectives are based on the key performance indicators (KPIs). The guiding principles in establishing KPIs are among others the Malaysian Education Blueprint (Higher Education) and the Polytechnic Transformation Plan produced by MoHE. Programmes offered at PSA are accredited by external examiners in order to fulfil the requirements set by the ETAC and Malaysian Qualifications Agency (MQA). Internal Quality Audits (IQAs) are conducted towards sustaining the quality of the programmes to make sure it is at par with the latest developments in technologies used in industries. The organisation chart of the Internal Audit Unit of PSA is shown in **Figure C7-8b**

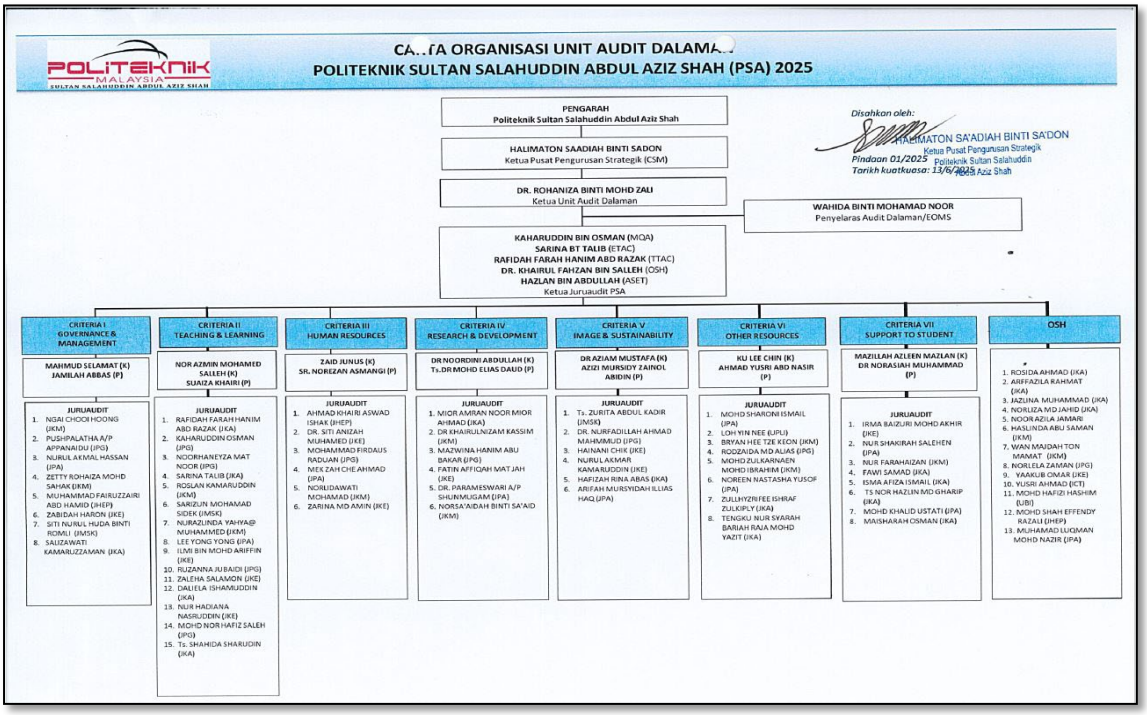


Figure C7-8b: Organizational Chart of the Internal Audit Unit of PSA

The findings of IQA will be presented during meetings plat forms as listed in **Table C7-8c**.

NO	Committee	Frequency of Meeting
1.	Management Review Meeting	Once a year
2.	Management Meeting	Monthly
3.	Academic Meeting	Twice a year

Table C7-8c: Types of Meetings

In order to maintain the quality of DKM programme in all criteria, the CQI of the programme is done by considering all aspects based on feedback and outcome not only from alumni and the Industrial Advisory Committee (IAC) meeting with industry but also mainly based on feedback from MRM meeting, management meeting as well as academic meeting at JKM and PSA level.

ISO 45001:2018 - Occupational Safety and Health (OSH)

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) has successfully completed the Lloyd's Register Quality Assurance (LRQA) audit for ISO 45001:2018, maintaining its certification from 2020 to the present, with renewal scheduled for 2025. Achieving ISO 45001:2018 certification underscores PSA's unwavering commitment to occupational safety and health (OSH). Rigorous measures were undertaken to meet the stringent requirements set by LRQA, an internationally recognized authority responsible for auditing compliance with OSH standards. Adherence to these standards not only reflects PSA's dedication to providing a safe and healthy working environment but also demonstrates its continuous compliance with international benchmarks for occupational safety and health. The certification further affirms PSA's commitment to delivering high-quality services to all stakeholders.

In its pursuit of excellence in OSH management, PSA's top management has established a dedicated OSH management team in accordance with the principles of ISO 45001:2018. A special unit, known as the Unit Pengurusan Keselamatan dan Kesihatan Pekerjaan (UPKES), has been formed to enforce and oversee the implementation of occupational safety and health policies across the institution. The UPKES unit is entrusted with fostering a secure and healthy environment for departments, staff, and students. Its establishment reflects PSA's proactive approach in safeguarding the well-being of its academic community and promoting a conducive environment for both work and study. To ensure comprehensive OSH implementation, each department has appointed a designated officer responsible for coordinating UKKP activities within the department, serving as the key liaison to facilitate effective safety and health management at the departmental level.

ISO/IEC 17025

ISO/IEC 17025 defines the general requirements for the competence of testing and calibration laboratories and is widely recognized as the standard for ensuring technical proficiency. Accreditation under ISO/IEC 17025 demonstrates that a laboratory is capable of producing reliable and accurate results, and Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) is among the institutions that have successfully obtained this recognition. This accreditation coincides with PSA being one of three Premier Polytechnics entrusted with establishing a Centre of Excellence in Technology (CMET) in selected niche areas. In line with the polytechnic transformation agenda, PSA has developed CMET in the field of Medical Electronics. The CMET aims to serve as a leading centre for technical and vocational education and training (TVET). Its vision is to emerge as a national centre of excellence, achieving high standards in Medical Electronics and supporting the development of skilled professionals for the industry. This is achieved through collaboration, research and development, publications and excellent teaching and learning. As part of the PSA mission statement, CMET hopes to be a catalyst to contribute towards achieving the country's goal of becoming a high-income nation and leader in Technical Vocational Education and Training (TVET).

To be certified with ISO/IEC 17025, accredited by Department of Standards Malaysia, Laboratory accreditation bodies use the ISO 17025 standard specifically to assess factors relevant to a laboratory's ability to produce precise, accurate test and calibration data; including:

a. Traceability of measurements and calibrations to national standards
b. Technical competence of staff
c. Maintenance of test equipment
d. Quality assurance of test and calibration data
e. Validity and appropriateness of test methods
f. handling and transportation of test items appropriately and
g. maintaining the Quality of the test environment and sampling

By having the certification, it proves that the staffs have sound technical knowledge and skills to carry out calibration jobs using well maintain equipment using valid and appropriate test methods. These activities help staffs involved to enhance their knowledge and skills in order to be accredited.

C7- 9 Self-assess on programme performance related to QMS.

R. Self-assessment on programme performance

Self-assessment on programme performance constitutes a fundamental component of quality management in educational institutions. At PSA, this exercise is conducted annually to evaluate the extent to which academic programmes adhere to QMS requirements and the ISO 21001:2018 Education

Organization Management System (EOMS). ISO 21001:2018 establishes a comprehensive framework for education providers to manage processes that influence learner outcomes, stakeholder satisfaction, and overall institutional effectiveness. Through this systematic self-assessment, the department critically examines curriculum delivery, teaching and learning practices, student assessment, and graduate competencies to ensure alignment with institutional objectives and the PSA Action Plan KPIs, with reference to the *KAMUS KPI POLYCC*.

The self-assessment process is closely integrated with the PSA Action Plan, which defines annual academic and operational targets. Programme performance is rigorously measured against clearly defined Key Performance Indicators (KPIs), ensuring that objectives pertaining to student learning outcomes, graduate employability, and industry relevance are effectively achieved. By leveraging the KPI framework provided by POLYCC, the department can monitor trends, identify performance gaps, and benchmark achievements against national and institutional standards. This alignment ensures that continuous improvement initiatives are evidence-based, targeted, and fully compliant with the requirements of ISO 21001:2018.

Through this self-assessment, the department evaluates compliance with documented procedures, internal audit results, and corrective and preventive actions mandated under ISO-based QMS and EOMS standards. The review encompasses teaching methodologies, learning resources, assessment strategies, and student support mechanisms. Outcomes of the self-assessment provide a clear understanding of programme strengths and areas requiring enhancement, fostering a culture of evidence-informed decision-making and continuous quality improvement. Crucially, this process ensures that academic programmes remain responsive to industry needs, national TVET policies, and evolving stakeholder expectations, while maintaining a strong focus on learner satisfaction and graduate competence.

Overall, the self-assessment process under ISO 21001:2018 not only ensures adherence to international quality standards but also functions as a strategic instrument for driving academic excellence. It generates actionable insights that inform curriculum development, faculty development, and resource allocation, ultimately enhancing the learning experience and outcomes for students. By systematically linking programme performance to KPIs, the PSA Action Plan, and ISO/EOMS requirements, the department demonstrates accountability, transparency, and an unwavering commitment to continuous improvement, in accordance with both national and international education quality benchmarks.

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

APPENDICES:
GENERAL INFORMATION

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA) DIPLOMA IN MECHANICAL ENGINEERING (DKM)

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

CARTA ORGANISASI PENGURUSAN
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PENGARAH
(Kosong)

TIMBALAN PENGARAH AKADEMIK
Ts. Dr. Ahmad Aftas bin Azman

- **JABATAN KEJURUTERAAN AWAM** — Nazrizam binti Ab Wahab
- **JABATAN KEJURUTERAAN MEKANIKAL** — Muhammad Faiz bin Abdullah
- **JABATAN MATEMATIK, SAINS & KOMPUTER** — Nariman binti Hj. Daud
- **PUSAT BERTAULIAH** — Zarinah binti Zaini
- **PUSAT PENYELIDIKAN & INOVASI** — Dr. Hjh. Noreen binti Kamarudin
- **JABATAN KEJURUTERAAN ELEKTRIK** — Ts. Norazlina binti Jaafar
- **JABATAN PERDAGANGAN** — Natasya Mariz binti Mohamed
- **JABATAN PENGAJIAN AM** — Haslina binti Abdullah@Mohamed
- **PUSAT AKADEMIK & TEKNOLOGI INSTRUKSIONAL TERKEDEPAN** — Dr. Marlina binti Ramli
- **PUSAT KORPORAT, HUBUNGAN INDUSTRI & KEBOLEHPASARAN** — Zalina binti Ismail
- **UNIT PEPERIKSAAN** — Rahimawati binti Muhamad Yusoff

- **PUSAT PENGURUSAN STRATEGIK** — Halimaton Saadiah binti Sadon
- **UNIT KOMUNIKASI KORPORAT** — Herlina Ainizawati binti Zakaria
- **UNIT PENGANTARABANGSAAN** — Mohd Khalid bin Ustati
- **UNIT KEUSAHAWANAN** — Julianti binti Samsudin

TIMBALAN PENGARAH SOKONGAN AKADEMIK
Dr. Sulaiman Bin Mohammed Khalid

- **JABATAN SUKAN, KOKURIKULUM & KEBUDAYAAN** — Julia binti Marjuki
- **PUSAT PENGURUSAN ASET & FASILITI** — Nor Zarini binti Ismail
- **UNIT PENGURUSAN KESELAMATAN & KESIHATAN PEKERJA** — Ts. Asmira bin Ashari
- **UNIT PENTADBIRAN** — Mazyan binti Muhamad Nordin
- **JABATAN HAL EHWAL PELAJAR** — Noor Hayati binti Mat Taib
- **PUSAT PEMBANGUNAN PROFESIONAL** — Ts. Normasita binti Sulaiman
- **PUSAT PEMBANGUNAN & SENGGARAAN INFRASTRUKTUR** — Mohamad Khirudin bin Amdan
- **UNIT KEWANGAN** — Roszaini bin Uyob
- **UNIT PEROLEHAN** — Rosni binti Kimin

Data kemaskini : 28 Ogos 2025

KEMENTERIAN PENDIDIKAN TINGGI

PEJABAT KETUA PENGARAH
JABATAN PENDIDIKAN POLITEKNIK
KEMENTERIAN PENDIDIKAN TINGGI
Galeria PjH, Aras 3-5, Jalan P4W,
Persiaran Perdana, Presint 4,
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Facebook : politeknik.edu

Ruj. Kami: KPT/JPP/BPD/01/03/06 (9)
Tarikh: 20 Mac 2018

TERIMA
30 APR 2018
Pentadbiran Sektor Strategik
Jabatan Pengajian Politeknik

SEPERTI SENARAI EDARAN

YBrs. Dr./Tuan/Puan,

HALA TUJU STRATEGIK POLITEKNIK DAN KOLEJ KOMUNITI

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan bahawa Pelan Strategik Politeknik dan Kolej Komuniti (2018-2025) telah dilancarkan semasa Amanat Tahun Baharu 2018 pada 12 Januari 2018. Program jerayawara bertujuan untuk menyebarluas informasi pelan tersebut sedang giat dilaksanakan di semua 36 Politeknik dan 94 Kolej Komuniti sepanjang bulan Mac dan April 2018.

3. Sehubungan itu, Hala Tuju Strategik Politeknik dan Kolej Komuniti yang merangkumi visi, misi, matlamat organisasi dan matlamat pendidikan mula digunakan secara rasminya pada **1 Mac 2018.** Adalah diharapkan hala tuju strategik yang baharu ini dapat melonjakkan reputasi Politeknik dan Kolej Komuniti menjadi institusi peneraju TVET yang unggul menjelang 2025.

4. Bersama ini dilampirkan Hala Tuju Strategik Politeknik dan Kolej Komuniti untuk makluman dan tindakan YBrs. Dr./Tuan/Puan.

Kerjasama dan perhatian YBrs. Dr./Tuan/Puan berhubung perkara ini amat dihargai dan didahulukan dengan ucapan ribuan terima kasih.

Sekian.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

(PROF. DATO' DR. MOHD ISMAIL BIN ABD AZIZ)
Ketua Pengarah
Jabatan Pendidikan Politeknik dan Kolej komuniti
Kementerian Pendidikan Tinggi

SENARAI EDARAN

1. **Pengarah**
   Politeknik Ungku Omar

2. **Pengarah**
   Politeknik Sultan Haji Ahmad Shah

3. **Pengarah**
   Politeknik Sultan Abdul Halim Mu'adzam Shah

4. **Pengarah**
   Politeknik Kota Bharu

5. **Pengarah**
   Politeknik Kuching Sarawak

6. **Pengarah**
   Politeknik Port Dickson

7. **Pengarah**
   Politeknik Kota Kinabalu

8. **Pengarah**
   Politeknik Sultan Salahuddin Abdul Aziz Shah

9. **Pengarah**
   Politeknik Ibrahim Sultan

10. **Pengarah**
    Politeknik Seberang Perai

11. **Pengarah**
    Politeknik Melaka

12. **Pengarah**
    Politeknik Kuala Terengganu

13. **Pengarah**
    Politeknik Sultan Mizan Zainal Abidin

14. **Pengarah**
    Politeknik Merlimau Melaka

15. **Pengarah**
    Politeknik Sultan Azlan Shah

16. **Pengarah**
    Politeknik Tuanku Sultanah Bahiyah

17. **Pengarah**
    Politeknik Sultan Idris Shah

18. **Pengarah**
    Politeknik Tuanku Syed Sirajuddin

19. **Pengarah**
    Politeknik Muadzam Shah

20. **Pengarah**
    Politeknik Mukah

21. **Pengarah**
    Politeknik Balik Pulau

22. **Pengarah**
    Politeknik Jeli Kelantan

23. **Pengarah**
    Politeknik Nilai Negeri Sembilan

24. **Pengarah**
    Politeknik Banting Selangor

25. **Pengarah**
    Politeknik Mersing Johor

26. **Pengarah**
    Politeknik Hulu Terengganu

27. **Pengarah**
    Politeknik Sandakan Sabah

28. **Pengarah**
Politeknik METrO Kuala Lumpur

29. **Pengarah**
Politeknik METrO Kuantan

30. **Pengarah**
Politeknik METrO Johor Bahru

31. **Pengarah**
Politeknik METrO Betong Sarawak

32. **Pengarah**
Politeknik METrO Tasek Gelugor

33. **Pengarah**
Politeknik Tun Syed Nasir Syed Ismail

34. **Pengarah**
Politeknik Besut Terengganu

35. **Pengarah**
Politeknik Bagan Datuk

36. **Pengarah**
Politeknik Tawau Sabah

1. Pengarah
   Kolej Komuniti Arau
   Kementerian Pendidikan Tinggi
   Jalan BN, Tambun Tulang
   02600 Arau
   Perlis Indera Kayangan.

2. Pengarah
   Kolej Komuniti Bandar Darulaman
   Kementerian Pendidikan Tinggi
   No. 17 Bandar Darulaman Jaya
   06000 Jitra
   Kedah Darul Aman.

3. Pengarah
   Kolej Komuniti Jerai
   Kementerian Pendidikan Tinggi
   Lot. 4, Jalan Delima 1
   Taman Delima
   08800 Guar Chempedak
   Kedah Darul Aman

4. Pengarah
   Kolej Komuniti Bandar Baharu
   Kementerian Pendidikan Tinggi
   No. 1, Jalan Syariah
   34950 Bandar Baharu
   Kedah Darul Aman

5. Pengarah
   Langkawi Tourism Academy @
   Kolej Komuniti Langkawi
   Kementerian Pendidikan Tinggi
   Jalan Pantai Chenang
   Mukim Kedawang
   07000 Langkawi
   Kedah Darul Aman

6. Pengarah
   Kolej Komuniti Kulim
   Kementerian Pendidikan Tinggi
   No. 232, Jalan Kota Kenari
   09000 Kulim
   Kedah Darul Aman

7. Pengarah
   Kolej Komuniti Sungai Petani
   Kementerian Pendidikan Tinggi
   No. 77, Lengkok Cempaka 1
   Pusat Bandar Amanjaya
   08000 Sungai Petani
   Kedah Darul Aman

8. Pengarah
   Kolej Komuniti Baling
   Kementerian Pendidikan Tinggi
   Batu 42, Pulai
   09100 Baling
   Kedah Darul Aman

9. Pengarah
   Kolej Komuniti Padang Terap
   Kementerian Pendidikan Tinggi
   Lot 1529, Jalan Kuala Nerang,
   Taman Belimbing Indah
   06300 Kuala Nerang
   Kedah Darul Aman

10. Pengarah
    Kolej Komuniti Sik
    Kementerian Pendidikan Tinggi
    No. 28-A, Pusat Perniagaan
    Alamanda
    08200 Sik,
    Kedah Darul Aman

11. Pengarah
    Kolej Komuniti Kepala Batas
    Kementerian Pendidikan Tinggi
    No 87, Lorong Bertam Indah 1
    Taman Bertam Indah
    13200 Kepala Batas
    Pulau Pinang

12. Pengarah
    Kolej Komuniti Nibong Tebal
    Kementerian Pendidikan Tinggi
    No. 1,2,3,18,19 dan 20
    Jalan Tasek SS1
    Seberang Perai
    Pulau Pinang

13. Pengarah
Kolej Komuniti Bukit Mertajam
Kementerian Pendidikan Tinggi
No.2 Jalan Koperasi Taman
Koperasi Guru
Jalan Tanah Liat
14000 Bukit Mertajam
Pulau Pinang

14. Pengarah
Kolej Komuniti Bayan Baru
Kementerian Pendidikan Tinggi
No 2, Persiaran Paya Terubong 1,
11900 Bayan Lepas
Pulau Pinang

15. Pengarah
Kolej Komuniti Tasek Gelugor
Kementerian Pendidikan Tinggi
No. 1660, Jalan Teluk Air Tawar
Taman Teluk Air Tawar
13050 Butterworth
Pulau Pinang

16. Pengarah
Kolej Komuniti Seberang Jaya
Kementerian Pendidikan Tinggi
Lot PT2811-PT2822,
Jalan Desa Pauh 1,
Taman Desa Pauh, Perai
Pulau Pinang

17. Pengarah
Kolej Komuniti Chenderoh
Kementerian Pendidikan Tinggi
Lot 43, Jalan Industri MIEL 2
Kawasan Perindustrian IKS
33000 Kuala Kangsar
Perak Darul Ridzuan

18. Pengarah
Kolej Komuniti Kuala Kangsar
Kementerian Pendidikan Tinggi
No. 60-62, Bangunan MPKK
Jalan Dato Maharaja Lela
33000 Kuala Kangsar
Perak Darul Ridzuan

19. Pengarah
Kolej Komuniti Gerik
Kementerian Pendidikan Tinggi
Bukit Nasah
33300 Gerik
Perak Darul Ridzuan

20. Pengarah
Kolej Komuniti Sungai Siput
Kementerian Pendidikan Tinggi
Kampung Sungai Sejuk
Peti Surat 390
31100 Sg. Siput Utara
Perak Darul Ridzuan

21. Pengarah
Kolej Komuniti Pasir Salak
Kementerian Pendidikan Tinggi
Jalan Lebuh Paduka, Changkat
Lada
36800 Kg. Gajah
Perak Darul Ridzuan

22. Pengarah
Kolej Komuniti Tapah
Kementerian Pendidikan Tinggi
35000 Tapah
Perak Darul Ridzuan

23. Pengarah
Kolej Komuniti Teluk Intan
Kementerian Pendidikan Tinggi
10-20 Persiaran Intanova
Taman Intanova
36000 Teluk Intan
Perak Darul Ridzuan

24. Pengarah
Kolej Komuniti Manjong
Kementerian Pendidikan Tinggi
Lot. 31, Pusat Persiaran PM 2/2
Pusat Bandar Seri Manjung 2
32040 Manjung
Perak Darul Ridzuan.

25. Pengarah
Kolej Komuniti Taiping
Kementerian Pendidikan Tinggi
No. 25, Laluan Kamunting 3
Bandar Kamunting
36400 Kamunting
Perak Darul Ridzuan

26. Pengarah
Kolej Komuniti Batu Gajah
Kementerian Pendidikan Tinggi
Jalan Bandar Baharu 2
Pusat Bandar Baru
31000 Batu Gajah
Perak Darul Ridzuan

27. Pengarah
Kolej Komuniti Gopeng
Kementerian Pendidikan Tinggi
Peti Surat 11, Kompleks RTC
Perak
Km16, Jalan Gopeng
Kawasan Perindustrian Gopeng 2
31600 Gopeng
Perak Darul Ridzuan

28. Pengarah
Kolej Komuniti Bagan Serai
Kementerian Pendidikan Tinggi
No. 29, Jalan Syed Thauphy 2,
34300 Bagan Serai,
Perak Darul Ridzuan

29. Pengarah
Kolej Komuniti Bagan Datoh
Kementerian Pendidikan Tinggi
No. 40-51, Lorong Lagenda 2,
Medaniaga Lagenda
36400 Hutan Melintang
Perak Darul Ridzuan

30. Pengarah
Kolej Komuniti Sabak Bernam
Kementerian Pendidikan Tinggi
Jalan Raja Chulan
45200 Sabak Bernam
Selangor Darul Ehsan

31. Pengarah
Kolej Komuniti Tanjong Karang
Kementerian Pendidikan Tinggi
Pusat Bandar Tanjong Karang
45500 Tanjong Karang
Selangor Darul Ehsan

32. Pengarah
Kolej Komuniti Hulu Selangor
Kementerian Pendidikan Tinggi
No. 43 â€“ 57, Jalan Kelah 2
Taman Perniagaan Kelah
44300 Batang Kali
Selangor Darul Ehsan

33. Pengarah
Kolej Komuniti Selayang
Kementerian Pendidikan Tinggi
Jalan Pegawai
Km 16, Jalan Ipoh
68100 Batu Caves
Selangor Darul Ehsan

34. Pengarah
Kolej Komuniti Kuala Langat
Kementerian Pendidikan Tinggi
Jalan Ubi, Jugra
42700 Banting Kuala Langat
Selangor Darul Ehsan

35. Pengarah
Kolej Komuniti Klang
Kementerian Pendidikan Tinggi
No. 2680, Persiaran Tengku
Ampuan Rahimah
41200 Klang
Selangor Darul Ehsan

36. Pengarah
Kolej Komuniti Hulu Langat
Kementerian Pendidikan Tinggi
Jalan Prima Saujana 2/G
Taman Prima Saujana
43000 Hulu Langat,
Selangor Darul Ehsan

37. Pengarah
Kolej Komuniti Shah Alam
Kementerian Pendidikan Tinggi
Bangunan UMNO Shah Alam
Aras 10, Menara UBSA
Pusat Dagangan UMNO Shah Alam
Persiaran Damai, Seksyen 11
40100 Shah Alam
Selangor Darul Ehsan

38. Pengarah
Kolej Komuniti Ampang
Kementerian Pendidikan Tinggi
Lot PT 3890, Medan Bukit Indah 4,
Pusat Bandar Bukit Indah,
68000 Ampang
Selangor

39. Pengarah
Kolej Komuniti Kelana Jaya
Kementerian Pendidikan Tinggi
No. 2 3 ,3A, 5,6 dan 7
Jalan PJS 5/28B
Petaling Jaya Commercial City
46150 Petaling Jaya
Selangor Darul Ehsan

40. Pengarah
Kolej Komuniti Jempol
Kementerian Pendidikan Tinggi
Taman Industri Mahsan
KM 5, Jalan Mahsan
721000 Bahau
Negeri Sembilan Darul Khusus

41. Pengarah
Kolej Komuniti Jelebu
Kementerian Pendidikan Tinggi
Jalan Seperi
71600 Kuala Klawang
Negeri Sembilan Darul Khusus

42. Pengarah
Kolej Komuniti Tampin
Kementerian Pendidikan Tinggi
No 99-100, Jalan Impian Nuri 3
Taman Impian Jaya
73200 Gemencheh
Negeri Sembilan Darul Khusus

43. Pengarah
Kolej Komuniti Rembau
Kementerian Pendidikan Tinggi
Lot PT 2565-2579
Taman Pinggiran Pedas
71400 Pedas
Negeri Sembilan Darul Khusus

44. Pengarah
Kolej Komuniti Kuala Pilah
Kementerian Pendidikan Tinggi
No 33 - 41, Jalan 5,
Pusat Komersial Melang
72000 Kuala Pilah
Negeri Sembilan Darul Khusus

45. Pengarah
Kolej Komuniti Masjid Tanah
Kementerian Pendidikan Tinggi
Paya Rumput,
78300 Masjid Tanah Melaka

46. Pengarah
Kolej Komuniti Tangga Batu
Kementerian Pendidikan Tinggi
Lot 423, No. 11, Jalan SS1,
Taman Sayang Selasih
Kawasan Bandar Klebang,
75200 Melaka

47. Pengrah
Kolej Komuniti Selandar
Kementerian Pendidikan Tinggi
Jalan Batang Melaka
77500 Selandar
Melaka.

48. Pengarah
Kolej Komuniti Bukit Beruang
Kementerian Pendidikan Tinggi
No. 23, Jalan BBI 1
Taman Bukit Beruang Indah
Bukit Beruang
75450 Melaka

49. Pengarah
Kolej Komuniti Kota Melaka
Kementerian Pendidikan Tinggi
No. 5, Kompleks Kesidang
Jalan Tun Perak
Bacang
75300 Melaka

50. Pengarah
Kolej Komuniti Jasin
Kementerian Pendidikan Tinggi
Km 24, Taman IKS Merlimau
Jalan Muar
77300 Merlimau, Melaka

51. Pengarah
Kolej Komuniti Ledang
Kementerian Pendidikan Tinggi
Km 5,Jalan Payamas
84900 Tangkak
Johor Darul Takzim

52. Pengarah
Kolej Komuniti Pagoh
Kementerian Pendidikan Tinggi
No. 1,2,3,5,6
Jalan Pagoh Jaya 1/5
Taman Pagoh Jaya
84500 Muar
Johor Darul Takzim

53. Pengarah
Kolej Komuniti Muar
Kementerian Pendidikan Tinggi
No. 27, 29, 31, 33, 35, 37, 39
Pusat Perniagaan Sulaiman
Jalan Sulaiman
84000 Muar
Johor Darul Takzim

54. Pengarah
Kolej Komuniti Segamat
Kementerian Pendidikan Tinggi
No. 24-34 Jln. Putra 1/1
Bandar Putra
85000 Segamat
Johor Darul Takzim

55. Pengarah
Kolej Komuniti Segamat 2
Kementerian Pendidikan Tinggi
Km 4, Jalan Jementah
85100 Batu Anam, Segamat
Johor Darul Takzim

56. Pengarah
Kolej Komuniti Bandar Penawar
Kementerian Pendidikan Tinggi
Jalan Ungku Abdul Aziz
Bandar Penawar
81907 Kota Tinggi
Johor Darul Takzim

57. Pengarah
Kolej Komuniti Bandar Tenggara
Kementerian Pendidikan Tinggi
65-67 Jalan Anggerik 1/1
Taman Anggerik Tenggara
81440 Bandar Tenggara
Johor Darul Takzim

58. Pengarah
Kolej Komuniti Pasir Gudang
Kementerian Pendidikan Tinggi
No. 61, Jalan Kijang
Taman Scientex
81700 Pasir Gudang
Johor Darul Takzim

59. Pengarah
Kolej Komuniti Tanjung Piai
Kementerian Pendidikan Tinggi
No 45-47, Jalan Delima
Pusat Perdagangan Pantai
82000 Pontian
Johor Darul Takzim

60. Pengarah
Kolej Komuniti Kota Tinggi
Kementerian Pendidikan Tinggi
Lot 549, No. 1A, Jalan Abdullah
81900 Kota Tinggi
Johor Darul Takzim

61. Pengarah
Kolej Komuniti Batu Pahat
Kementerian Pendidikan Tinggi
Jalan EH1
Evergreen Height
83000 Batu Pahat
Johor Darul Takzim

62. Pengarah
Kolej Komuniti Kluang
Kementerian Pendidikan Tinggi
Jalan Tujuh Taman Delima
86000 Kluang
Johor Darul Takzim

63. Pengarah
Kolej Komuniti Rompin
Kementerian Pendidikan Tinggi
Km 5, Jalan Rompin Pekan
26800 Kuala Rompin
Pahang Darul Makmur

64. Pengarah
Kolej Komuniti Bentong
Kementerian Pendidikan Tinggi
Km 6 Karak Setia
28600 Karak
Pahang Darul Makmur

65. Pengarah
Kolej Komuniti Raub
Kementerian Pendidikan Tinggi
Lot 11-17, Taman Amalina Lestari
Simpang Kallang
27600 Raub
Pahang Darul Makmur

66. Pengarah
Kolej Komuniti Temerloh
Kementerian Pendidikan Tinggi
By Pass, Batu 2,
Jalan Temerloh, Kg. Chatin Ulu,
28400 Temerloh
Pahang Darul Makmur

67. Pengarah
Kolej Komuniti Lipis
Kementerian Pendidikan Tinggi
Aras Bawah Bangunan UMNO
Bahagian Lipis,
Jln Bukit Bius
27200 Kuala Lipis
Pahang

68. Pengarah
Kolej Komuniti Bera
Kementerian Pendidikan Tinggi
No. 1, Jalan Bera Jaya 2
Taman Bera Jaya
28300 Triang
Pahang Darul Makmur

69. Pengarah
Kolej Komuniti Kuantan
Kementerian Pendidikan Tinggi
B 24, Jalan IM 3/13 Bandar Indera
Mahkota
25200 Kuantan
Pahang Darul Makmur

70. Pengarah
Kolej Komuniti Paya Besar
Kementerian Pendidikan Tinggi
26300 Gambang
Pahang Darul Makmur

71. Pengarah
Kolej Komuniti Pekan
Kementerian Pendidikan Tinggi
Lot 1032, Jalan Pekan-Kuantan
Peramu Jaya,
26600 Pekan, Pahang

72. Pengarah
Kolej Komuniti Jerantut
Kementerian Pendidikan Tinggi
Taman Wawasan
Jalan Jerantut-Temerloh
27000 Jerantut,
Pahang Darul Makmur

73. Pengarah
Cawangan Maran
Kementerian Pendidikan Tinggi
Lot.29-35 Jalan Dagangan 2/2,
Blok Dagangan 2
26500 Maran,
Pahang

74. Pengarah
Kolej Komuniti Kuala Terengganu
Kementerian Pendidikan Tinggi
Jalan Tengku Ampuan Mariam
20200 Kuala Terengganu
Terengganu Darul Iman

75. Pengarah
Kolej Komuniti Kemaman
Kementerian Pendidikan Tinggi
K148E, Bangunan Majlis
Perbandaran
Kemaman, Kijal,
Terengganu Darul Iman

76. Pengarah
Kolej Komuniti Besut
Kementerian Pendidikan Tinggi
Tingkat 2, Bangunan Baitul
Ehsan,
Jalan Besar,22000 Jerteh,
Terengganu

77. Pengarah
Kolej Komuniti Pasir Mas
Kementerian Pendidikan Tinggi
Lot PT283, Kg. Pengkalan Batu
Jalan Pasir Pekan
17000 Pasir Mas
Kelantan Darul Naim

78. Pengarah
Kolej Komuniti Jeli
Kementerian Pendidikan Tinggi
Lot PT2098, Bandar Baru,
Bukit Bunga
17000 Tanah Merah
Kelantan Darul Naim

79. Pengarah
Kolej Komuniti Kok Lanas
Kementerian Pendidikan Tinggi
Kok Lanas
16450 Ketereh
Kelantan Darul Naim

80. Pengarah
Cawangan Tanah Merah
D/A Kolej Komuniti Jeli
Kementerian Pendidikan Tinggi
Lot PT2098, Bandar Baru,
Bukit Bunga
17000 Tanah Merah
Kelantan Darul Naim

81. Pengarah
Kolej Komuniti Kuching
Kementerian Pendidikan Tinggi
Lot 3563, Sego Centre
Jalan Sultan Tengah
Petra Jaya
93050 Kuching
Sarawak

Atau

Kolej Komuniti Kuching
Peti Surat A1197
93824 Kuching

82. Pengarah
Kolej Komuniti Mas Gading
Kementerian Pendidikan Tinggi
Lot 742-750, Of Parent
Lot 726, Bau Town Districk
94000 Bau
Sarawak

Atau

Kolej Komuniti Mas Gading
Peti Surat 211
Pejabat Pos Bau
94007 Bau
Sarawak

83. Pengarah
Kolej Komuniti Miri
Kementerian Pendidikan Tinggi
Lot 5600, Jalan Permy Jaya
Pusat Bandar Permy Jaya
98000 Miri
Sarawak

84. Pengarah
Kolej Komuniti Betong
Kementerian Pendidikan Tinggi
Lot 625-629,
Betong Town District
Jalan Datuk Basil Temenggong
95700 Betong
Sarawak

85. Pengarah
Kolej Komuniti Santubong
Kementerian Pendidikan Tinggi
Peti Surat (P) 201
Jalan Tun Abdul Razak
93457 Kuching
Sarawak

86. Pengarah
Kolej Komuniti Sarikei
Kementerian Pendidikan Tinggi
No. 7&8, Lot 249
Blok 36, Jalan Central
96100 Sarikei
Sarawak.

87. Pengarah
Kolej Komuniti Tawau
Kementerian Pendidikan Tinggi
Batu 4 Jalan Apas
Perdana Square Commercial
Centre
Peti Surat 61607
91000 Tawau
Sabah

88. Pengarah
Kolej Komuniti Semporna
Kementerian Pendidikan Tinggi
Lot 2-6, Bandar Baru Semporna 2,
Jalan Hospital
Peti Surat 402,
91308 Semporna,
Sabah

89. Pengarah
Kolej Komuniti Lahad Datu
Kementerian Pendidikan Tinggi
MDLD 7211, Lot 246-256
Bandar Sri Perdana, Jalan Silam
91110 Lahad Datu
Sabah

90. Pengarah
Kolej Komuniti Sandakan
Kementerian Pendidikan Tinggi
Blok B4-B5, Bandar Labuk Jaya
Mile 7, Labuk Road
90000, Sandakan
Sabah

91. Pengarah
Kolej Komuniti Tambunan
Kementerian Pendidikan Tinggi
D/A Tambunan Village Resort
Centre & Resort Kolam
Tandarason, Tambunan,
Sabah

92. Pengarah
Kolej Komuniti Beaufort
Kementerian Pendidikan Tinggi
Jalan Melalugus,
89807 Beaufort,
Sabah.

93. Pengarah
Kolej Komuniti Penampang
Kementerian Pendidikan Tinggi
Lot 5-8, Blok B
Wisma Malakun
Jalan Ramayah-Putatan
89500 Penampang

94. Pengarah
Kolej Komuniti Kota Marudu
Kementerian Pendidikan Tinggi
Blok B1, 2 Blok C 1-6
Jaya Industrial Centre
Kota Marudu,
Sabah

HALA TUJU STRATEGIK
POLITEKNIK DAN KOLEJ KOMUNITI

VISI

Menjadi Peneraju Institusi TVET yang Unggul

To be the Leading-Edge TVET Institution

MISI

1. Menyediakan akses yang meluas kepada program TVET berkualiti dan diiktiraf.
   To provide wide access to quality and recognised TVET programmes.

2. Memperkasa komuniti melalui pembelajaran sepanjang hayat.
   To empower communities through lifelong learning.

3. Melahirkan graduan holistik, berciri keusahawanan dan seimbang.
   To develop holistic, entrepreneurial and balanced graduates.

4. Memanfaatkan sepenuhnya perkongsian pintar dengan pihak berkepentingan.
   To capitalise on smart partnership with stakeholders.

MATLAMAT ORGANISASI

1. Menghasilkan graduan TVET yang diyakini dan menjadi rebutan majikan untuk menyumbang kepada pembangunan ekonomi negara.

2. Mengukuhkan kerelevanan dan keresponsifan program pengajian di institusi untuk memenuhi keperluan industri.

3. Melahirkan warga sejagat ke arah keharmonian serta kemakmuran global.

MATLAMAT PENDIDIKAN

Menghasilkan graduan TVET yang holistik dan kompeten serta berkemampuan menyumbang kepada pembangunan negara.

To produce holistic and competent TVET graduates, capable of contributing to national development.

KETUA PENGARAH
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI
Galeria PjH, Aras 5, Jalan P4W
Persiaran Perdana, Presint 4
62100 W.P. PUTRAJAYA
MALAYSIA

Tel : 03-8891 9000
Faks : 03-8891 9301

Ruj. Kami : JPPKK/PPI/700-10/1 Jld.2 (19)
Tarikh : 15 Januari 2025

DR. NORASIAH BT MUHAMMAD

Melalui dan salinan,
Pengarah
Politeknik Sultan Salahuddin Abdul Aziz Shah

YBrs. Dr.,

SURAT TAWARAN TVET APPLIED RESEARCH GRANT SCHEME (T-ARGS) TAHUN 2025

Dengan segala hormatnya merujuk perkara di atas.

2. Sukacita dimaklumkan bahawa Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) telah bersetuju untuk menawarkan satu (1) projek penyelidikan gunaan di bawah TVET Applied Research Grant Scheme (T-ARGS) kepada penyelidik seperti butiran berikut:-

No. Rujukan	**T-ARGS/2025/BK04/00410**
Tajuk Projek	**Development of the Automated Solar Drain Cleaning System**
Nama Ketua Penyelidik	**Dr. Norasiah Bt Muhammad (Politeknik Sultan Salahuddin Abdul Aziz Shah)**
Ahli Penyelidik	**Dr. Khairul Nizam Bin Kassim (Politeknik Sultan Salahuddin Abdul Aziz Shah)** **Roslan Bin Kamaruddin (Politeknik Sultan Salahuddin Abdul Aziz Shah)** **Asmira Bin Ashari (Politeknik Sultan Salahuddin Abdul Aziz Shah)** **Mohd Sharizan Bin Mohd Sharif (Politeknik Sultan Salahuddin Abdul Aziz Shah)** **Ts. Dr. Muhd Faiz Bin Mat @ Muhammad (Universiti Teknologi MARA, Shah Alam)**
Kos Projek	**RM 79,870.00**
Tarikh Mula Projek	**10 Februari 2025**

Tarikh Tamat Projek	**9 Februari 2026**
Tempoh Projek	**12 Bulan**

3. Untuk makluman pihak YBrs. Dr., kelulusan peruntukan dana T-ARGS seperti dinyatakan di perenggan 2 di atas adalah tertakluk kepada syarat-syarat berikut:

(i) Penyelidik yang menerima geran T-ARGS ini tidak dibenarkan menerima sebarang dana daripada kementerian / agensi lain bagi tajuk projek yang sama.

(ii) Penyelidik dikehendaki mengemukakan laporan kewangan dan kemajuan pelaksanaan projek kepada Pusat Penyelidikan dan Inovasi, Jabatan Pendidikan Politeknik dan Kolej Komuniti melalui sistem tvetGRANTs di pautan https://app.mypolycc.edu.my/tvetgrants/ . Berikut adalah garis masa dan butiran laporan berkaitan:

Perkara	**Tarikh**
a) Laporan Kewangan & Kemajuan Projek I	16 Mei 2025
b) Laporan Kewangan & Kemajuan Projek II	25 Julai 2025
c) Laporan Kewangan & Kemajuan Projek III	3 Oktober 2025
d) Laporan Kewangan & Kemajuan Projek IV	5 Januari 2026
e) Laporan Akhir dan Video Prototaip	6 April 2026
Pemantauan Projek Bersemuka / *Online*	
a) Pembentangan Prestasi Projek 1	1-31 Julai 2025
b) Pembentangan Prestasi Projek 2	1-30 Januari 2026

(iii) Penyelidik perlu menghantar Laporan Akhir yang lengkap mengikut format yang telah ditetapkan.

(iv) Mematuhi syarat, rujukan seperti di Lampiran T-ARGS/A2.

4. Jika mana-mana projek gagal mematuhi syarat seperti di perenggan 3 di atas, kelulusan peruntukan projek akan ditarik balik. Sehubungan dengan itu, bersama-sama ini dilampirkan Surat Setuju Terima (T-ARGS/A1) dan Akujanji Projek T-ARGS (T-ARGS/A2) untuk dilengkapkan dan dikembalikan kepada PPI, JPPKK **selewat-lewatnya pada 7 Februari 2025** ke alamat berikut:

Pengarah
Pusat Penyelidikan dan Inovasi
Aras 7, Galeria PjH, Jalan P4W,
Persiaran Perdana, Presint 4, 62100 W.P. Putrajaya
(u.p: Urus setia T-ARGS)

5. Tawaran projek ini akan **terbatal** sekiranya;

   (a) Pasukan penyelidik tidak mengembalikan Surat Setuju Terima dan Aku Janji Projek dalam tempoh masa yang telah ditetapkan; atau
   (b) Pasukan penyelidik tidak bersetuju menerima tawaran projek yang ditawarkan.

Segala kerjasama dan perhatian pihak YBrs. Dr. amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DATO' DR. HAJI MOHD ZAHARI BIN ISMAIL)
Ketua Pengarah Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Tinggi

s.k

1. Timbalan Ketua Pengarah (Perancangan)
   Jabatan Pendidikan Politeknik dan Kolej Komuniti

2. Pengarah
   Pusat Penyelidikan dan Inovasi
   Jabatan Pendidikan Politeknik dan Kolej Komuniti

SENARAI PENERIMA TVETGRANTS 2025

BIL.	NAMA PENSYARAH	JABATAN	NAMA GERAN	NILAI	TEMPOH	TAJUK
	Dr. Norasiah binti Muhammad (Ketua) Dr. Khairul Nizam bin Kassim Roslan bin Kamaruddin Asmira bin Ashari Mohd Sharizan bin Mohd Shariff	JKM	T-ARGS, JPPKK, KPT	RM79,870	12 Bulan (10 Feb 2025 – 9 Feb 2026)	Development of Automated Solar Drain Cleaning System
	Dr. Mohd Elias bin Daud (Ketua) Asri bin Mat Desa Muhammad Faiz bin Abdullah Teoh Thean Hin Haslinda binti Abu Saman Fairuz Sofia binti Kaharuddin	JKM	T-AIGS, JPPKK, KPT	RM 46, 120	12 Bulan (10 Feb 2025 – 9 Feb 2026)	Next-Generation Hydraulic Foot Jack for People with Disabilities
	Zetty Rohaiza binti Mohd Sahak (Ketua) Ahmad Fakaruddin Mohd Fauzi Somchai A/L Enoi Wan Nurhazlim binti Wan Mustafa Tengku Nur Syarah Bariah binti Tengku Mohd Yazit Ts. Mohd Firdauz bin Mhd Radzi	JKM	T-ACGS, JPPKK, KPT	RM60,000	12 Bulan (10 Feb 2025 – 9 Feb 2026)	EZ Lemang Cookware

Penerangan Akronim:
TARGS: TVET Applied Research Grant Scheme
TAIGS: TVET Applied Innovation Grant Scheme
TACGS: TVET Applied Commercialization Grant Scheme

BIL.	NAMA PENSYARAH	JABATAN	NAMA GERAN	NILAI	TEMPOH	TAJUK
	Mariana binti Rosdi (Ketua) Nor Rofizah binti Abd. Mutalib Rohana binti Sahak Dr. Marlina binti Ramli	JKE	T-ARGS, JPPKK, KPT	RM 30,000	12 Bulan (10 Feb 2025 – 9 Feb 2026)	The Impact & Effectiveness Analysis of Mentoring Electronic Repair With Apps
	Ts. Suryani binti Ilyas (Ketua) Dr. Nurul Maisarah Kamaruddin Hainani binti Chik Hazlina binti Harumaini	JKE	T-AIGS, JPPKK, KPT	RM65,000	12 Bulan (10 Feb 2025 – 9 Feb 2026)	Implementation of ECG Deep Cleaning with AI Driven in Predictive Maintenance Towards Sustainable Smart Manufacturing in Industry 5.0
	Nor Aisah binti Abu Samah (Ketua) Haslina binti Abdullah Nor Azmin Mohd Salleh Siti Noryanie binti Yusoff Arifah Mursyiddah Illiashaq	JPA	T-ACGS, JPPKK, KPT	RM59,800	12 Bulan (10 Feb 2025 – 9 Feb 2026)	Flip Card Maqra'
			JUMLAH KESELURUHAN	RM340,790		

SENARAI PENERIMA DANA KAJIAN SOSIAL JPPKK, KPT 2025

BIL.	NAMA PENSYARAH	JABATAN	NILAI	TEMPOH	TAJUK
	Ts. Dr. Hjh. Wan Rosemehah binti Wan Omar (Ketua) Ts. Dr. Hj. Zunuwanas Mohamad Hainani binti Chik	**JKE**	**RM40,200**	**9 Bulan** (1 Mac – 1 Dis. 2025)	**Pembangunan Garis Panduan Penggunaan Teknologi Pendidikan Terkini Dalam Kalangan Anak Orang Asli**
	Nor Zarini binti Ismail (Ketua) Ts. Dr. Siti Asmiza binti Muzafar Muhapis bin A Hakim Md Alimi bin Yasinan@Jasman	**JKA**	**RM 44,087.50**	**9 Bulan** (1 Mac – 1 Dis. 2025)	**Pembangunan Sistem Penuaian Air Hujan (SPAH) Untuk Kelestarian Penjimatan Bil Air**
	Nor Aisah binti Abu Samah (Ketua) 'Arifah Mursyidah binti Illiashaq Haslina Abdullah@ Mohamed	**JPA**	**RM56,040.**	**9 Bulan** (1 Mac – 1 Dis. 2025)	**Penggunaan Flip Card Maqra'Al-Quran Fizikal dan Digital sebagai Bahan Instruksional Bidang Tahfiz bagi Meningkatkan Hafazan**
		JUMLAH	**RM140,327.50**		

LEMBAGA JURUTERA MALAYSIA
BOARD OF ENGINEERS MALAYSIA
TINGKAT 17, IBU PEJABAT JKR
KOMPLEKS KERJA RAYA MALAYSIA
JALAN SULTAN SALAHUDDIN
50580 KUALA LUMPUR
MALAYSIA

CERTIFIED TO ISO 9001:2015
CERT NO. : QMS 00875

YANG DIPERTUA:
Datuk Wira Ir. Roslan bin Ismail

PENDAFTAR:
Ir. Dr. Megat Zuhairy bin Megat Tajuddin

SETIAUSAHA:
Ir. Hamzah bin Hashim

Our Ref. : BEM/ETAD/02-49
Date : 10 April 2025

DIRECTOR
Accreditation Division (Science and Medicine)
Malaysian Qualification Agency (MQA)
Mercu MQA
No. 3539, Jalan Teknokrat 7, Cyber 5
63000 Cyberjaya
SELANGOR DARUL EHSAN

Dear Sir,

ACCREDITATION RESULT FOR ENGINEERING PROGRAMMES AT POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

Please note the following in reference to the accreditation visits conducted on 27th and 28th August 2024.

2. On 20th March 2025, the Engineering Technology Accreditation Council (ETAC) approved the decision to accredit the following engineering programmes conducted by PSA:

Programme	Accredited (Graduate Year)	Branch	Condition
1. Diploma in Civil Engineering	2025, 2026, 2027, 2028, 2029 and 2030	Engineering	-
2. Diploma in Building Services Engineering	2025, 2026, 2027, 2028, 2029 and 2030	Engineering	-
3. Diploma in Electronic Engineering (Control)	2025, 2026, 2027, 2028, 2029 and 2030	Engineering	-
4. Diploma in Electronic Engineering (Communication)	2025, 2026, 2027, 2028, 2029 and 2030	Engineering	-
5. Diploma in Electronic Engineering (Medical)	2025, 2026, 2027, 2028, 2029 and 2030	Engineering	-
6. Diploma in Mechanical Engineering	2025, 2026, 2027, 2028, 2029 and 2030	Engineering	**INTERIM:** To report the closure of the concerns before 2028
7. Diploma in Mechanical Engineering (Packaging)	2025, 2026, 2027, 2028, 2029 and 2030	Engineering	**INTERIM:** To report the closure of the concerns before 2028

3. The Institutions of Higher Learning (IHL) shall act on the panels' observations endorsed by ETAC in APPENDIX 1 and other observations listed in the Evaluation Panel Report in APPENDIX D.

Our Ref. : BEM/ETAD/02-49
Date : 10 April 2025

ACCREDITATION RESULT FOR ENGINEERING PROGRAMMES AT POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

4. The IHL is reminded to address and close all conditions imposed on the programmes by ETAC within the stipulated timeframe. Failure to do so may result in ETAC withdrawing the accreditation of the programmes.

5. The above programme names shall be used on the actual scroll conferred to the graduates.

6. Kindly take note that IHL should make an application for programme accreditation as specified in Section 7.1 of the ETAC Standards to Malaysian Qualifications Agency (MQA) and ETAC –

i. For a current accredited programme, the IHL should apply for re-accreditation at least 6 months before the expiry date of the accreditation to avoid delay in graduates' registration with Board of Engineers Malaysia (BEM).
ii. A cut-off period for submission of application for programme accreditation by IHL is twelve (12) months after graduation of any cohort, if the graduates are to be included in the accreditation decision.

Thank you.

Yours sincerely,

(**Ir. Dr. MEGAT ZUHAIRY BIN MEGAT TAJUDDIN**)
Registrar
BOARD OF ENGINEERS MALAYSIA

c.c. **PENGARAH**
Politeknik Sultan Salahuddin Abdul Aziz Shah
Persiaran Usahawan, Seksyen U1
4050 Shah Alam
SELANGOR DARUL EHSAN

PENGARAH
Bahagian Governan dan Kecemerlangan
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Malaysia
Galeria PjH, Aras 3-7, Jalan P4W
Persiaran Perdana, Presint 4
62100 Putrajaya
WILAYAH PERSEKUTUAN PUTRAJAYA

TIMBALAN PENGARAH (PERANCANGAN)
Bahagian Pembangunan Modal Insan
Jabatan Perkhidmatan Awam (JPA)
Aras 6, Parcel C1, Kompleks C
Pusat Pentadbiran Kerajaan Persekutuan
62510 Putrajaya
WILAYAH PERSEKUTUAN PUTRAJAYA

Our Ref. : BEM/ETAD/02-49
Date : 10 April 2025

ACCREDITATION RESULT FOR ENGINEERING PROGRAMMES AT POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

PENGARAH
Bahagian Pengurusan Pembangunan Akademik
Jabatan Pengajian Tinggi (JPT)
Kementerian Pengajian Tinggi
Aras 4, No. 2, Menara 2 , Jalan P5/6, Presint 5
62200 Putrajaya
WILAYAH PERSEKUTUAN PUTRAJAYA

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

27th – 28th August 2024

ACCREDITATION SUMMARY REPORT

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA) – New Cycle Accreditation

1. **Diploma in Civil Engineering**
2. **Diploma in Building Services Engineering**
3. **Diploma in Electronic Engineering (Control)**
4. **Diploma in Electronic Engineering (Communication)**
5. **Diploma in Electronic Engineering (Medical)**
6. **Diploma in Mechanical Engineering**
7. **Diploma in Mechanical Engineering (Packaging)**

INTRODUCTION

Programmes background

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSSAAS/PSA) was the 8th established polytechnic under the Ministry of Education Malaysia. PSA, originally established as Politeknik Shah Alam, started its operation in 1997. The campus is situated at Persiaran Usahawan, Seksyen U1, 40150 Shah Alam, which is in the industrial area of Shah Alam. Beginning its administrative activities in January 1997, PSA recorded a total enrolment of 640 students until 2023. There are six (6) academic departments in PSA, consisting of the Mechanical Engineering Department (MED), Civil Engineering Department (CED), Electrical Engineering Department (EED), Commerce Department (CD), General Studies Department (GSD), and Mathematics, Science, and Computer Department (MSCD). PSA is a higher education institution formerly under the purview of JPPKK Malaysia before the institution changed and was placed under the authority of the Jabatan Perkhidmatan Awam (JPA) on 23 February 2018.

The previous ETAC accreditation visit was held in October 2019 and the programme was awarded a 6-year accreditation with interim for cohort graduating between 2019 and 2024. The interim condition was lifted having successful closure of the concerns in 2022. This new cycle accreditation visit on the 20th to 21st August 2024 was held to evaluate the above programmes.

GENERAL FINDINGS

The general findings of all panels can be summarised as follows:

1. The Programmes are on the Outcome-based Education approach.
2. The Programmes have been determined to have the breadth and depth of an Engineering Technician programme.
3. A Quality Management System is in place and Continual Quality Improvement is generally practiced.
4. The programme fulfilled the eight (8) qualifying requirements as stipulated in the ETAC Standard 2020.

SUMMARY FINDINGS FOR THE PROGRAMME

The summary of panels' findings for the programmes will be categorized under the headings of Strengths, Weaknesses, Major and/or Minor Concerns and Opportunities for Improvements (OFI). The detailed reports are appended to this summary.

1. Diploma in Civil Engineering	**STRENGTHS** **NIL** **WEAKNESSES** **NIL** **MAJOR CONCERN** **NIL** **MINOR CONCERN** **NIL** **OPPORTUNITIES FOR IMPROVEMENTS** **NIL**
Rebuttal	■ **No Change to Report** ☐ **Report Changed:**
2. Diploma in Building Services Engineering	**STRENGTHS** **NIL** **WEAKNESSES** **NIL** **MAJOR CONCERN** **NIL** **MINOR CONCERN** **NIL**

	OPPORTUNITIES FOR IMPROVEMENTS **NIL**
Rebuttal	■ **No Change to Report** ☐ **Report Changed:**
3. Diploma in Electronic Engineering (Control)	**STRENGTHS** **NIL** **WEAKNESSES** **NIL** **MAJOR CONCERN** **NIL** **MINOR CONCERN** **NIL** **OPPORTUNITIES FOR IMPROVEMENTS** 1. To improve the understanding of OBE on teaching staff.
Rebuttal	☐ **No Change to Report** ■ **Report Changed:** - **Criteria 6, pp D-30, D-35**: The Fire Alarm Panel in the Department of Electrical Engineering (JKE) building was not functioning. The repair work is approved under RP4, RMKe-12, the PSA must expedite the process to prevent any undesired incidents from occurring. **(Removed)**

4. Diploma in Electronic Engineering (Communication)	**STRENGTHS** **NIL** **WEAKNESSES** **NIL** **MAJOR CONCERN** **NIL** **MINOR CONCERN** **NIL** **OPPORTUNITIES FOR IMPROVEMENTS** **NIL**
Rebuttal	☐ **No Change to Report** ■ **Report Changed:** - **Criteria 6, pp D-29, D-35:** The Fire Alarm Panel in the Department of Electrical Engineering (JKE) building was not functioning. The repair work is approved under RP4, RMKe-12, the PSA must expedite the process to prevent any undesired incidents from occurring. **(Removed)**

5. Diploma in Electronic Engineering (Medical)	**STRENGTHS** **NIL** **WEAKNESSES** **NIL** **MAJOR CONCERN** **NIL** **MINOR CONCERN** **NIL** **OPPORTUNITIES FOR IMPROVEMENTS** **NIL**
Rebuttal	☐ **No Change to Report** ■ **Report Changed:** - **Criteria 6, pp D-28, D-41:** The Fire Alarm Panel in the Department of Electrical Engineering (JKE) building was not functioning. The repair work is approved under RP4, RMKe-12, the PSA must expedite the process to prevent any undesired incidents from occurring. **(Removed)**

6. Diploma in Mechanical Engineering	**STRENGTHS** **NIL** **WEAKNESSES** **NIL** **MAJOR CONCERN** **NIL** **MINOR CONCERN** **1. ACADEMIC CURRICULUM** a. The assessment rubrics do not reflect the mapped P07, P08, P011 and P012 which affect the true attainment of the POs. **OPPORTUNITIES FOR IMPROVEMENTS** **NIL**
Rebuttal	☐ **No Change to Report** ■ **Report Changed:** - **Criteria 6, pp D-30, D-37:** The Fire Alarm Panel in the department's building was not functioning. The repair work is approved under RP4, RMKe-12, the PSA must expedite the process to prevent any undesired incidents from occurring. **(Removed)**

7. Diploma in Mechanical Engineering (Packaging)	**STRENGTHS** **NIL** **WEAKNESSES** **NIL** **MAJOR CONCERN** **NIL** **MINOR CONCERN** **1. ACADEMIC CURRICULUM** a. The assessment rubrics do not reflect the mapped P07, P08, P011 and P012 which affect the true attainment of the POs. **OPPORTUNITIES FOR IMPROVEMENTS** **NIL**
Rebuttal	☐ **No Change to Report** ■ **Report Changed:** - **Criteria 2, pp D-11:** we removed the statement "Three lecturers from IPTA and one secondary school teacher being appointed as Industry Advisory Panel (not suitable)" from OFI, and only mentioned in the text. **(Removed)** - **Criteria 6, pp D-38**: we removed the statement "The Fire Alarm Panel in the department's building was not functioning. The repair work is approved under RP4, RMKe-12, the PSA must expedite the process to prevent any undesired incidents from occurring", and only mentioned in the text. **(Removed)** - EVALUATION PANEL ASSESSMENT REPORT SUMMARY**, pp D-45**: we removed the statement: a. MINOR CONCERN, 2. FACILITIES = "The Fire Alarm Panel in the department's building was not functioning. The repair work is approved under RP4, RMKe-12, the PSA must expedite the process to prevent any undesired incidents from occurring". We change to NIL. - **OFI**: "Three lecturers from IPTA and one secondary school teacher being appointed as Industry Advisory Panel (not suitable)". We change to NIL. **(Removed)**

Prepared by: Engineering Accreditation Department (EAD)

This is the final endorsed summary by the ETAC during the ETAC No. 3/2024-2025 (ADM) on 20th March 2025

RINGKASAN PERAKUAN DOKUMEN AKADEMIK
MESYUARAT JAWATANKUASA AKREDITASI BILANGAN 4 TAHUN 2025
AGENSI KELAYAKAN MALAYSIA
TARIKH: 29 APRIL 2025 (SELASA)

BIDANG SAINS
(SUBBIDANG KEJURUTERAAN DAN TEKNOLOGI)

BIL.	NAMA PROGRAM
TOLAK AKREDITASI PENUH	
1.	*Diploma in Manufacturing Engineering (Tool and Design)* (MQA/FA 15540) Kolej Universiti TATI (University College TATI) (UC TATI)
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203.	Diploma Teknologi Pemesinan Industri (MQA/FA 14506-01) Kolej Vokasional Seri Iskandar
204.	Diploma Teknologi Pemesinan Industri (MQA/FA 14460-01) Kolej Vokasional Setapak
205.	Diploma Teknologi Komputeran (MQA/FA 9824-01) Kolej Vokasional Shah Alam
206.	Diploma Teknologi Komputeran (MQA/FA 9831-01) Kolej Vokasional Kuala Selangor
207.	Diploma Teknologi Komputeran (MQA/FA 9843-01) Kolej Vokasional Sepang
208.	Diploma Teknologi Komputeran (MQA/FA 9926-01) Kolej Vokasional Datuk Seri Abu Zahar Isnin
209.	Diploma Teknologi Komputeran (MQA/FA 9949-01) Kolej Vokasional Perdagangan
210.	Diploma Teknologi Komputeran (MQA/FA 9976-01) Kolej Vokasional Balik Pulau

211.	Diploma Teknologi Komputeran (MQA/FA 9956-01) Kolej Vokasional Kulim
212.	Diploma Teknologi Komputeran (MQA/FA 9962-01) Kolej Vokasional Sungai Petani 1
213.	Diploma Teknologi Komputeran (MQA/FA 9981-01) Kolej Vokasional Gerik
214.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13177-01) Politeknik Kota Kinabalu
215.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13191-01) Politeknik Kuala Terengganu
216.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13187-01) Politeknik Seberang Perai
217.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13161-01) Politeknik Sultan Abdul Halim Mu'adzam Shah
218.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13199-01) Politeknik Sultan Azlan Shah
219.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13180-01) Politeknik Sultan Salahuddin Abdul Aziz Shah
220.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13202-01) Politeknik Tuanku Sultanah Bahiyah
221.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13208-01) Politeknik Tuanku Syed Sirajuddin
222.	Diploma Kejuruteraan Elektronik (Komunikasi) (MQA/FA 13154-01) Politeknik Ungku Omar
223.	Diploma Kejuruteraan Mekatronik (MQA/FA 13216-01) Politeknik Ungku Omar
224.	Diploma Kejuruteraan Mekatronik (MQA/FA 13222-01) Politeknik Sultan Abdul Halim Mu'adzam Shah
225.	Diploma Kejuruteraan Mekatronik (MQA/FA 13237-01) Politeknik Kota Kinabalu

226.	Diploma Kejuruteraan Mekatronik (MQA/FA 13259-01) Politeknik Sultan Azlan Shah
227.	Diploma Kejuruteraan Mekatronik (MQA/FA 13263-01) Politeknik Tuanku Sultanah Bahiyah
228.	Diploma Kejuruteraan Mekanikal (MQA/FA 13155-01) Politeknik Ungku Omar
229.	Diploma Kejuruteraan Mekanikal (MQA/FA 13178-01) Politeknik Kota Kinabalu
230.	Diploma Kejuruteraan Mekanikal (MQA/FA 13181-01) Politeknik Sultan Salahuddin Abdul Aziz Shah
231.	Diploma Kejuruteraan Mekanikal (MQA/FA 13186-01) Politeknik Seberang Perai
232.	Diploma Kejuruteraan Mekanikal (MQA/FA 13200-01) Politeknik Sultan Azlan Shah
233.	Diploma Kejuruteraan Mekanikal (MQA/FA 13203-01) Politeknik Tuanku Sultanah Bahiyah
234.	Diploma Kejuruteraan Mekanikal (MQA/FA 13209-01) Politeknik Tuanku Syed Sirajuddin
235.	Diploma Kejuruteraan Mekanikal (Automotif) (MQA/FA 13214-01) Politeknik Ungku Omar
236.	Diploma Kejuruteraan Mekanikal (Automotif) (MQA/FA 13257-01) Politeknik Sultan Azlan Shah
237.	Diploma Kejuruteraan Mekanikal (Automasi) (MQA/FA 13268-01) Politeknik Muadzam Shah
238.	Diploma Teknologi Pemprosesan Kayu dan Kemasan (MQA/FA 9854-01) Kolej Vokasional Muadzam Shah
239.	Diploma Teknologi Pemprosesan Kayu dan Kemasan (MQA/FA 10000-01) Kolej Vokasional Slim River
240.	Diploma Teknologi Pemprosesan Kayu dan Kemasan (MQA/FA 15244-01) Kolej Vokasional Batu Pahat

241.	Diploma Teknologi Kimpalan (MQA/FA 13278-01) Kolej Vokasional Shah Alam
242.	Diploma Teknologi Kimpalan (MQA/FA 13606-01) Kolej Vokasional Slim River
243.	Diploma Teknologi Maklumat (MQA/FA 9910-01) Kolej Vokasional Miri
244.	Diploma Teknologi Maklumat (MQA/FA 9888-01) Kolej Vokasional Besut
245.	Diploma Teknologi Maklumat (MQA/FA 9844-01) Kolej Vokasional Sepang
LULUS AKREDITASI SEMENTARA	
1.	*Doctor of Philosophy* (MQA/PA 18346) Universiti HELP
2.	*Master of Information Technology* (MQA/PA 18364) Kolej Universiti i-CATS
3.	**Nama Dimohon:** *Bachelor of Information Technology (Honours)* **Nama Diperakukan:** *Bachelor in Information Technology (Honours)* (MQA/PA 18253) City University Kampus Johor Bahru
4.	*Master in Information Technology Management (*MQA/PA 18365) Kolej Universiti i-CATS
5.	*Doctor of Philosophy in Engineering* (MQA/PA 18367) Kolej Universiti i-CATS
6.	*Master of Applied Artificial Intelligence* (MQA/PA 18342) UNITAR International University
7.	**Nama Dimohon:** *Diploma in Occupational Health and Safety* **Nama Diperakukan:** *Diploma in Occupational Safety and Health* (MQA/PA 18332) AIMST University

8.	*Bachelor of Electrical and Electronics Technology (Honours)* (MQA/PA 18267) Kolej Universiti Antarabangsa Spektrum
9.	Diploma Tenaga Boleh Baharu (MQA/PA 18043) Kolej Geomatika Keningau, Sabah
10.	*Master in Information Technology Management* (MQA/PA 18365) Kolej Universiti i-CATS
TANGGUH	
AKREDITASI PENUH	
	-
AKREDITASI SEMENTARA	
	-

SIJIL APACC GOLD

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Building Block C. Department of Education Complex
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Plaque of Recognition

for

APACC Accreditation

Gold Award

March 11, 2014-March 10-2018

is hereby given to

Politeknik Sultan Salahuddin Abdul Aziz Shah
Shah Alam, Selangor, Malaysia

Dr. Mohammad Naim Yaakub
President, APACC

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SIJIL

SIRIM QAS International Sdn. Bhd. dengan ini mengesahkan bahawa

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
PERSIARAN USAHAWAN, SEKSYEN U1
40150 SHAH ALAM
SELANGOR DARUL EHSAN
MALAYSIA

telah melaksanakan *Educational Organizations Management System* yang menepati

ISO 21001 : 2018
Educational organizations – Management Systems for educational organizations – Requirements with guidance for use

Skop Pensijilan

PEMBERIAN PERKHIDMATAN PENDIDIKAN DALAM BIDANG KEJURUTERAAN DAN PERDAGANGAN DI PERINGKAT IJAZAH SARJANA MUDA, DIPLOMA DAN SIJIL.

Tarikh dikeluarkan	:	**07 November 2022**
Tarikh asal pensijilan	:	**07 November 2022**
Tarikh luput	:	**06 November 2025**
No. pensijilan	:	**EOMS 00120**

Nur Fadhilah binti Muhammad
Ketua Pegawai Eksekutif
SIRIM QAS International Sdn. Bhd.

SIRIM QAS INTERNATIONAL SDN. BHD.
(No. Syarikat 410334 - X)
1, Persiaran Dato' Menteri
Seksyen 2, Peti Surat 7035
40700 Shah Alam
Selangor Darul Ehsan
MALAYSIA

Tel : 60-3-5544 6404
Faks : 60-3-5544 6787

http://www.sirim-qas.com.my
http://www.malaysiancertified.com.my

Penganugerahan sijil ini tertakluk kepada peraturan-peraturan dan syarat-syarat seperti termyata dalam Perjanjian Pensijilan.

Lloyd's Register

Current Issue Date: 4 November 2020
Expiry Date: 3 November 2023
Certificate Identity Number: 10304428

Original approval(s):
ISO 45001 - 4 November 2020

Certificate of Approval

This is to certify that the Management System of:

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Persiaran Usahawan Seksyen U1, 40150 SHAH ALAM, Selangor, Malaysia

has been approved by Lloyd's Register to the following standards:

ISO 45001:2018

Approval Number(s): ISO 45001 – 00027608

This certificate forms part of the approval identified by approval number: 00027608

The scope of this approval is applicable to:

Provision of tertiary education programs (Certificate, Diploma and Bachelor Degree) as per higher education ministry guidelines.

Luis Cunha

Area Operations Manager - SAMEA

Issued by: Lloyd's Register of Shipping (M) Bhd

for and on behalf of: Lloyd's Register Quality Assurance Limited

UKAS MANAGEMENT SYSTEMS
001

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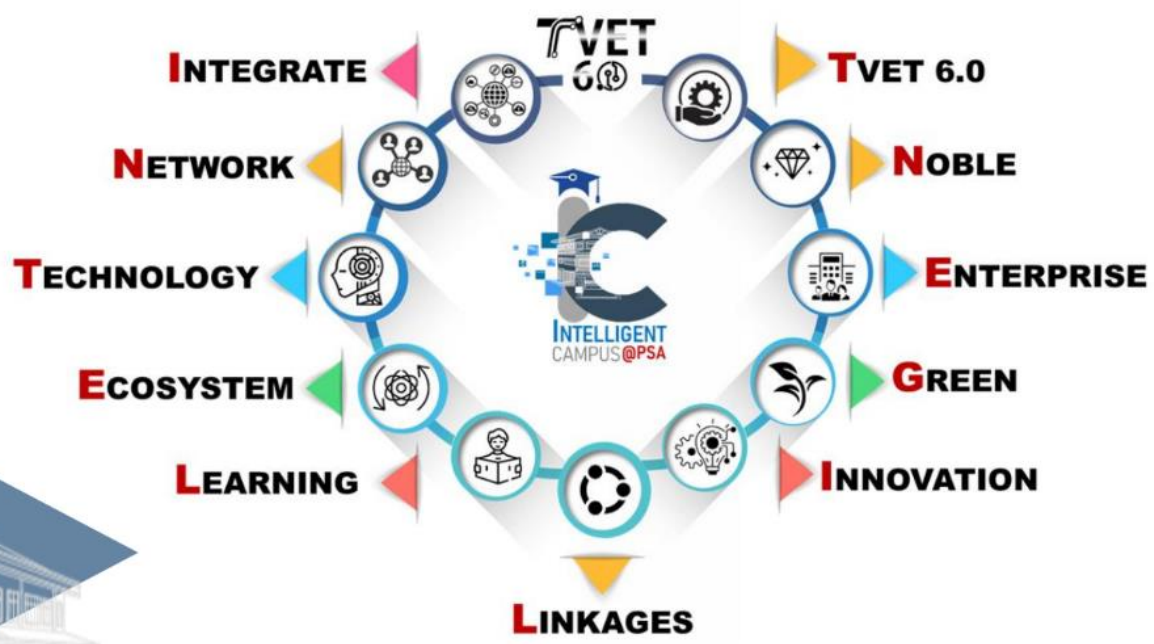
Intelligent Campus

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Pelan STRATEGIK
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
2021-2025



PSA mencipta nilai dengan sinergi sistem pengurusan bersepadu, rangkaian digital dan teknologi baharu dalam ekosistem manusia untuk mempertingkatkan pembelajaran pelbagai hala, jalinan strategik, inovasi berkesan, persekitaran hijau yang mampan dan minda berdaya usaha ke arah menjadi institusi TVET 6.0 yang disegani.

Appendix G1-1j

JABATAN PEMBANGUNAN KEMAHIRAN
DEPARTMENT OF SKILLS DEVELOPMENT

SIJIL PENTAULIAHAN
CERTIFICATE OF ACCREDITATION

Bahawa dengan ini diperakui:

POLITEKNIK SHAH ALAM
PERSIARAN USAHAWAN, SEKSYEN U1
40150 SHAH ALAM
SELANGOR

NAMA SYARIKAT PEMILIK : KEMENTERIAN PENGAJIAN TINGGI

KOD PUSAT BERTAULIAH : K21001

telah ditauliahkan oleh Jabatan Pembangunan Kemahiran untuk menawar, mentadbir dan mengekalkan mutu Sistem Persijilan Kemahiran Malaysia bagi program:

Kategori Pentauliahan	Kod Program	Nama Program	CU	
			Teras	Elektif
PERSIJILAN PROGRAM PENUH	MC-080-3:2013	Pelukis Pelan Mekanikal	Semua	-

Tempoh Pentauliahan : 1 Okt. 2020 - 30 Sept. 2023

Kelulusan ini adalah tertakluk kepada syarat-syarat seperti yang ditetapkan oleh Ketua Pengarah Pembangunan Kemahiran.

(ZAIHAN BIN SHUKRI)
Ketua Pengarah
Bertarikh : 24 September 2020

Rujukan Kami : JPK/701/22/1/6 (1)
P 002993

JABATAN PEMBANGUNAN KEMAHIRAN
DEPARTMENT OF SKILLS DEVELOPMENT

SIJIL PENTAULIAHAN
CERTIFICATE OF ACCREDITATION

Bahawa dengan ini diperakui:

POLITEKNIK SHAH ALAM
PERSIARAN USAHAWAN, SEKSYEN U1,
40150 SHAH ALAM,
SELANGOR

NAMA SYARIKAT PEMILIK : JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK), KEMENTERIAN PENGAJIAN TINGGI

KOD PUSAT BERTAULIAH : K21001

telah ditauliahkan oleh Jabatan Pembangunan Kemahiran untuk menawar, mentadbir dan mengekalkan mutu Sistem Persijilan Kemahiran Malaysia bagi program:

Kategori Pentauliahan	:	**PROGRAM MODULAR**
Jenis Modul	:	**K21001-MWA-1-116**
Nama Modul	:	**Certified Construction Site Supervisor (M&E)**

Program		Unit Kompetensi (CU-WA)	
Kod	Nama	Kod (CU-WA)	Nama (CU-WA)
MCE3	Penyelia Mekanikal & Elektrik		*CARRY OUT PRECONSTRUCTION ACTIVITIES -*
		01.01	*Prepare pre commencement work checklist information requirement schedule*
		01.02	*Organize pre-construction M&E temporary service*
		01.03	*Supervise site office layout works*
		01.04	*Organise construction information integration*
		01.05	*Coordinate building works in relation to M&E services*
		01.06	*Coordinate with relevant authorities*

Tempoh Pentauliahan : 1 Feb. 2021 - 31 Jan. 2024

Kelulusan ini adalah tertakluk kepada syarat-syarat seperti yang ditetapkan oleh Ketua Pengarah Pembangunan Kemahiran.

(Ts. HAJI ZAIHAN BIN SHUKRI)
Ketua Pengarah

Bertarikh : 17 Februari 2021

Rujukan Kami : JPK/701/22/2 Jld. 3 (17)

P 003777

JABATAN PEMBANGUNAN KEMAHIRAN
DEPARTMENT OF SKILLS DEVELOPMENT

SIJIL PENTAULIAHAN
CERTIFICATE OF ACCREDITATION

Bahawa dengan ini diperakui:

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
PERSIARAN USAHAWAN
SEKSYEN U1
40150 SHAH ALAM,SELANGOR

NAMA SYARIKAT PEMILIK : JABATAN PENGAJIAN POLITEKNIK DAN KOLEJ KOMUNITI

KOD PUSAT BERTAULIAH : K21001

telah ditauliahkan **BERSYARAT** oleh Jabatan Pembangunan Kemahiran untuk menawar, mentadbir dan mengekalkan mutu Sistem Persijilan Kemahiran Malaysia bagi program:

Kategori Pentauliahan	:	**PROGRAM MODULAR**
Jenis Modul	:	**M-1-11**
Nama Modul	:	**Certified Construction Site Supervisor (C&S)**

Program		Unit Kompetensi (CU)	
Kod	Nama	Kod	Nama
CVS3	Penyelia Awam & Struktur	Duty 1	Implement Site Administration

Tempoh Pentauliahan : 01 Dis 2020 - 30 Nov 2023

Kelulusan ini adalah tertakluk kepada syarat-syarat seperti yang ditetapkan oleh Ketua Pengarah Pembangunan Kemahiran.

(Ts. HAJI ZAIHAN BIN SHUKRI)
Ketua Pengarah

Bertarikh : 30 Disember 2020

Rujukan Kami : JPK/701/22/2 Jld. 3 (5)

S 000646

JABATAN PEMBANGUNAN KEMAHIRAN
DEPARTMENT OF SKILLS DEVELOPMENT

SIJIL PENTAULIAHAN
CERTIFICATE OF ACCREDITATION

Bahawa dengan ini diperakui:

POLITEKNIK SHAH ALAM
PERSIARAN USAHAWAN, SEKSYEN U1,
40150 SHAH ALAM,
SELANGOR

NAMA SYARIKAT PEMILIK : JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK), KEMENTERIAN PENGAJIAN TINGGI

KOD PUSAT BERTAULIAH : K21001

telah ditauliahkan oleh Jabatan Pembangunan Kemahiran untuk menawar, mentadbir dan mengekalkan mutu Sistem Persijilan Kemahiran Malaysia bagi program:

Kategori Pentauliahan	:	**PROGRAM MODULAR**
Jenis Modul	:	**K21001-MCU-1-111**
Nama Modul	:	**Pemantauan Pengurusan Fasiliti**

Program		Unit Kompetensi (CU)	
Kod	Nama	Kod	Nama
N811-002-4:2018	Pemantauan Pengurusan Fasiliti	C05	*Human Resource Administration*

Tempoh Pentauliahan : 1 Feb. 2021 - 31 Jan. 2024

Kelulusan ini adalah tertakluk kepada syarat-syarat seperti yang ditetapkan oleh Ketua Pengarah Pembangunan Kemahiran.

(Ts. HAJI ZAIHAN BIN SHUKRI)
Ketua Pengarah

Bertarikh : 10 Februari 2021

Rujukan Kami : JPK/701/22/2 Jld. 3 (14)

P 003763

JABATAN PEMBANGUNAN KEMAHIRAN
DEPARTMENT OF SKILLS DEVELOPMENT

SIJIL PENTAULIAHAN
CERTIFICATE OF ACCREDITATION

Bahawa dengan ini diperakui:

POLITEKNIK SHAH ALAM
PERSIARAN USAHAWAN, SEKSYEN U1,
40150 SHAH ALAM,
SELANGOR

NAMA SYARIKAT PEMILIK : JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK), KEMENTERIAN PENGAJIAN TINGGI

KOD PUSAT BERTAULIAH : K21001

telah ditauliahkan **BERSYARAT** oleh Jabatan Pembangunan Kemahiran untuk menawar, mentadbir dan mengekalkan mutu Sistem Persijilan Kemahiran Malaysia bagi program:

Kategori Pentauliahan	:	**PROGRAM MODULAR**
Jenis Modul	:	**MCU-1-111**
Nama Modul	:	**Penyeliaan Operasi Keselamatan Trafik Lebuhraya**

Program		Unit Kompetensi (CU)	
Kod	Nama	Kod	Nama
Penyeliaan Operasi Keselamatan Trafik Lebuhraya	Penyeliaan Operasi Keselamatan Trafik Lebuhraya	C05	Highway Patrolling Vehicles & Equipment Maintenance Coordination

Tempoh Pentauliahan : 1 Feb. 2021 - 31 Jan. 2024

Kelulusan ini adalah tertakluk kepada syarat-syarat seperti yang ditetapkan oleh Ketua Pengarah Pembangunan Kemahiran.

(Ts. HAJI ZAIHAN BIN SHUKRI)
Ketua Pengarah

Bertarikh : 10 Februari 2021

Rujukan Kami : JPK/701/22/2 Jld. 3 (16)

S 001622

JABATAN PEMBANGUNAN KEMAHIRAN
DEPARTMENT OF SKILLS DEVELOPMENT

SIJIL PENTAULIAHAN
CERTIFICATE OF ACCREDITATION

Bahawa dengan ini diperakui:

POLITEKNIK SHAH ALAM
PERSIARAN USAHAWAN, SEKSYEN U1,
40150 SHAH ALAM,
SELANGOR

NAMA SYARIKAT PEMILIK : JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK), KEMENTERIAN PENGAJIAN TINGGI

KOD PUSAT BERTAULIAH : K21001

telah ditauliahkan oleh Jabatan Pembangunan Kemahiran untuk menawar, mentadbir dan mengekalkan mutu Sistem Persijilan Kemahiran Malaysia bagi program:

Kategori Pentauliahan	:	**PROGRAM MODULAR**
Jenis Modul	:	**K21001-MCU-1-111**
Nama Modul	:	**Pengurusan Pejabat**

Program		Unit Kompetensi (CU)	
Kod	Nama	Kod	Nama
FB-024-2:2012	Pengurusan Pejabat	C04	*Meeting Preparation Assistance*

Tempoh Pentauliahan : 1 Feb. 2021 - 31 Jan. 2024

Kelulusan ini adalah tertakluk kepada syarat-syarat seperti yang ditetapkan oleh Ketua Pengarah Pembangunan Kemahiran.

(Ts. HAJI ZAIHAN BIN SHUKRI)
Ketua Pengarah

Bertarikh : 10 Februari 2021

Rujukan Kami : JPK/701/22/2 Jld. 3 (15)

P 003764

JABATAN PEMBANGUNAN KEMAHIRAN

KEMENTERIAN SUMBER MANUSIA

SIJIL KEMAHIRAN MALAYSIA

PELUKISAN PELAN MEKANIKAL

TAHAP TIGA

Dengan ini disahkan bahawa

NAZRAN ZAFRAN BIN JAMALUDDIN
041224100029

telah mencapai tahap kompetensi yang ditetapkan dalam Standard Kemahiran Pekerjaan Kebangsaan (SKPK) dan memenuhi semua syarat persijilan yang ditetapkan.

PENILAIAN TELAH DILAKSANAKAN DI PUSAT BERTAULIAH
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
SELANGOR

K21001-MC-080-3:2013-2022(MTK1)FT-012025

S103643505

JABATAN PEMBANGUNAN KEMAHIRAN
DEPARTMENT OF SKILLS DEVELOPMENT
KEMENTERIAN SUMBER MANUSIA
MINISTRY OF HUMAN RERSOURCE

TRANSKRIP RASMI
OFFICIAL TRANSCRIPT

NAMA *NAME*	:	NAZRAN ZAFRAN BIN JAMALUDDIN	NO SIRI SIJIL *CERTIFICATE SERIAL NUMBER*	S103643505
NO. KAD PENGENALAN *IDENTITY CARD NO.*	:	041224100029	TEMPOH LATIHAN *TRAINING DURATION*	02/11/2022 - 18/01/2025
KOD PUSAT BERTAULIAH *ACCREDITED CENTRE CODE*	:	K21001		
NAMA PUSAT BERTAULIAH *ACCREDITED CENTRE NAME*	:	POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH		
KOD PROGRAM *PROGRAM CODE*	:	MC-080-3:2013		
NAMA PROGRAM *PROGRAM NAME*	:	PELUKISAN PELAN MEKANIKAL *MECHANICAL DRAUGHTSMANSHIP*		
TAHAP *LEVEL*	:	TIGA *THREE*		
PERINGKAT PERSIJILAN *CERTIFICATION LEVEL*	:	SIJIL KEMAHIRAN MALAYSIA *MALAYSIAN SKILLS CERTIFICATE*		

C. PENDEDAHAN DAN LATIHAN INDUSTRI / *INDUSTRIAL EXPOSURE AND TRAINING*

KOD MODUL / CU *MODULE / CU CODE*	NAMA MODUL / CU *MODULE / CU NAME*	GRED *GRADE*	NILAI GRED *GRADE POINT*	JAM KREDIT *CREDIT HOURS*	NILAI GRED DIPEROLEHI *GRADE POINT EARNED*
TIADA *NILL*					

KEPUTUSAN KESELURUHAN
TOTAL RESULT

JUMLAH NILAI GRED DIPEROLEHI *TOTAL GRADE POINT EARNED*	JUMLAH JAM KREDIT *TOTAL CREDIT HOURS*	CGPA	CATATAN *REMARKS*
65.6	21	3.12	TERAMPIL BAIK *COMPETENT WITH MERIT*

JABATAN PEMBANGUNAN KEMAHIRAN
Department of Skills Development
KEMENTERIAN SUMBER MANUSIA
Ministry of Human Resources, Malaysia
ARAS 7-8, BLOK D4, KOMPLEKS D,
PUSAT PENTADBIRAN KERAJAAN PERSEKUTUAN,
62530 PUTRAJAYA, MALAYSIA

Telefon : 03-8886 5000
Faks : 03-8889 2423
Email : jpk@mohr.gov.my
Website : www.dsd.gov.my

Ruj. Kami : JPK.700-1/1/46 Jld.18 (10) Tarikh : 17 April 2023

PENGURUS
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
PERSIARAN USAHAWAN, SEKSYEN U1, 40150 SHAH ALAM, SELANGOR
SELANGOR

Tuan,

KELULUSAN PENTAULIAHAN PUSAT DAN PROGRAM DI BAWAH PERSIJILAN KEMAHIRAN MALAYSIA, JPK

Saya dengan hormatnya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa permohonan tuan untuk mendapatkan pentauliahan bagi melaksanakan program di bawah Sistem Persijilan Kemahiran Malaysia telah diluluskan seperti berikut:

(a)	Nama Pusat Bertauliah	:	**POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH**
(b)	Kod Pusat Bertauliah	:	**K21001**
(c)	Alamat Rasmi Pusat Bertauliah (sebagai premis utama latihan/penilaian)	:	**PERSIARAN USAHAWAN, SEKSYEN U1, 40150 SHAH ALAM, SELANGOR SELANGOR**
(d)	Nama Syarikat Pemilik	:	**JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK),KEMENTERIAN PENGAJIAN TINGGI (-)**
(f)	Kategori Pentauliahan	:	**PROGRAM MODULAR**
(g)	Jenis Modular (Kategori Modular)	:	**MODULAR WA (DARI CU SAMA)**
(h)	Mod Latihan	:	**SEPENUH MASA & SEPARUH MASA**

(i) Program Modular Yang Ditauliah :-

Bil	Kod Program Modular	Nama Program Modular	Tempoh Latihan	Tempoh Pentauliahan	Kapasiti Pelatih
1.	MWA-1-111	PERFORM CADD THREE DIMENSIONAL MECHANICAL DRAWING DEVELOPMENT	76 JAM (Jam Seminggu = 38 jam , Jumlah Minggu = 2)	01-May-2023 - 30-April-2026	100

Butiran Program NOSS, Kompetensi Unit (CU) dan Aktiviti Kerja (WA)

Bil	Program NOSS		Kompetensi Unit(CU)		Aktiviti Kerja(WA)	
	Kod	Nama	Kod	Nama	Kod	Nama
1.	MC-080-3:2013	Pelukisan Pelan Mekanikal	MC-080-3:2013-C04	COMPUTER AIDED DESIGN AND DRAFTING	MC-080-3:2013-C04-W04	Perform CADD three dimensional Mechanical Drawing development

3. Pihak PB hendaklah memastikan bilangan pengambilan pelatih mematuhi kapasiti yang diluluskan bagi program modular ini. PB diingatkan bahawa kapasiti pelatih yang diluluskan bagi program modular ini adalah jumlah pelatih tempatan dan antarabangsa (sekiranya ada). Bagi pengambilan pelatih antarabangsa, PB hendaklah memohon kebenaran pengambilan pelatih antarabangsa dengan merujuk kepada panduan berkaitan yang sedang berkuatkuasa.

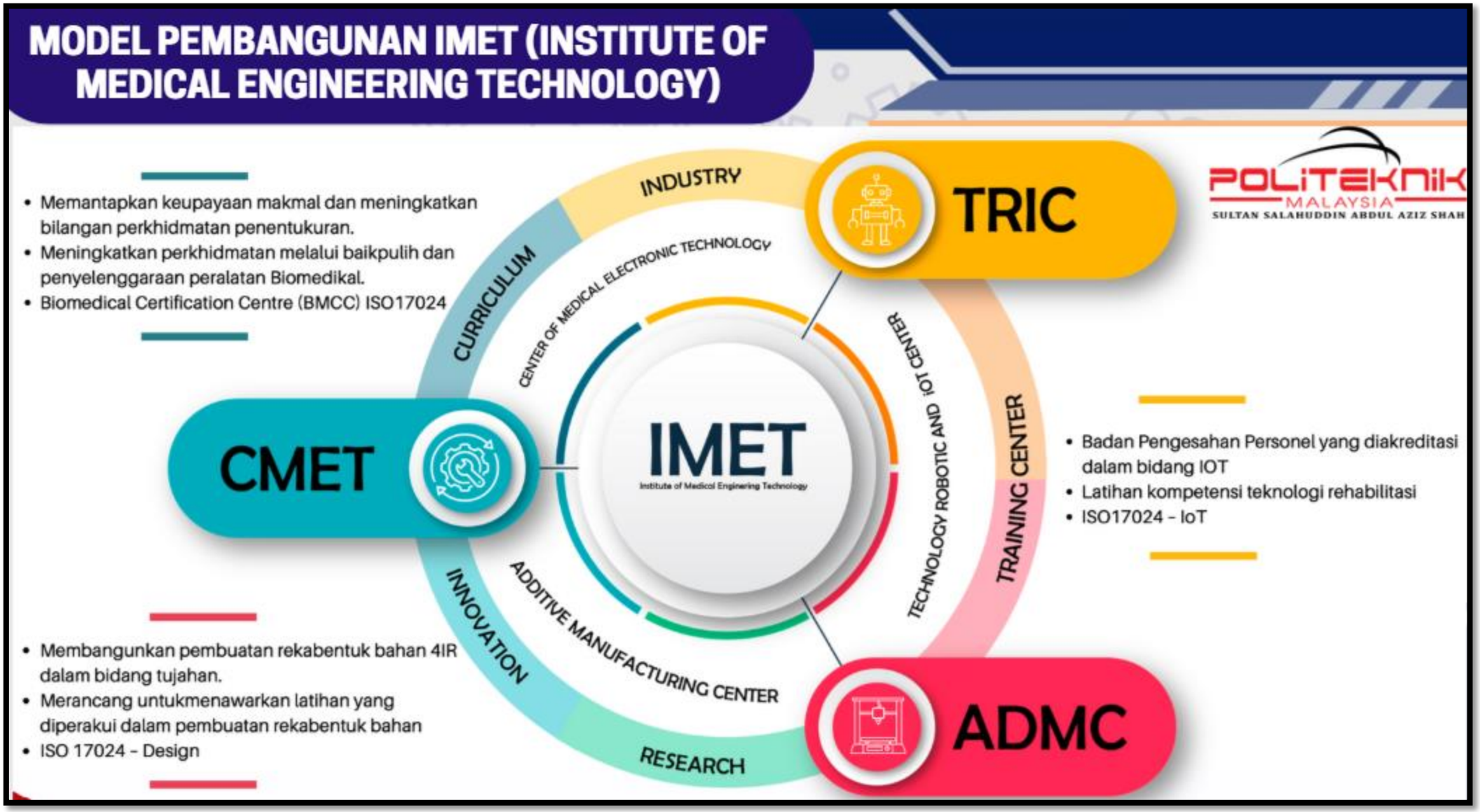
4. Sehubungan itu bersama ini disertakan Lampiran I - Syarat dan Peraturan Pentauliahan serta Lampiran II - Perakuan Mematuhi Syarat Dan Peraturan dan Sijil Akuan Pentauliahan. Justeru, pihak tuan hendaklah mengembalikan semula Lampiran II yang telah dilengkapkan kepada Jabatan dalam tempoh 14 hari dari tarikh surat ini.

5. Jabatan ini boleh membuat pemeriksaan ke atas pusat bertauliah pada bila-bila masa seperti yang diperuntukkan di dalam Seksyen 38 dan 39 Akta 652.

6. Pihak tuan juga diingatkan bahawa penggantungan atau pembatalan sijil pentauliahan seperti yang diperuntukkan dalam Seksyen 29 Akta yang sama boleh dikenakan sekiranya pihak tuan gagal mematuhi peraturan dan syarat-syarat yang ditetapkan.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"
Ketua Pengarah Pembangunan Kemahiran


MODEL PEMBANGUNAN IMET (INSTITUTE OF MEDICAL ENGINEERING TECHNOLOGY)
POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH
TRIC
• Memantapkan keupayaan makmal dan meningkatkan bilangan perkhidmatan penentukuran.
• Meningkatkan perkhidmatan melalui baikpulih dan penyelenggaraan peralatan Biomedikal.
• Biomedical Certification Centre (BMCC) ISO17024
CMET
• Membangunkan pembuatan rekabentuk bahan 4IR dalam bidang tujahan.
• Merancang untukmenawarkan latihan yang diperakui dalam pembuatan rekabentuk bahan
• ISO 17024 – Design
ADMC
• Badan Pengesahan Personel yang diakreditasi dalam bidang IOT
• Latihan kompetensi teknologi rehabilitasi
• ISO17024 – IoT
IMET
Institute of Medical Engineering Technology
INDUSTRY
CURRICULUM
INNOVATION
RESEARCH
TRAINING CENTER
CENTER OF MEDICAL ELECTRONIC TECHNOLOGY
TECHNOLOGY ROBOTIC AND IOT CENTER
ADDITIVE MANUFACTURING CENTER

HALATUJU IMET@PSA

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

1 AKADEMI TEKNOLOGI KEJURUTERAAN MEDIKAL

2 MENGKORMERSIALKAN SUMBER

3 HUB KOLABORASI

4 BERKANUN-AUTONOMI, FLEXIBLE & ADAPTABLE

Appendix G1-2a

Agensi Kelayakan Malaysia
Malaysian Qualifications Agency

SERIAL NO.: 19224

REGISTRATION NO.:
MQA/FA13181

CERTIFICATE OF ACCREDITATION

THE MALAYSIAN QUALIFICATIONS AGENCY HEREBY CERTIFIES THAT THE PROGRAMME

Diploma in Mechanical Engineering

CONDUCTED BY

Politeknik Sultan Salahuddin Abdul Aziz Shah

AT

Persiaran Usahawan, Seksyen U1
40150 Shah Alam, Selangor

HAS ATTAINED THE QUALITY ASSURANCE STANDARDS SET BY THE AGENCY AND IS IN COMPLIANCE WITH THE MALAYSIAN QUALIFICATIONS FRAMEWORK

Level 4

DATE OF ACCREDITATION : **01/01/2019 to 31/12/2024**

CHIEF EXECUTIVE OFFICER

CONFERMENT OF THIS CERTIFICATE OF ACCREDITATION IS SUBJECT TO THE REGULATIONS AND CONDITIONS SET BY THE AGENCY

Agensi Kelayakan Malaysia
Malaysian Qualifications Agency

No. Siri.: 19224

No. Pendaftaran.:
MQA/FA13181

Perakuan Akreditasi

Agensi Kelayakan Malaysia dengan ini memperakukan bahawa program

Diploma Kejuruteraan Mekanikal

yang dikendalikan oleh

Politeknik Sultan Salahuddin Abdul Aziz Shah

di alamat

Persiaran Usahawan, Seksyen U1
40150 Shah Alam, Selangor

telah mencapai standard jaminan kualiti yang telah ditetapkan oleh Agensi dan mematuhi Kerangka Kelayakan Malaysia

Tahap 4

Tarikh Akreditasi : **01/01/2019 hingga 31/12/2024**

KETUA PEGAWAI EKSEKUTIF

Penganugerahan Perakuan Akreditasi ini adalah tertakluk kepada peraturan-peraturan dan syarat-syarat yang telah ditetapkan oleh Agensi

APPENDIX D

ENGINEERING TECHNOLOGY ACCREDITATION COUNCIL

Evaluation Panel Report

Name of IHL:

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

Programme for Accreditation:

DIPLOMA IN MECHANICAL ENGINEERING

General Remarks

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), was formerly known as Politieknik Shah Alam. It is the eighth polytechnic in Malaysia under the World Bank Program. It has six academic departments consisting of Department of Mechanical Engineering (JKM), Department of Civil Engineering (JKA), Department of Electrical Engineering (JKE), Department of Commerce (JPG), Department of Mathematics & Computer Science (JMSK) and the Department of General Studies (JPA). Since 1999 up to 2023 PSA has produced 44041 graduates in different areas of engineering and commerce.

PSA has obtained Tier 6 for the PolyRate rating system. In addition, PSA has also been awarded with the Asian Pacific Accreditation and Certification Commission (APACC) accreditation in 2015, MSISO9001 (Quality Management System) certification since 2005 , ISO45001:2018 (Occupational Health and Safety Management) certification in 2020 and now it is moving towards ISO21001:2018 Educational Organizations Management System (EOMS).

Diploma in Mechanical Engineering is offered by the Department of Mechanical Engineering since 2002. The programme went through “First Cycle Accreditation” visit by ETAC in the year 2019 and was awarded six (6) years of accreditation with interim from the year 2019 to 2024.

The new cycle accreditation visit was conducted on 27th and 28th August 2024 to evaluate the Diploma in Mechanical Engineering programme at PSA to cater for cohort 2025 and onwards.

A QUALIFYING REQUIREMENTS

1	Minimum 90 SLT credit units. At least 60 SLT credit units shall be engineering or engineering technology courses of which a minimum 30 SLT credit units shall be allocated for practice-oriented components in the technical and specialist area.	YES/~~NO~~
2	Final year project (4-6 SLT credit units)	YES/~~NO~~
3	Industrial training / WBL (minimum of 16 weeks)	YES/~~NO~~
4	Minimum of 6 full-time teaching staff	YES/~~NO~~
5	Teaching Staff: student ratio of 1:20 or better	YES/~~NO~~
6	External examiner's report	YES/~~NO~~
7	Programme Educational Objectives	YES/~~NO~~
8	Programme Outcomes	YES/~~NO~~

B ASSESSMENT

***** Delete where applicable

ASSESSMENT CRITERIA

1 CRITERION 1: PROGRAMME EDUCATIONAL OBJECTIVES

Comments/Remarks on Programme Educational Objectives: The Evaluation Panel shall comment on the appropriateness of the Programme Educational Objectives as required by Section 4.0 and 8.1 of the Standard.

1.1 General Observations:

Performance Indicators	
Statements are well-defined, measurable and achievable	YES / NO Remarks: There are four (4) PEOs established by the IHL and their respective KPIs as shown below: PEO1: Equipped with industry-relevant knowledge and skills in Mechanical Engineering field. (KPI 40% of the graduates will make profession in engineering field) PEO2: Engaging on lifelong and continuous learning to enhance knowledge and skills (KPI 30% of the graduates will be able to engage lifelong and continuous learning) PEO3: Instilled with entrepreneurial skills and mindset in the real working environment. (KPI 30% of the graduates will become entrepreneurs) PEO4: Establish with strong linkage with society and players in the industry (KPI 10% of the graduates will be able to contribute to society and become players in the industry).

Statements are well published and publicised	YES / NO Remarks: The PEOs are published in Student Study Guide which are distributed during the orientation week. They are also available in course outlines and posters are displayed in Teaching and Learning rooms at the Department.
Clear linkage between Programme Educational Objectives and Programme Outcomes	YES / NO Remarks: There is a clear linkage between PEO and PLO as shown in Table C2-2a
A documented and effective process, involving programme stakeholders, for the periodic review and revision	YES / NO Remarks: There is a clear process of establishing, reviewing and revising the PEOs. Measurement of PEOs achievements was carried out through alumni surveys. Table C1-5a shows the PEOs measurements for the June 2014 curriculum.
Assessment of performance available and subsequent CQI indicated.	YES / NO Remarks: The instrument to measure the PEOs achievement has been established and subsequent CQI has been conducted for the 2014 cohorts. A pilot test to determine the KPI indicators for the latest PEOS has been conducted for the 2019 cohorts and as shown in Table C1-5b where all the KPIs have been achieved.

2 CRITERION 2: PROGRAMME OUTCOMES

Comments/Remarks on Programme Outcomes: The Evaluation Panel shall comment on the appropriateness of the Programme Outcomes as well as the Processes and Results as required by Section 5.0 and 8.2 of the Standard.

2.1 Observation on Programme Outcomes:

The IHL has twelve (12) Programme Learning Outcomes and as required by the EAC Standard 2020. There is a matrix linking the 12 PLOs with the 4 PEOs. PLOs are published in the Student Study Guide which are distributed during the student orientation week. They are also being displayed through posters at strategic locations in Teaching and Learning (T&L) rooms in the Department.

2.2 Observation on Processes and Attainment:

The process for developing for the PLOs is similar and conducted together with PEOs and centrally managed by the Curriculum Development Division of JPPKK. The process of reviewing is also carried out together with the PEOs.

The achievement of PLOs is demonstrated by the achievement of PLOs of each cohort for every semester. Figures C2-5c, C2-5d show the overall achievement of cohorts December 2019 and June 2020 where both cohorts achieved all the PLOs. While Figure C2-5e shows the comparison of the two cohorts where the patterns showed some similarities. All assessment data are available from the i-EXAM module of the online system known as Sistem Pengurusan Maklumat Politeknik (SPMP). From the visit, the attainment of PLOs demonstrated through the SPMP system. Group and individual attainments could be seen through the system. The CQI process of the PLO is also demonstrated through the system.

2.3 Observation on Stakeholders Involvement:

Lecturers form polytechnics, experts for other IHLs and representatives of relevant industries were involved in the formulation of PLOs. IAPs and external examiners are also involved in the reviewing of the PLO statements.

Overall Comments/Remarks: *~~Unsatisfactory~~/Satisfactory

Strength	**NIL**
Weakness	**NIL**
Concern	**NIL**
Opportunity for Improvement	**NIL**

3 CRITERION 3: ACADEMIC CURRICULUM

3.1 SLT Credit Units

(a) Total number of SLT credit units

Total number of SLT credit units is 94 which is more than 90 units which is the minimum requirement of ETAC Standard 2020.

(b) Number of SLT credit units for engineering or engineering technology courses

The engineering technician courses comprise of discipline core – 53 units, elective – 2 units and industrial training – 10 units which make up a total of 65 SLT credit units which satisfies the minimum 60 SLT credit units required by ETAC Standard 2020.

(c) Number of SLT credit units for other related general education courses

Other related general education courses made up of 29 SLT credit units which comprise of compulsory – 14 units and common core – 15 units.

3.2 The Curriculum

(a) Programme Structure, Course Contents, and Balanced Curriculum

Observation
The programme follows a standard structure of 14 weeks per semester with a total of 5 semesters distributed over a 3 years' duration with the final semester being allocated to Industrial Training for 20 weeks. Average credit loading per teaching semester was observed to be 17-18 SLT credit hours for semester 1 to semester 3, 14-15 SLT credit hours for semester 4 & semester 5. There are five components in the programme structure, which are compulsory, common core, discipline core and electives. During the first three semesters of the study, the curriculum covers the fundamental scientific and mathematics principles along with general engineering and mechanical engineering such as Engineering Mathematics, Engineering Science, Engineering Drawing, Workshop Technology, Engineering Mechanics, Electrical Technology, Thermodynamics, Fluid Mechanics and Materials Science. Other mechanical engineering courses and electives are offered in semesters 4 and 5 such as Mechanics of Machines, Pneumatic and Hydraulics, Engineering Design, Maintenance Engineering, Project and one elective to choose from Industrial Management or Engineering Plant Technology.

In general, the curricular coverage is good, covering broad area and basic knowledge profile and the breadth and depth required for the Mechanical Engineering discipline. Non-technical courses such as Occupational Safety and Health for Engineering and Entrepreneurship are included to assist in the development of transferable skills. Engineering and Society course will help in the understanding of engineer and society, environment and sustainability. The programme has incorporated the OBE approach as each course is mapped to PLO as shown in the SAR. The program covers the knowledge profile (DK), addresses well-defined problem solving (DP), and well-defined engineering activities (NA) as required by the ETAC Standard 2020.

(b) Programme Delivery and Assessment Methods

Observation
DELIVERY The curriculum is delivered using acceptable techniques like modern technology in classroom instruction, tutorials, project-based learning in laboratories and assignments, open-ended problem solving, seminar presentation and attendance, project demonstration, industrial, academic visits and industrial visiting lecturers. The adoption of the OBE approach is evident from the course files provided and maintained by the lecturers and also during the interviews with the students and academic staff. Blended learning is practised since it has been made a requirement by Polytechnic Malaysia that at least 70% of the courses are made available in blended form, where online lectures and online notes are made available to the students. In addition, collaborative classes (face to face) and e-collaborative classes are also conducted. ASSESSMENT The program assesses the students' learning outcomes through continuous assessments and final examinations (FE). In continuous assessment, students are assessed through various methods such theory tests, assignments, quizzes, oral presentations, demonstrations, reports, practical work and practical test. CIST which is the Course Specification Table is used in planning and development of the items for the coursework assessment. Final examinations is the evaluation of the cognitive learning domain and the items are developed by the lecturers based on the Final Exam Item Specification Table (FEIST). This is to ensure the assessment items are developed according to the predetermined course learning outcomes.

(c) Practice-oriented components

Observation
In the current curriculum, the presence of practice-oriented components is visible. The programme has 33 credit units allocated for this component as shown in Table C3-1c and this satisfies the technical and specialist area required by ETAC standard 2020. Appendix C3-2i shows the list of industries involved in this programme from 2019 to 2022 where a total of 51 activities consisted of visits, seminars, webinars and contests that are industry related.

(d) Final-Year Project

Observation
The 5 credits Final-Year Project (FYP) is split into 2 parts (Project 1 & Project 2) & conducted in semester 4 (2 credits) & semester 5 (3 credits). The implementation is acceptable. The method of assessment was found to be acceptable. Project 1 is graded on Report (40%), Logbook (40%) & Presentation (20%) while Project 2 is graded on Project Report (40%), Logbook (40%) & Presentation (20%). Rubrics for these purposes are in place. It was observed that the projects were predominantly conducted in groups of three with the same title but the scope of work of each student is different. The assessment of the report is also based on each student's contribution. The guide to the FYP course is also in place. Strict vetting and moderation of FYP submissions to be observed in the future to ensure that the distribution of grades is consistent with the quality of the project reports. From a few samples of the project reports it was noticed that the marks awarded were not consistent with the quality of the reports.

(e) Industrial Training / WBL

Observation
Students are required to undergo 1 full semesters equivalent to 20 weeks of IT industrial training during their final semester as part of their graduation requirements. IT was mapped to PLO5, PLO6, PLO8, PLO9, PLO10, and PLO12. The placement of students was found to be acceptable. Students are assisted in the placement process. The industrial training is adequately structured, professionally supervised, and recorded in logbooks and reports. The assessment is carried out by both the IHL lecturer and the industrial supervisor through a comprehensive rubric form. The portion of marks for the IHL lecturer and industrial supervisor is divided into 40% and 60%, respectively. For the IHL lecturer, the assessment marks were

further broken down into two parts: the mark given during the visit and the mark given at the institution (the presentation and final report). The assessment at companies mainly focusses on student technical competency, professional ethics, and communication skills. Overall, the implementation of industrial training is satisfactory.

(f) Training in Engineering Practice

Observation
The IHL has conducted various activities to allow its students to be exposed to engineering practices using several methods such as talks by guest lecturers from industry. From the interview with the head of the programme, lecturers and students, several industrial talks were conducted to expose the students to engineering practice.

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	**NIL**
Weakness	**NIL**
Concern	**NIL**
Opportunity for Improvement	**NIL**

4 CRITERION 4: STUDENTS

4.1 Students Admission

(a) Entry requirements (Academic)

Students entering (entry requirements) the programme followed the criteria set in the standard with adequate mathematics and natural sciences or their equivalent.	YES / NO Remarks: The entry requirements are SPM, Polytechnics Pre-Diploma, Polytechnics Certificates and APEL. During the visit, it was observed that the students are SPM holders and College Community Certificate holders. Students' admission met the criteria set for the programme. In general, the entry requirements satisfy the student entry guidelines as stated in the ETAC Standard 2020.
Programme ensured that students, who do not meet the above criteria, undertake suitable remedial programmes in order to attain the equivalent entry qualification.	YES / NO Remarks: All the students being interviewed fulfilled the entry requirements.

(b) Transfer Policy/Selection Procedures/Appropriateness of arrangement of Exemptions from part of the Programme

Programme has clear policies on credit transfer/credit exemptions.	YES / NO Remarks: The IHL has a clear policy on credit transfer and credit exemptions. These policies are outlined in the "Guidelines for Credit Transfer and Course Exemption" section, which specifies the conditions under which students can transfer credits from previous institutions or be exempted from certain courses.

	The guidelines ensure that the credit transfer and exemption process is standardised and consistent, allowing students to progress in their studies without unnecessary repetition of coursework. (Garis Panduan Pindahan Kredit & Pengecualian Kursus Program Pengajian Politeknik, 2013 and Garis Panduan Pemindahan Kredit & Pengecualian, Politeknik & Kolej Komuniti, 2020). It is allowed to transfer a maximum of 30% equivalent to 4 credits. The conditions under transfer can be granted, and the procedures for application are clearly indicated. IHL allows the programme conducts two modes of credit transfer and credit exemptions: 1. Horizontal Credit Transfer: This allows students to transfer credits between programmes at the same level, such as from one diploma to another within the same institution or between different institutions. This mode includes situations like transferring credits from similar programmes across institutions. 2. Vertical Credit Transfer: This applies to students progressing from a lower level of qualification to a higher one, such as from a certificate to a diploma, or from a diploma to a bachelor's degree. The transfer of credits is subject to certain limitations, such as a maximum of 30% of the total programme credits. These modes are outlined in the guidelines and ensure that students can make the most of their prior learning when advancing through their academic journey.

4.2 Students Development

	YEAR 1	YEAR 2	YEAR 3
Number of students interviewed	8	19	15

(a) Student counselling

The IHL has counselling unit/section /department with qualified counsellor(s).	YES / NO Remarks: The institution has a counselling Psychological Management Unit (UPP) with qualified counsellors. This is reflected in the document, which lists various psychological support activities and programmes conducted by the unit, ensuring students have access to necessary counselling services. The Programme is facilitated by lecturers as academic advisors. The academic advisor provides guidance to students, particularly in matters related to their academic progress, course selection, and ensuring they meet the required academic standards. The advisor is also involved in supporting students who may need to adjust their credit load or seek approval for certain academic decisions. A slot consisting of 1 hour per week has been included in the lecturers' timetable for the advising slot. University counselling services are a free, confidential service available to students and staff. The Psychological Application System, or e-Psychology PSA, is an alternative medium for the Psychology Management Unit. The university counselling service is confidential. The counselling service complies with the Data Protection Act of 1998. Brief handwritten notes are kept in a secure place only within the counselling ervice. It's observed

	during the tour of the facilities with the counsellor all the processes. The IHL has 3 qualified counsellors (SS44) under the Unit of Psychological Management who play a significant role in assisting students by providing professional advice. List of counsellors 1. Siti Asiroh binti Mohammad (master's in science counselling, UUM) 2. Nurul Khaizan binti Zakaria (bachelor's in counselling, UM) 3. Zaiwan binti Ngojar (master's in education psychology, UKM) The counsellors are regularly trained in professionalism and registered with the Malaysian Board of Counsellors as required by law. Students are made aware of the counselling sessions provided through structured activities and events such as "Minggu Suai Kenal" (Orientation Week) and various briefing sessions. The counsellors are regularly trained in professionalism and registered with the Malaysian Board of Counsellors as required by law. During the interview, the students expressed their awareness of the counselling service and the unit location.
Programme monitors and evaluates student performance, advice and counsel students regarding academic and career matters, as well as provide assistance in handling health, financial, stress, emotional and spiritual problems.	YES / NO Remarks: All students are assigned to an academic advisor. The academic advisor monitors student performance throughout their studies. Weekly meetings are carried out between students and the academic advisor to discuss the student's performance and well-being. Corporate Industrial Services and Employment Centre (CISEC) is responsible for designing and managing the supply of graduates in career direction, assisting students in determining

	employability and career paths after graduation. Students are also provided with advising and counselling career development services conducted by the Psychology Management Unit. For financial help, students are referred to the Student Affairs and Scholarship Student Affairs Department for information regarding as well as assistance in applying for study loans and scholarships.

(b) Workload

Students workload is not burdensome.	YES / NO Remarks: Students' workload is suitable for a Diploma programme. On average the credit loading per semester is 18 credits. From the interview, the students were satisfied with the workload designated by the programme. The students can be involved in activities such as sports, clubs, etc.

(c) Enthusiasm and motivation

The teaching-learning environment is conducive.	YES / NO The teaching and learning environment are conducive since most students are happy with the teaching and learning facilities especially the lecture rooms, laboratories, and workshop.
Students have avenues to provide feedback and suggestions about the programme	YES / NO Remarks: Students' feedback is monitored through teaching evaluation and normally conducted at the end of each semester. Students could also

	give feedback to the head of programme and through the students' council.

(d) Co-curricular activities

Programme ACTIVELY encourages student participation in activities that provide experience in management and governance.	YES / NO Remarks: The IHL has a student association (Majlis Perwakilan Pelajar) that has so many functions including planning and conducting student activities and as a mediator between students and IHL's upper management. Various activities carried out to provide students with relevant experience in management and governance.

(e) Observed attainment of Programme Outcomes by students

The students interviewed were very enthusiastic and possessed effective communication skills. Most of the interviewed students have demonstrated the attainment of some of the POs, such as teamwork, oral communications, knowledge of public health and safety and lifelong learning. Nonetheless, the interview revealed that students have a limited understanding of OBE.

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	**NIL**
Weakness	**NIL**
Concern	**NIL**
Opportunity for Improvement	**NIL**

5 CRITERION 5: TEACHING AND SUPPORT STAFF

5.1 Teaching Staff

	< 1 YEAR	1-5 YEARS	6-10 YEARS	> 10 YEARS
Number of teaching staff interviewed	**NA**	**NA**	**1**	**10**

(a) Number and competency of Teaching staff / WBL industry mentor

Total number of academic staff teaching the programme	25
All eligible staff are registered with BEM	YES / NO Remarks: 18 academic staff are registered with BEM. The rest are not registered because they do not have the relevant qualifications or in the process to be registered especially the Diploma holders.
Academic staff is sufficient in number and competencies to cover all curricular areas.	YES / NO Remarks: The number of academic staff is adequate and competent to cover the required curricular areas. All teaching staff are competent, covering all areas of the programme and sufficient to accommodate student-staff interaction, advising and counselling, service activities, and professional development
Academic staff have the education, diversity of background, engineering experience, teaching experience.	YES / NO Remarks: Staff qualification found to be good with 32% academic staff have postgraduate degrees, 56% academic staff have bachelor's degree & 12% academic staff have diploma.

	Majority of the staff has more than 10 years of teaching experience and sufficient exposure to industry.
Academic staff have the ability to communicate, enthusiasm for developing more effective programmes, level of scholarship.	YES / NO Remarks: From observation and during the interview sessions, the academic staff are able to communicate, enthusiasm for developing more effective programmes and level of scholarship.
Academic staff participate in professional societies or as members of Learned Bodies	YES / NO Remarks: The IHL always encourage the academic staff to organize & participate in professional societies or as members of Learned Bodies.

(b) Qualification, industrial experience & development

Total number of academic staff teaching the programme with professional certificates/industrial/specialist or at least 2 years of relevant industrial work experience	18
Total number of academic staff with Bachelors qualification.	14
Total number of academic staff with MSc and PhD qualifications.	8

(c) Industrial involvement

Academic staff are given provision to undergo industrial attachment.	YES / NO Remarks: Industrial involvement of the teaching staff were found to be minimal, and limited to industrial visits through certain academic courses. Given the background of a majority of the academic staff which

	come from the industry and thus have links with the industry, this certainly can be improved.
Academic staff are involved in appropriate professional/learned bodies providing services towards the development of the entity.	YES / NO Remarks: The IHL supports the usage of guest lecturers from the industry or public to aid the delivery of the curriculum in the a formal & structured way. 5 staff are involved in MBOT, two are members of Malaysian Nature Society, two are members of Majlis Rekabentuk Malaysia and one staff is a member of Technical Association of Malaysia (TAM).

(d) Teaching load/contact hours

Average teaching hours per week is less than 18	YES / NO Remarks: Lecturer's workload is acceptable. The average teaching load for the teaching staff is about 14-16 contact hours per week. As is common in many IHLs, in addition to teaching, some lecturers are assigned administrative duties.

(e) Motivation and enthusiasm

Academic staff know that IHL has adequate policies and mechanisms for retaining and rewarding well-qualified staff.	YES / NO Remarks: The opportunity to further study is present and applicable for all staff. The current policy encourages the staff to further study in local universities through a queue system.

Academic staff are satisfied and motivated with their work environment.	YES / NO Remarks: From observation and during the interview sessions, the teaching staff are all motivated and enthusiastic.

(f) Use of lecturers from industry/public bodies

Academic staff organise industry talk towards enhancing students' learning activities.	YES / NO Remarks: The staff are provided with the opportunity to establish active and close rapport with the industry in various disciplines.

(g) Awareness of the Outcome-based approach to education

Academic staff understand and implement OBE in the teaching and learning of the programme.	YES NO Remarks: Most of the academic staff are aware and understand the OBE concept and its approach and and implemented in the teaching and learning activities.

5.2 Support Staff (Laboratory and Administration)

	< 1 YEAR	**1-5 YEARS**	**6-10 YEARS**	**> 10 YEARS**
Number of support staff interviewed	**NA**	**3**	**NA**	**NA**

(a) Qualification and experience

Laboratory staff are qualified.	YES / NO Remarks: The laboratory staff are qualified. Two of them with Diploma of Mechanical Engineering qualifications.
Total number of laboratory staff.	5
Total number of administrative staff.	3

(b) Adequacy of support staff

Laboratory staff adequacy is satisfactory (ideally 1 staff to 2 laboratories)	YES / NO Remarks: Two technicians are being assigned to support the department. An academic is being assigned to each laboratory. Staff adequacy in laboratory is satisfactory.
Administrative staff adequacy is satisfactory to support programme's operation.	YES / NO Remarks: Administrative staff is adequate to support the programme's operation.

5.3 Development of Staff

(a) Staff development

Academic staff development: The IHL has systematically plan and provide appropriate sponsorship for postgraduate studies/ sabbatical leave, training towards professional qualification. Academic staff development: The IHL has systematically plan and provide appropriate training and conferences. Academic staff development: The IHL provides appropriate assistance in paying annual professional membership fees.	YES / NO Remarks: The IHL has systematic planning to provide appropriate sponsorship for postgraduate studies/ sabbatical leave, training towards professional qualification. Education financing either through Hadiah Latihan Persekutuan (HLP) offered by the Ministry of Higher Education (MoHE) or by own funds. The IHL provides opportunities and pays the fees to the academic staff who join the outside training and conferences. The IHL also aids in paying professional membership fees. JPPKK offer a Program Peningkatan Kemahiran (PPK) that helps to develop skills that support the implementation of T&nL and increase the competence of teaching staff in the field of their specialization. In addition, JPPKK also offers a self-development course which is Career Path Competency Matrix (CPCM). CPCM provides academic staff with skills according to the position held and position in the leadership hierarchy
Laboratory/Technical support staff: The programme has provided the opportunities for them to upgrade their competencies through training and practical exposure. Laboratory/Technical support staff: The programme has provided safety training.	YES NO Remarks: Laboratory staff are given the opportunity to attend training. Teaching and support staff of DKM programme are always encouraged to develop themselves through trainings managed by the Training and Continuing Education Unit.

	All staff have opportunity to enhance their knowledge and skills to meet the current requirements and demands of the organization. JPPKK training plans have been designed to ensure staff can meet the THREE (3) days course requirement and is managed by Professional Development Center (PPPro) as Kursus Dalam Perkhidmatan (KUDAP). Support staff are encouraged to develop themselves through trainings managed by the Professional Development Center (PPPro) of PSA such as in-house service courses.

(b) Staff assessment

Annual assessment of staff performance is well understood. Assessment takes into account participation in professional, academic and other relevant bodies as well as community involvement.	YES / NO Remarks: Adequate process to assess staff performance conducted annually. Academic staff are being assessed for their performance is teaching, supervision, administrative duties, publications, research, professional achievement, and community involvement.
The programme established a working system for evaluation/feedback by students on matters relevant to the academic environment.	YES / NO Remarks: Evaluation/feedback by students on matters relevant to the academic environment is in place.

(c) Academic Staff: Student Ratio

Ratio is 1:20 or better for the period of assessment.	YES ☐ NO ☐ Remarks: Academic staff to student ratio for the year 2023 is 1:10.

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	**NIL**
Weakness	**NIL**
Concern	**NIL**
Opportunity for Improvement	**NIL**

6 CRITERION 6: FACILITIES

(a) Lecture rooms - quantity provided and quality of A/V

Lecture rooms and theatres provided are in satisfactory condition equipped with learning facilities and equipment.	YES ✓ NO Remarks: All lectures are conducted at PSA Campus. The lecture rooms and theatres are shared with other faculties in the campus. These include 21 lecture rooms, each with capacity of 30-40, and 3 lecture halls with capacity ranging from 150 to 1500. All facilities are equipped with audio-visual equipment, LCD projectors, and screens.
Maintenance of facilities and equipment are in proper order and properly documented.	YES ✓ NO Remarks: The maintenance of facilities and equipment are performed centrally by the facilities management unit based on an annual preventative maintenance plan. The preventive maintenance activities are conductedin the proper order and are properly documented to ensure compliance and traceability
Safety and health of the lecture room is satisfactory.	YES ✓ NO Remarks: The safety and health conditions of the lecture room is satisfactory.

(b) Laboratory/workshop - student laboratory and equipment

Number of laboratories/workshops available.	The Mechanical Engineering Department at PSA Campus has 9 Labs and 5 workshops for teaching and learning.

Laboratories/Workshops provided are in satisfactory condition equipped with adequate equipment to facilitate learning of modern engineering practice. Equipment and testing bays to accommodate FYP, mini projects and other activities are adequate and satisfactory.	YES ✓ NO Remarks: The laboratories and workshop are equipped with standard equipment to facilitate learning. Provisions in terms of the number of equipment and other resources to support students' projects are adequate and satisfactory.
Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the laboratory/ workshop is satisfactory.	YES NO ✓ Remarks: The facilities and equipment in the labs and workshops are maintained by the Department of Mechanical Engineering. Maintenance of the equipment is carried out periodically based on each equipment's scheduled maintenance plan. The maintenance and calibration activities records are in place. The preventive maintenance plan for each piece of equipment was not placed on the equipment itself. Instead, it was placed inside a folder in the technician's room. The safety and health practice at other areas in the laboratories/workshop area is satisfactory.

(c) IT/computer laboratory - adequacy of software and computers

IT/computer laboratories provided are in satisfactory condition equipped with up-to-date computing and software facilities including internet access and online platforms. Engineering original software to accommodate analysis, FYP activities and simulation are adequate and satisfactory.	YES ✓ NO Remarks: The implementation of ICT in PSA is based on current policies issued by the Ministry of Higher Education (MOHE) and the Malaysian Administrative Modernization and Management Planning Unit (MAMPU).

	Campus-wide Wi-Fi is available for internet access. There are 5 computer labs available, and their capacities are adequate to accommodate analysis, FYP activities and simulation with original engineering software and valid licences for each software.
Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the IT/computer laboratory is satisfactory.	YES ✓ NO Remarks: The maintenance & repair of ICT facilities is managed by PSA ICT Unit The safety and health conditions of the IT/computer laboratory are satisfactory.

(d) Library/resource centre - quality and quantity of books, journals, and multimedia

Number of books and related materials for the programme are satisfactory. Number of electronic/digital books and references for the programme are satisfactory.	YES ✓ NO Remarks: Standard modern library facilities are provided. The combination of physical and online resources includes books, journals, other electronic reference materials and access to online databases. An inter-library loan service is available. The number of books, related materials and other learning resources are satisfactory.
Learning facilities and spaces are satisfactory. Discussion rooms are available and satisfactory. Opening hours are conducive to students.	YES ✓ NO Remarks: The library and the surrounding learning spaces are in good conditions and satisfactory for students' use. Sufficient number of discussion rooms are provided. The library is open from 8am up to 10pm

	on weekday and closed on weekend & public holiday. Learning and discussion areas are also provided around the campus for students out-of-office hours use.
Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the library is satisfactory.	YES ✓ NO Remarks: The facilities are well maintained. The safety and health practices in the library areas are satisfactory.

(e) Other facilities

The IHL provides a lively and dynamic atmosphere for the students: • The IHL provides student accommodations. • The IHL provides sport and recreational centres. • The IHL provides health centre. • The IHL provides student centre (including surau/masjid). • The IHL provides eateries/café.	YES ✓ NO Remarks: A student accommodation block at PSA campus with a capacity of 1272 students is provided and includes modern amenities such as cafeteria, washing room, recreational room, multipurpose court and student activity room. A health care centre (Klinik Kesihatan) is provided in campus for minor injuries and ailments Transportation services (buses, cars & vans) are provided for PSA students to ensure the involvement of students in formal and informal academic programmes Students are also provided with recreational facilities to support student co-curricular and sport activities. These include sport courts, prayer rooms etc. Several sports facilities are under maintenance. They do not have a significant impact on student activities.

Maintenance of facilities and equipment are in proper order and properly documented. Safety and health practice of the facilities are satisfactory.	YES ✓ NO Remarks: The facilities are well maintained and the overall safety and health practice in the campus area is satisfactory.

Comments/Remarks/Recommendations: ~~Unsatisfactory~~/Satisfactory

Strength	**NIL**
Weakness	**NIL**
Concern	**NIL**
Opportunity for Improvement	**NIL**

7 CRITERION 7: QUALITY MANAGEMENT SYSTEMS

7.1 Institutional Support, Operating Environment, and Financial Resources

(a) Sufficient to assure quality and continuity of the programme

The institutional support and financial resources are sufficient to ensure programme quality and continuity. Support from external bodies is observed.	YES ✓ NO Explain: PSA is fully sponsored by the Ministry of Education Malaysia under the Department of Polytechnic and Community College Education (DPCCE). DPCCE develops strategic plans, manages, monitors and evaluates all education programmes offered at all of its institutions. In terms of governance and management, polytechnic system is a centralised system in which policies and decisions are developed and agreed upon at the central office (DPCCE) with input and feedback

	from all institutions and major stakeholders. Hence, being a very large organisation, DPCCE and polytechnics organisational structure and its quality management system were very structured to define the hierarchy within its organization as each job, function and reporting mechanism are clearly identified towards ensuring the success of each operation and process attain its stipulated vision and mission and allowed for future growth. The PSA established High-Level Management Meeting (AMT) & Management Meeting Committee (AMP) demonstrated good institutional support in ongoing and planned development of the campus. Sufficient budgets were allocated for the Mechanical Engineering Department to ensure the programme's quality and continuity.

(b) Sufficient to attract and retain well-qualified teaching and support staff

The institutional support and financial resources are sufficient for the programme to attract and retain well-qualified academic (take note of employing international academic staff, to comply with BEM regulation to register) and support staff.	YES ✓ NO Explain: Based on policies and mechanisms to appoint, develop and retain qualified staff and development programmes, it is evident that PSA has sufficient resources to attract and retain well-qualified staff. The remunerations offered are on par with those offered at other local Polytechnics. As part of the plan to increase the industrial involvement of academic staff, PSA encourages staff to go for their industrial attachment (SIP)/LSI for a maximum period of 3 months in a year.

	Academic staff is given the opportunities to develop their academic attainment by furthering their education at post-graduate or bachelor's degree level utilizing the scholarships offered with full-pay leave benefit

(c) Sufficient to acquire, maintain, and operate facilities and equipment

The institutional support and financial resources are sufficient for the programme to acquire, maintain and operate facilities and equipment.	YES ✓ NO Explain: The current state of the campus, including its facilities, equipment and surroundings shows that sufficient financial resources and support are available for its development, maintenance and operation. Several seasoned outdoor sports facilities are currently under maintenance, demonstrating the institution's commitment to maintaining these facilities

7.2 Programme Quality Management and Planning

There are established systems towards the improvement of overall programme quality. There are proper and sufficient policies/rules/regulations/procedures in the Department/Faculty or IHL and properly implemented including benchmarking and CQI.	YES ✓ NO Explain: There are established systems to ensure that feedback from various stakeholders can be obtained and used effectively for continuous quality improvement. Recent benchmarking exercises were carried out against, UNIMAP in March 2022 (physical), UTeM & KKTM, Kuantan in July 2022 (physical). There is evidence that the identified gaps are used for programme improvement. The Continual Quality Improvement (CQI) of the academic system is

	carried out according to ISO 21001:2018 Educational Organizations Management Systems (EOMS). PSA has received the certification for MS ISO 21001:2018 since 2022 for the quality management system of its teaching and learning-related processes, including support services.

7.3 External Assessments

(a) External examiners report and how these are being used for quality improvement

EE report 1 in every 3 years. CQI initiated, if necessary, from the report.	YES ✓ NO Remarks: The current external examiner (EE) is Assoc. Prof. Dr. Raja Izamshah Bin Raja Abdullah (since July 2023) from UTEM. There was 1 EE report in Nov 2023. The previous EE report was on May 2021 by Ir. Ts. Dr. Mohamad Ali Ahmad from UiTM Shah Alam. Minutes from the department meetings demonstrated that the department has made good efforts to use the feedback from the external examiner for quality improvement.

(b) Advisory panel from industries and other relevant stakeholders

Industrial Advisory Panel is available. Minutes of meeting 1 in every year. CQI initiated, if necessary, from the minutes.	YES ✓ NO Remarks: There were 6 IAP appointed for Department of Mechanical Engineering from various industries: - En Muhammad Zaim Rosli (Top Glove)

	- En Nasrul Mokhtar (Akademi Bateriku) - En Harun Zainal (Akademi Bateriku) - En Mohd Fadhil Aziz (Panasonic) - Ts. Muhammad Faqrul Reduan (Hicom Diecastings) - Ts. Norsham Ismail (Ideas CAD Technology) The last meeting was conducted in July 2023 with all 6 IAP attended IAP meeting minute for 2021 & 2022 were available, and for 2024, IAP meeting is planned in October 2024. Feedback items by IAP were reviewed and responded with plan of implementation with some already implemented

7.4 Quality Assurance

(a) System for student admission and teaching and learning

The programme has established a working system for student admission and teaching and learning to assure the achievement of the programme outcomes.	YES ✓ NO Explain: Student's admission meets the minimum requirements laid down. Students generally are motivated with programme and accepted by the industry.

(b) System of assessment and evaluation of examinations, projects, industrial training, etc. including preparation and moderation of examination papers

The programme has established a working system for examination regulations including preparation, moderation and assessment of examination papers, projects, industrial training and other forms of learning delivery.	YES ✓ NO Explain: Standard procedures similar to other IHLs are employed for managing exam-related processes, including examination paper preparation and vetting. There is specified SOP for the preparation of

	exam paper, which include the appointment of Examination Committee for the vetting of the examination questions to ensure conformity with the requirements specified in the respective course. Procedures for the assessments of projects and other forms of students' work are in place and widely implemented.

7.5 Safety, Health and Environment

(a) System for managing and implementation of safety, health and environment

There is in place a system for managing and implementation of safety, health and environment.	YES ✓ NO Explain: There is in place a system for managing and implementation of safety, health and environment. A dedicated Occupational Safety & Health (OSH) Management team is established at the department & IHL level. OSH Management team is active in conducting regular trainings for staff and students. The recent fire drill & firefighting demo/training was conducted on 15-Aug-2024.

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	**NIL**
Weakness	**NIL**
Concern	**NIL**
Opportunity for Improvement	**NIL**

EVALUATION PANEL ASSESSMENT REPORT SUMMARY

Overall Comments/Remarks:

Strength	**NIL**
Weakness	**NIL**
Concern	**MAJOR CONCERN** **NIL** **MINOR CONCERN** **NIL**
Opportunity for Improvement	**NIL**
Other remarks	**NIL**
Suggested Discipline	**ENGINEERING**

Date of Visit:	27th – 28th August 2024
Programme Title:	Diploma in Mechanical Engineering
Faculty:	Department of Mechanical Engineering

Response to ETAC Evaluation Panel Report (Appendix D)
Name of Programme: DIPLOMA IN MECHANICAL ENGINEERING

FACTUAL INACCURACIES

ITEM	CRITERION /PAGE / SECTION / PARAGRAPH in Appendix D	COMMENTS BY ETAC	COMMENT / CORRECTION BY IHL	IHL REMARK / EXPLANATION / EVIDENCE
1.	CRITERION 6: FACILITIES	The Fire Alarm Panel in the department's building was not functioning. The repair work is approved under RP4, RMKe-12, the PSA must expedite the process to prevent any undesired incidents from occurring.	Based on the response letter from the Mechanical Engineering Branch, Public Works Department (JKR) of Selangor State dated December 6, 2024, and the allocation approval under RP4 of the 12th Malaysia Plan (RMK-12), JKR has informed about the implementation of the project (refer to Appendix B: Fire Prevention System), with the commencement date for the repair works stated as February 19, 2025.	1. Appendix 1A: Surat Projek Menaiktaraf Fasiliti Politeknik Sultan Salahuddin Abdul Aziz Shah

2.	CRITERION 3: ACADEMIC CURRICULUM	To improve the rubrics to address the assessment of PO.	Based on DKM program structure; i. PLO 7 (version 2024) mapped with DJJ 10223 Engineering Drawing, DJJ 10243 Workshop Technology ii. PLO 8 (version 2019) mapped with DJJ 40132 Engineering and Society All course rubrics have undergone review and corrections in *Bengkel Interpretasi Kurikulum* which has been conducted in 7th January 2025. All courses in DMP and DKM programs were involved included DJJ 10223 Engineering Drawing (PLO7), DJJ 10243 Workshop Technology (PLO7) and DJJ 40132 Engineering and Society (PLO8). The rubrics corrections have been made to map the PO8 to ensure clarity and alignment with the established courses, with endorsement by appointed subject matters expert and verified by head of programme. The rubrics already implemented in Session 2: 2024/2025.	1. Appendix 2A: Laporan Bengkel Interpretasi Kurikulum (7th January 2025) 2. Appendix 2B: DJJ10013 Engineering Drawing (PLO7) 3. Appendix 2C: DJJ 10243 Workshop Technology (PLO7) 4. Appendix 2D: DJJ 40132 Engineering and Society (PLO8)

APPENDIX 1A: SURAT PROJEK MENAIKTARAF FASILITI PSA

JKR CAWANGAN KEJURUTERAAN MEKANIKAL
NEGERI SELANGOR DARUL EHSAN
SEKSYEN 17, 40200 SHAH ALAM
Tel: 03-55194041 Fax: 03-55190360

#KitaSelangor

Ruj.Kami : (40) dlm. JKR.B.MEK.200-3/1/328/P
Tarikh : 06 Disember 2024

TERIMA
26 DEC 2024
BPENT

Jurutera Awam Penguasa Bangunan
JKR Negeri Selangor Darul Ehsan
Persiaran Jubli Perak, Seksyen 17
40200 Shah Alam
SELANGOR DARUL EHSAN.
(u.p: Encik Badrul Hisham Bin Baharom)

Tuan,

Projek	:	**PROJEK MENAIKTARAF FASILITI DI POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA),SHAH ALAM, SELANGOR DARUL EHSAN**
Perkara	:	**PERMOHONAN PENGESAHAN PERUNTUKAN RM 4,900,000.00 (RINGGIT MALAYSIA EMPAT JUTA SEMBILAN RATUS SAHAJA) BAGI SKOP KERJA SISTEM PENYAMAN UDARA DAN SISTEM PENCEGAH KEBAKARAN**

Dengan segala hormatnya saya merujuk kepada yang tersebut di atas.

2. Untuk makluman tuan, wakil pejabat ini telah mengadakan perbincangan dan pemakluman bersama wakil kakitangan PSA pada 3/12/2024 berkaitan skop kerja yang akan dilaksanakan setelah mendapat pengesahan peruntukan.

3. Pihak PSA telah maklum dan bersetuju dengan skop kerja yang akan dilaksanakan seperti di **Lampiran A dan Lampiran B** serta mengikut jadual **Tarikh-Tarikh Penting di Lampiran C.**

4. Namun begitu, bagi mengelakkan sebarang masalah di masa akan datang, pejabat ini ingin memohon pengesahan peruntukan daripada pihak klien sebelum memulakan proses perolehan seperti di Jadual C.

5. Sebarang pertanyaan pihak tuan boleh menghubungi pegawai saya Jurutera Mekanikal **En. Muhammad Fakzan Bin Ghazali** dan Penolong Jurutera **En. Azman Bin Abdul Latif** di talian 03-55194041. Maklumbalas segera daripada tuan amatlah dihargai.

Sekian, terima kasih.

"#KITASELANGOR MAJU BERSAMA"
"MALAYSIA MADANI"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

.....
(Ir. MOHD AZMI BIN ASIF)
Ketua Jurutera Mekanikal Negeri
JKR Caw. Kejuruteraan Mekanikal
Negeri Selangor Darul Ehsan

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PIC	TINDAKAN	/	CATATAN
	URUSKAN		
	PERTIMBANGAN		PPSI
	KIV		TPSA
	CADANGAN		
	SILA HADIR		
	SELARASKAN		cc Pengarah
	MAKLUM BALAS		TVA
	MAKLUMAN		
	FAIL		
	BINCANGKAN		
	TINDAKAN		

29/12

Ruj.Kami :( ) dlm. JKR.B.MEK.200-3/1/328/P
Tarikh : Disember 24

Lampiran A

a.Sistem Penyaman Udara

BIL	CADANGAN FASA	LOKASI	BLOK	JENIS	ANGGARAN KOS (RM)
1	1	JABATAN PENTADBIRAN (BPENT)	A	AHU	920,000.00
2		RUANG PEJABAT PENGARAH	A	AHU	
3		UNIT KEWANGAN	A	AHU	
4	2	DEWAN KULIAH UTAMA	C	AHU	900,000.00
5		JABATAN PENGAJIAN AM (JPAM)	J	FCU	
6		JABATAN MATEMATIK DAN SAINS KOMPUTER (JMSK)	G	AHU	
7	3	PUSAT LINK 1	G	FCU	980,000.00
8		PUSAT LINK 2	G	FCU	
9		MAKMAL CAD 1	G	FCU	
10		MAKMAL CAM 1	G	FCU	
11		MAKMAL CAD 2	G	FCU	
12		MAKMAL CAM 2	G	FCU	
13	4	JABATAN PERDAGANGAN (JPG)	I	AHU	1,000,000.00
14		DEWAN KULIAH JABATAN PERDAGANGAN (JPG)	I	AHU	
15		JABATAN KEJURUTERAAN MEKANIKAL (JKM)	K	AHU	
16		DEWAN KULIAH JABATAN KEJURUTERAAN MEKANIKAL (JKM)	K	AHU	
17	5	JABATAN KEJURUTERAAN AWAM (JKA)	L	AHU	1,000,000.00
18		DEWAN KULIAH JABATAN KEJURUTERAAN AWAM (JKA)	L	AHU	
19		DEWAN KULIAH JABATAN KEJURUTERAAN ELEKTRIK (JKE)	M	AHU	

- Nota: Pejabat ini **AKAN** melaksanakan kerja **FASA 4 & FASA 5** berdasarkan jumlah peruntukan sedia ada seperti jadual yang berwarna kuning diatas. Jadual pada ruang berwarna kuning adalah pilihan utama untuk kerja naiktaraf dan pembaikan sistem penyaman udara.

Ruj.Kami :( ) dlm. JKR.B.MEK.200-3/1/328/P
Tarikh : Disember 24

Lampiran B

b.Sistem Pencegah Kebakaran

BIL	CADANGAN FASA	LOKASI	JENIS	ANGGARAN KOS (RM)
1	1	JABATAN KEJURUTERAAN ELEKTRIK	GEGELUNG HOS/ CONVENTIONAL FIRE ALARM	3,400,000.00
2		JABATAN KEJURUTERAAN AWAM		
3		JABATAN KEJURUTERAAN MEKANIKAL		
4		JABATAN PERDAGANGAN		
5		JABATAN PENGAJIAN AM		
6		RUMAH PAM 3		
7	2	UNIT PENTADBIRAN	GEGELUNG HOS, WET CHEMICAL/ CONVENTIONAL FIRE ALARM	2,200,000.00
8		ANJUNG BESTARI		
9		UNIT LATIHAN DAN PENDIDIKAN LANJUTAN (ULPL)		
10		JABATAN HAL EHWAL PELAJAR (JHEP)		
11		JABATAN MATEMATIK SAINS DAN KOMPUTER (JMSK)		
12		PERPUSTAKAAN		
13		DEWAN MAKAN / CAFETERIA		
14		DEWAN KULIAH UTAMA		
15		DEWAN AL JAZARI		
16		RUMAH PAM 4		
17	3	UNIT BANGUNAN DAN INFRASTRUKTUR (UBI)	GEGELUNG HOS/ CONVENTIONAL FIRE ALARM	700,000.00
18		FASILITI PENGAJIAN (FM)		
19		RUMAH PAM A2		
20	4	KAMSIS DAMAI (ASRAMA PEREMPUAN)	GEGELUNG HOS, WET CHEMICAL/ADDRESSABLE	3,200,000.00
21		KAMSIS AMAN (ASRAMA PEREMPUAN)		
22		KAMSIS SENTOSA (ASRAMA LELAKI)		
23		BLOK KAFETERIA DAN PEJABAT		
24		PONDOK PENGAWAL		
25		RUMAH PAM 1		

- Nota: Pejabat ini **AKAN** melaksanakan kerja **FASA 2 & FASA 3** berdasarkan jumlah peruntukan sedia ada seperti jadual yang berwarna kuning diatas. Jadual pada ruang berwarna kuning adalah pilihan utama untuk kerja naiktaraf dan pembaikan sIstem penyaman udara.

Ruj.Kami :( ) dlm. JKR.B.MEK.200-3/1/328/P
Tarikh : Disember 24

Lampiran C

c. Tarikh-tarikh penting

BIL	PERKARA (Penyaman Udara)	TARIKH
1	IKLAN SEBUTHARGA	20/12/2024
2	TUTUP SEBUTHARGA	27/12/2024
3	SST	15/1/2025
4	MULA KERJA	27/1/2025
5	SIAP KERJA	27/8/2025
6	TEMPOH SIAP KERJA	7 Bulan

BIL	PERKARA (Pencegah Kebakaran)	TARIKH
1	IKLAN SEBUTHARGA	6/1/2025
2	TUTUP SEBUTHARGA	13/1/2025
3	SST	27/1/2025
4	MULA KERJA	19/2/2025
5	SIAP KERJA	19/8/2025
6	TEMPOH SIAP KERJA	6 Bulan

Salinan kepada:-

1. **Pengarah**
Politeknik Sultan Salahuddin Abdul Aziz Shah
Kementerian Pendidikan Tinggi
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
Selangor Darul Ehsan
(u.p: Puan Zainah Binti Rujihan)

LAPORAN PELAKSANAAN PROGRAM

NAMA PROGRAM : BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK

SESI II 2024/2025

TARIKH PROGRAM : 7 JANUARI 2025

TEMPAT : JKM,PSA

Disediakan oleh :

NOOR HAZNIDA BINTI BAKAR

LAPORAN PROGRAM KESELURUHAN

<table>
<tr><td>NAMA PROGRAM</td><td>BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II 2024/2025</td></tr>
<tr><td>TEMPAT PROGRAM</td><td>JKM, PSA</td></tr>
<tr><td>TARIKH PROGRAM</td><td>7 JANUARI 2025</td></tr>
<tr><td>ANJURAN/KERJASAMA (Jika ada)</td><td>TIADA</td></tr>
<tr><td>OBJEKTIF PROGRAM</td><td>3.1 Memahami dengan lebih jelas mengenai falsafah, konsep dan objektif Pendidikan Berasaskan Hasil (OBE).
3.2 Mengenal pasti secara khusus hubungkait Dublin Knowledge Profile (DK, DP dan NA) antara objektif program, hasil program dan hasil pembelajaran, serta dapat melaksanakannya dalam PdP.
3.3 Membangunkan hasil pembelajaran bagi sesuatu mata pelajaran yang selari dengan hasil program. Memberi pengetahuan dan kemahiran kepada pensyarah kursus tentang cara penyediaan Rubric Penilaian Kerja Kursus (PKK) untuk Kursus/Bengkel/Amali.
3.4 Menghasilkan set item yang mencapai standard yang telah ditetapkan.</td></tr>
<tr><td>PERINCIAN PROGRAM DAN AKTIVITI (Jadual jika ada)</td><td>
<table>
<tr><th>Masa / Tarikh</th><th>9.00 - 13.00</th><th>13.00 - 14.00</th><th>14.00-15.00</th><th>15.00 – 17.00</th></tr>
<tr><td>7/1/2025</td><td>Interpretasi Kurikulum OBE & Penjajaran Konstruktif Pemetaan Assessment ke Profil Pengetahuan (DK), Penyelesaian Masalah (DP) dan Aktiviti Kejuruteraan (NA)</td><td>Makan Tengahari/ Solat Zuhur</td><td>Pembentukan Jadual Spesifikasi Ujian Berterusan (CIST)</td><td>Pembinaan rubrik dan semakan oleh SME</td></tr>
</table>
</td></tr>
</table>

PERINCIAN LAPORAN KEWANGAN **i.JUMLAH PERBELANJAAN (Perincian)** **ii.Sumber peruntukan**	TIADA
BILANGAN PESERTA	30 ORANG
BILANGAN PENGLIBATAN/ PENYERTAAN KOMUNITI/BELIA (Jika ada)	TIADA
SENARAI PENCERAMAH JEMPUTAN (Jika ada)	**EN MOHD ZULKARNAEN BIN MOHD IBRAHIM**
PERASMI PROGRAM	**EN MUHAMMAD FAIZ BIN ABDULLAH**
HASIL KAJI SELIDIK / MAKLUM BALAS KOMUNITI/PENERIMA MANFAAT	Seramai 30 pensyarah kursus JKM telah menghadiri kursus BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II 2024/2025. Hasil dapatan dari kursus ini menunjukan pengetahuan dan pemahaman pensyarah kursus terhadap OBE dan pembinaan rubrik jelas dan mereka dapat menghasilkan rubrik yang selaras dengan kehendak kurikulum. Kesemua Rubrik telah disemak oleh Subject Matter Expert (SME) dan pensyarah kursus telah pun membuat permurnian rubrik masing-masing.
GAMBAR AKTIVITI/ PROGRAM	LAMPIRAN 1
SENARAI JAWATANKUASA PELAKSANA	1. Penasihat Muhammad Faiz Bin Abdullah Ketua Jabatan Kejuruteraan Mekanikal 2. Pengarah Program Noor Haznida Binti Bakar Penyelaras Kurikulum JKM 3. Timbalan Pengarah Program Mohd Sharizan Bin Mohd Sharif 4. Setiausaha Amalina Kamilah Binti Ibrahim

	5. Jawatankuasa Persiapan Tempat Mohd Nasir Bin Kamaruddin 6. Jawatankuasa Majlis Perasmian Penutup Roslan Bin Kamaruddin 7. Jawatankuasa Teknikal & Multimedia Muhamad Hanif Bin Selamat
PAUTAN MEDIA CETAK/ MEDIA SOSIAL (Jika ada)	

PENGESAHAN LAPORAN :

Disediakan oleh:

.....
NOOR HAZNIDA BINTI BAKAR
PENYELARAS KURIKULUM

Disahkan oleh:

.....
MUHAMMAD FAIZ BIN ABDULLAH
KETUA JABATAN KEJURUTERAAN MEKANIKAL

LAMPIRAN 1

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
SELANGOR DARUL EHSAN

Tel.: 603-51634000
Faks.: 603-55691903

MEMO

JABATAN KEJURUTERAAN MEKANIKAL

Rujukan kami: 100-1/5/2 jilid 5 (81)	Tarikh: 31/12/2024
Perkara	**Bengkel Intepretasi Kurikulum, OBE dan Pembinaan Rubrik Sesi II:2024/2025**
Kepada	**Seperti Lampiran**
Salinan	**KJMSK, KJPA**
Daripada	**Ketua Jabatan Kejuruteraan Mekanikal**

YBrs. Dr/Tuan/Puan,

Dengan hormatnya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Jabatan Kejuruteraan Mekanikal akan menganjurkan Bengkel Intepretasi Kurikulum, OBE dan Pembinaan Rubrik penilaian berterusan bagi sesi II:2024/2025 seperti ketetapan berikut:

Tarikh : 7 Januari 2025
Masa : 8.00pg – 5.00 ptg
Tempat : Bilik Mesyuarat JKM

3. Sehubungan itu, semua pensyarah yang terlibat secara langsung sebagai tenaga pengajar seperti di Lampiran bagi sesi II 2024/2025 adalah diwajibkan hadir.

Segala kerjasama daripada semua amatlah diharapkan dan didahului dengan ucapan terima kasih.

Sekian, terima kasih.

" MALAYSIA MADANI"

" BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MUHAMMAD FAIZ BIN ABDULLAH)
Ketua Jabatan
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

Lampiran

TENTATIF BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II:2024/2025

Masa **Tarikh**	**9.00 - 13.00**	**13.00 -14.00**	**14.00-15.00**	**15.00 – 17.00**
7/1/2025	Interpretasi Kurikulum OBE & Penjajaran Konstruktif Pemetaan Assessment ke Profil Pengetahuan (DK), Penyelesaian Masalah (DP) dan Aktiviti Kejuruteraan (NA)	Makan Tengahari/ Solat Zuhur	Pembentukan Jadual Spesifikasi Ujian Berterusan (CIST) dan Pembinaan rubrik	Semakan rubrik oleh SME

SENARAI PESERTA BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II:2024/2025

1. MOHD SHARIZAN BIN MOHD SHARIF (KPDKM)
2. MUHAMMAD HANIF BIN SELAMAT (KPDMP)
3. NURUS SADIQIN BT ABDUL RAZAK KHAN (KPKJA)
4. NOOR HAZNIDA BINTI BAKAR (URUSETIA)
5. MOHAMAD KHIRUDIN BIN AMDAN
6. DR. NORASIAH BT MUHAMMAD
7. TS. WAN MAJDAH BINTI TON MAMAT
8. ZETTY ROHAIZA BINTI MOHD SAHAK@ISHAK
9. SHARIZA AZWIN BINTI YAHYA
10. NURAZLINDA BINTI YAHYA @ MUHAMMED
11. TS. NOORAZLAN BIN MOHD SAMSUDDIN
12. ASRI BIN MAT DESA
13. TEOH THEAN HIN
14. DR. KHAIRULNIZAM B. KASIM
15. DR. MOHD SHAHROM BIN ISMAIL
16. ZULKHAIRI B KHAIRUDIN
17. AHMAD FAKARUDDIN BIN MOHD FAUZI
18. MOHD FAUZI BIN DERANI
19. AMALINA KAMILAH BINTI IBRAHIM
20. ALIAS BIN OTHMAN
21. MOHD NASIR BIN KAMARUDDIN
22. ISHAK BIN HASAN
23. MOHD HARIZ BIN SAMIAN
24. WAN NORHAZLIM BT WAN MUSTAFA
25. NORLIDAWATI BINTI MOHAMAD
26. NURHIDAYA BT MUSA
27. DR. MOHD ELIAS BIN DAUD
28. ANI BINTI YAAKUB
29. BRYAN HEE TZE KEON
30. ISNURAINI BINTI KASSIM @ ISMAIL
31. NGAI CHOOI HOONG

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
JABATAN KEJURUTERAAN MEKANIKAL

PROGRAM: BENGKEL INTEPRETASI KURIKULUM & OBE SESI II: 2024/2025

TARIKH: 7 JANUARI 2025 **MASA:** 8.00am – 5.00pm

TEMPAT: BILIK MESYUARAT JKM

PENCERAMAH: EN. MOHD ZULKARNAEN BIN MOHD IBRAHIM

SETIAUSAHA/URUSETIA: NOOR HAZNIDA BINTI BAKAR

SENARAI KEHADIRAN:

BIL	NAMA	JAWATAN	JABATAN/ PUSAT/UNIT	TANDA TANGAN
1	Khairulnizam Kasim	Pensyarah	JKM	
2	Mohd Shahizam Mohd Shauf	KPOKM	JKM	
3	MUHAMMAD HANIF B. SELAMAT	KPPMP	JKM	
4	NURUS SADIQINA R.K	KP KMK	JKM	
5	Amalina Kamilah	PPPT	JKM	
6	Aliff Othman	"	JKM	
7	Noorazlan Mohd Samsuddin	"	"	
8	SYAHRULAZMIN	PPPT	JKM	
9	ASRI BIN MAT DESA	PPPT	JKM	
10	DR. MAZYAN YAHAYA	PPPT	JKM	
11	WAN MAJDAH BINTI TOH MAMAT	PPPT	JKM	
12	NURUL IZZA BT REDZUAN	"	"	
13	ANI BT YAAKUB	"	"	
14	WAN MOHAZLIM W. MUSTAFA	"	JKM	
15	NORSA'AIDAH SA'AID	"	JKM	
16	Nur FARAHAIZAN BT IDRIS	"	JKM	
17	SOMCHAI	"	"	

BIL	NAMA	JAWATAN	JABATAN/ PUSAT/UNIT	TANDA TANGAN
18	Nasir	"	"	[signature]
19	Zul Khairi	"	"	[signature]
20	Ngeri Chooi Hoong	PPPT	JKM	[signature]
21	NURAZLINDA BT YAHYA	PPPT	"	[signature]
22	Khiruddin Amden	PPPT	PPSI	[signature]
23	SKH. MUHAMMAD BIN SKH. ABD. RAHIM	"	JKM	SKH
24	TEOH THEAN HIN	PPPT	JKM	[signature]
25	BRYAN HEE TZE KEON	"	JKM	[signature]
26	Shahrom	"	JKM	[signature]
27	M. ZULKARNAEN M. IBRAHIM	"	JKM	[signature]
28	NURHIDAYA MUSA	"	JKM	[signature]
29	NORASIAH MUHAMMAD	"	JKM	[signature]
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APPENDIX 2B: DJJ10223 Engineering Drawing (PO7)

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH MECHANICAL ENGINEERING DEPARTMENT SESSION: II: 2024/2025	
NAME:	MATRIC NO:
COURSE: **DJJ10223 ENGINEERING DRAWING**	CLASS:
PROGRAMME: **DKM**	
ASSESSMENT/TOPIC: **PRESENTATION TOPIC 4-8** MARKS: _____ / 24 _____ / 100	CLO2 (A3): propose a project presentation with following engineering norms and practices in engineering drawing. PLO7: understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9)

INSTRUCTIONS: Answer all questions in group (3-4 person).

QUESTIONS: (DK9, DP1, DP3, DP5)

Organize a 5-minute recorded video presentation on AutoCAD commands. The presentation should explain each command, its purpose, and provide examples of how it is executed in AutoCAD. Additionally, demonstrate the practical use of the commands within the software. Marks will also be given for ethic and professionalism considerations.

a) How to create and use *Layer Properties*
b) How to create and use *Blocks*
c) How to create and setup *Layout*. Use a sample drawing
d) How to create and setup *Viewport.* Use a sample drawing
e) How to use the *Plot Setup Manager and Plot Command* to print
f) *Inquiry -Radius, Diameter, Angle, Area, Volume and Mass*. Demonstrate the use of all these options
g) How to create styles with *Dimension Style Manager*
h) How to create and modify *Multiline Styles*
i) How to create copies using the ARRAY command (Polar, Path and Rectangle)
j) How does the Drawing Utilities, Recover and Drawing Recovery Manager work?

Upload the report with a Video Presentation to your class MS Teams platform by Wk14.

Prepared by :	Checked by :	Verified by :
(ASRI BIN MAT DESA) Course Coordinator/Course Lecturer Date : 13/1/2025	Ts. DR. HJ. MOHD ELIAS B. DAUD PENSYARAH UTAMA Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah ( ) Head of Programme/Subject Matter Expert/Course Coordinator Date : 13/1/2025	(MOHD SHARIZAN BIN MOHD SHARIF) Head of Department/Head of Programme/Course Leader Date : 13.1.25 MOHD SHARIZAN BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

MECHANICAL ENGINEERING DEPARTMENT
DJJ10223 ENGINEERING DRAWING
RUBRIC: PRESENTATION
SESI II: 2024/2025

PLO	CLO	DK/DP/NA	INSTRUMENTS	LEVEL	ATTRIBUTE	SUB-ATTRIBUTE	Very good (4)	Good (3)	Fair (2)	Poor (1)	SCORE
PLO 7: understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9)	CLO3 : propose a project presentation with following engineering norms and practices in engineering drawing	DK9/ DP1, DP2, DP3	PRESENTATION	A3	Ethics and Professionalism	Engineering Drawing Quality Compliance with standard	Explain and stated clearly the problem. All dimensions are accurate and complete.	Provide moderately problem explanation of the study related to a drawing problem. Accurate dimensions with minor issues.	Some dimensions are inaccurate or incomplete.	Multiple errors in dimensions or incomplete data.	
						Video as Visual Examples of Compliance with standard	Video display all the necessary basic ideas, used some additional links which were all appropriate and enhanced the content. Video was free of technical difficulties	Video display at least one unique or different approach or concept which were all appropriate and enhanced the content. Video was relatively free of technical difficulties.	Video display was basic, linear and adequate but did not contain any unique ideas which enhanced the content of the presentation. Video may have had minor technical problems during the presentation.	Video display had major technical difficulties or did not contain any unique approaches which enhanced the content of the presentation	
						Understanding and Adhering to Professional Ethics	The presentation expresses exceptionally clear, organized, and demonstrates high professionalism	The presentation expresses clear, organized, and professional.	The presentation expresses clear but may lack some degree of professionalism.	The presentation expresses somewhat unclear or lacks professional polish.	
						Compliance with National and International Laws	Propose the best solutions according to ISO standards. Explain clear and relevant objective	Propose a good solution according to ISO standards. Explain clear and relevant objective	Propose two solutions without adherence to specific standards. Moderately explain objective	Propose one objective that relevant to the project	

						Integrity and Professional Ethics in Presentation	Always express high integrity and respects professional ethics during the project presentation.	Express good integrity and ethics with minor shortcomings.	Express integrity and ethics but only at a minimum level.	Express Integrity and ethics are not clearly shown during the project presentation.	
						Adherence to Presentation Format and Structure	The project shows fully follows standard engineering formats and structures.	The project shows generally follows the engineering format with minor shortcomings.	The project shows format and structure meet only the basic requirements.	The project shows format and structure of the presentation are inconsistent with engineering norms.	

*** Reference: Rubrik PNGK Bersepadu: Panduan Pentaksiran Hasil Pembelajaran (iCGPA RUBRIC: LEARNING OUTCOMES ASSESSMENT GUIDE), KPT 2016

Prepared by :	**Checked by :**	**Verified by :**
(ASRI BIN MAT DESA) Course Coordinator/Course Lecturer Date : 13/1/2025	Ts. DR. HJ. MOHD ELIAS B. DAUD PENSYARAH UTAMA Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah ( ) Head of Programme/Subject Matter Expert/Course Coordinator Date : 13/1/2025	(MOHD SHARIZAN BIN MOHD SHARIF) Head of Department/Head of Programme/Course Leader Date : 13/1/25 MOHD SHARIZAN BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
MECHANICAL ENGINEERING DEPARTMENT
SESSION: 2 2024/2025

NAME:	MATRIC NO:
COURSE: **DJJ10243 WORKSHOP TECHNOLOGY**	CLASS:
PROGRAMME:	
ASSESSMENT/TOPIC: **ASSIGMENT TOPIC 5 TOPIC 6**	CLO2 (C3): Apply standard practice in operating mechanical tools and component
MARKS: _____ / 50	PLO7: understand and commit to professional ethics and responsibilities and norms of technician practice and including complience with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9).
_____ / 100	

ANSWER ALL QUESTIONS

1. Sketch and label **TEN (10)** parts of spur gear tooth terms
   Lakar dan labelkan **SEPULUH (10)** terma bahagian spur gear.

   [10 marks]

2. Describe **TWO (2)** methods to inspect the pitch diameter.
   Terangkan **DUA (2)** kaedah untuk memeriksa diameter pitch

   [6 marks]

3. A spur gear has Pitch Diameter (PD) of 168 mm and 48 teeth. Determine:
   Spur gear mempunyai Diameter Pitch (PD) bagi 168mm dan 48mm. Tentukan:

   i. Module (M)
   ii. Outer Diameter (OD)
   iii. Dedendum (D)
   iv. Addendum (A)
   v. Circular Pitch (CP)

   [10 marks]

4. List the advantages of using the computer numerical control machine.
   Senaraikan kebaikan menggunakan mesin computer numerical control.

   [6 marks]

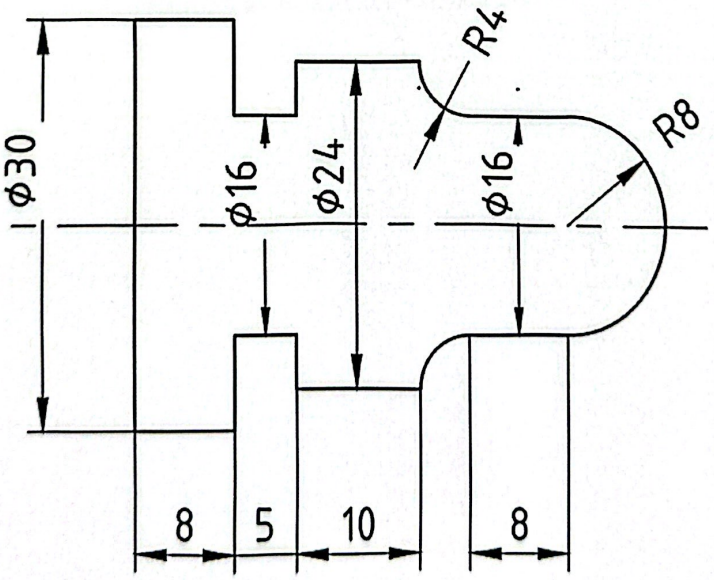
5. Work holding devices is a general term for devices that attach and fix a workpiece to a machine tool. With the aid of diagram, write a function of work piece holding device for:
Alat pemegang benda kerja adalah istilah umum untuk alat yang melekatkan dan menahan benda kerja pada mesin alat. Dengan bantuan rajah, tuliskan fungsi alat pemegang benda kerja;

i. G01
ii. G02
iii. G03

[6 marks]

6. Using ISO 6983, complete table below by referring coordinates in Figure below by method incremental coordinates.
Menggunakan ISO 6983, Lengkapkan jadual di bawah dengan merujuk kepada koordinat dalam Rajah di bawah dengan menggunakan kaedah koordinat tambahan (incremental coordinates)

[12 marks]



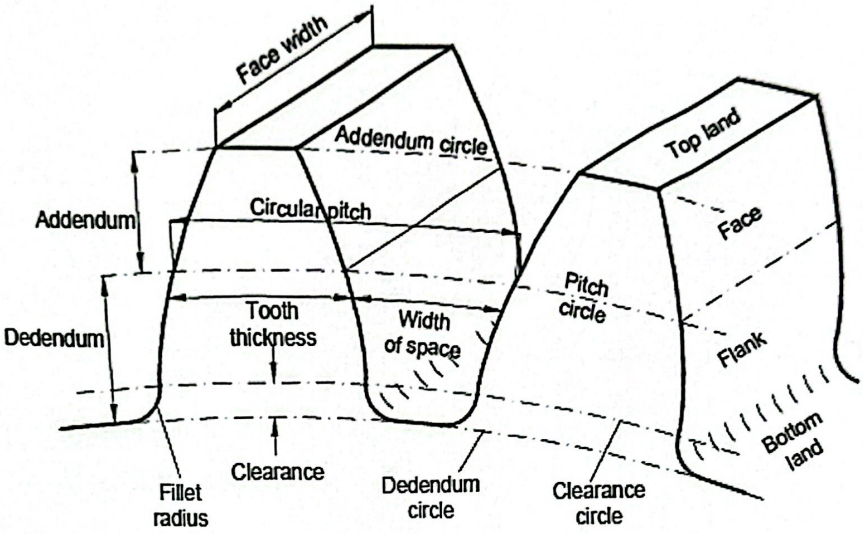
POINT	G Code	Coordinate		POINT	G Code	Coordinate
Coordinate System				**Coordinate System**		
P1				P11		
P2				P12		

P3				P13		
P4				P14		
P5				P15		
P6				P16		
P7						
P8						
P9						
P10						

Prepared by :	Checked by :	Verified by :
(NOORAZLAN MOHD SAMSUDIN) Course Coordinator/Course Lecturer Date : 18/01/2025 Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah	( ) Head of Programme/Subject Matter Expert/Course Coordinator Date : 18/01/2025 DR. KHAIRULNIZAM BIN KASIM PENSYARAH KANAN JABATAN KEJURUTERAAN MEKANIKAL POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH	( ) Head of Department/Head of Programme/ Course Leader Date : 18/01/2025 MOHD SHARIZAN BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah

ANSWER SCHEME

1. Sketch and label the spur gear nomenclature.



[10 marks]

2. Describe 2 method to inspect the pitch diameter.

   i. Measurement with Rollers

   For spur gear, putting Over balls or Rollers to Spacewidth. External gear is measured by outside dimension of Over ball or Rollers. Internal gear is measured by inner dimension of Over balls or Rollers. Use method of Over balls or Rollers for Helical gear. Measurement for Internal gear, this method has advantages over others.

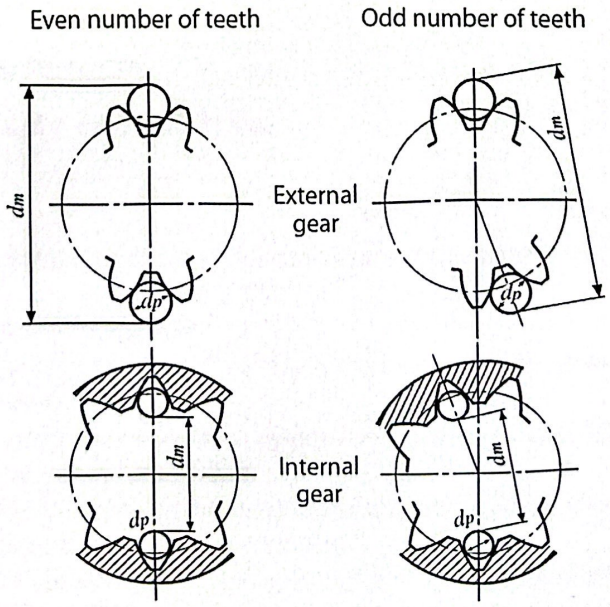
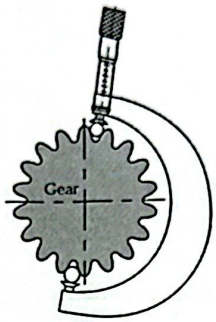


Fig. 12: Method of Rollers

[3 marks]

ii. This micrometre is ideal for the measurement of root tangent length of spur and helical gears.



[3 marks]

3. i. Module (M)

$M = PD/N = 180/36 = 5$

ii. Outer Diameter (OD)

$OD = (N + 2) \times M$

$= (36 + 2) \times 5 \quad = 190$ mm

iii. Dedendum (D)

$D = M \times 1.250 = 5 \times 1.250 = 6.25$ mm

iv. Addendum (A)

$A = M = 5$ mm

v. Circular Pitch (CP)

$CP = \pi M = \pi \times 5 = 15.71$ mm

[15 marks]

4. List the advantages of using the computer numerical control machine.

i. Shorter cutting time
ii. Accuracy of component being machined can be controlled to 3 decimal places.
iii. Training time / period to operate the machine is much less as compared to conventional machining.
iv. Able to obtain components repeatedly for the same shape and size.
v. Machine can be operated safely.
vi. Components with curves and profiles can be machined easily.
vii. While operating the machine, the machine operator need not be too cautious with the job being machined because all movements and cutting has been programmed.

[5 marks]

5. Work holding devices is a general term for devices that attach and fix a workpiece to a machine tool. With the aid of diagram, write a function of work piece holding device for;

   i. G01

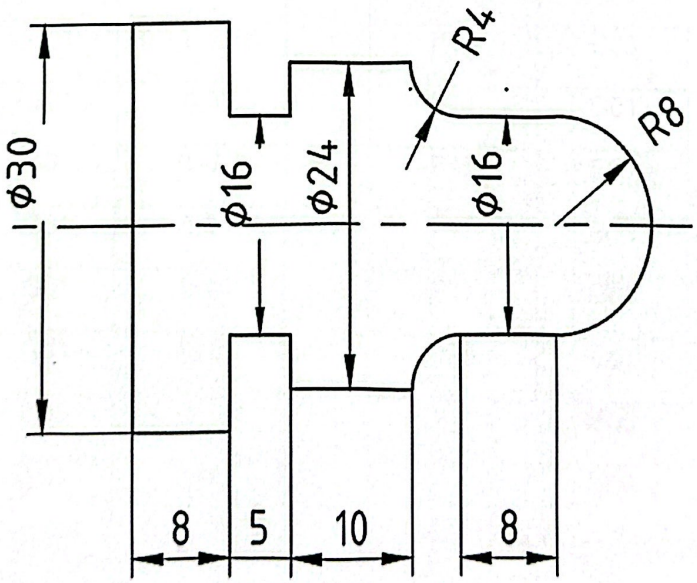
   ii. G02

   iii. G03

[6 marks]

G01	Straight Line Cutting Motion
G02	Circular Cuttion Motion Clockwise (CW)
G03	Circular Cuttion Motion Counter Clockwise (CCW)

6. Using ISO 6983, complete table below by referring coordinates in Figure below by method incremental coordinates.



POINT	G Code	Coordinate		POINT	G Code	Coordinate
Coordinate System	G90 – Absolute S1000 T03 M03 F250			Coordinate System	G90 - Absolute	
P1	G00	0,0		P12	G01	27,7
P2	G01	0,30 M08		P13	G03	23,3 – r4
P3	G01	8,30		P14	G01	13,3
P4	G01	8,23		P15	G01	13,7

P5	G01	13,23		P16	G01	8,7
P6	G01	13,27		P17	G01	8,0
P7	G01	23,27		P18	G01	0,0
P8	G03	27,23 - r4		M05		
P9	G01	35,23		M09		
P10	G02	43,15 – r8		M00/M01/M02/M30		
P11	G02	35,7 – r8				

[20 Marks]

POINT	G Code	Coordinate		POINT	G Code	Coordinate
Coordinate System	**G91 – Incremental S1000 T03 M03 F250**			**Coordinate System**	**G90 - Absolute**	
P1	G00	0,0		P12	G01	-8,0
P2	G01	0,30 M08		P13	G03	-4,-4 r4
P3	G01	8,0		P14	G01	-10,0
P4	G01	0,-7		P15	G01	0,4
P5	G01	5,0		P16	G01	-5,0
P6	G01	0,4		P17	G01	0,-7
P7	G01	10,0		P18	G01	-8,0
P8	G03	4,-4 r4		M05		
P9	G01	8,0		M09		
P10	G02	8,-8 r8		M00/M01/M02/M30		
P11	G02	-8,-8 r8				

Prepared by :	Checked by :	Verified by :
( )	( )	( )
Course Coordinator/Course Lecturer	Head of Programme/Subject Matter Expert/Course Coordinator	Head of Department/Head of Programme/Course Leader
Date : 18/01/2025	Date : 18/01/2025	Date : 18/01/2025

NOORAZLAN B. MOHD SHARIF
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

DR. KHAIRULNIZAM BIN KASIM
PENSYARAH KANAN
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

MOHD SHARIZAN BIN MOHD SHARIF
Ketua Program Mekanikal Am
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
MECHANICAL ENGINEERING DEPARTMENT
SESSION: II 2024/2025

NAME:	MATRIC NO:
COURSE: **DJJ10243 WORKSHOP TECHNOLOGY**	CLASS:
PROGRAMME:	
ASSESSMENT/TOPIC: **CASE STUDY TOPIC 7**	CLO 2: Apply standard practice in operating mechanical tools and component PLO 7: Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9).
MARKS: _____ / 50	
_____ / 100	

INTRUCTIONS: Answer all questions in group (2-4 person).

QUESTIONS: (C3, DP1, DP3, DP5)

Alpha Steelworks Sdn. Bhd. has been tasked with manufacturing a welded steel frame for an industrial warehouse project. The project specifications demand a high-strength frame capable of supporting significant loads, and the final product must comply with ISO 9606 and ASME welding standards. Based on the scenario, discuss the following:

i) The steps involved in manufacturing the steel frame product.
ii) Proper use and handling of tools during the welding process.
iii) The appropriate welding methods to use and why they are suitable for this product.
iv) The ethical responsibilities of the welding team and project supervisor in ensuring quality, safety, and adherence to standard practices.

WRITING FORMAT

Using font Arial 11, with spacing of 1.5, the writing must be justified with according to the required format. All the figures must be properly labeled and elaborate. Writing should content this element, to ensure student follow the rubrics guideline given;

i) Introduction / Define welding products
ii) Mechanical tools and component (Recognize the use of tools and handling)
iii) Methods or SOP of Welding used (Welding discussion)
iv) Best Practices / Conclusion
v) References
vi) Appendix

Notes:

i. Professional Ethics and responsibilities refer to values and code of practices that should be followed by a professional in applying knowledge of his/her discipline and career.
ii. Norms of technician practices refers to attributes of an individual such as his/her ability, skills and implementation methods as expected to be within or to be performed by a professional.

iii. Any assignment with elements of plagiarism, copying, or similarities of content, or sentence structure academic dishonors will not be given any marks

Prepared by :	Checked by :	Verified by :
( )	( )	( )
Course Coordinator/Course Lecturer	Head of Programme/Subject Matter Expert/Course Coordinator	Head of Department/Head of Programme/ Course Leader
Date : 13/1/2025	Date : 13/1/2025	Date : 13/1/2025

DR. KHAIRUL NIZAM BIN KASIM
PENSYARAH KANAN
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

MOHD SHARIZAN BIN MOHD SHARIF
Ketua Program Mekanikal Am
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

MECHANICAL ENGINEERING DEPARTMENT
DJJ10243 WORKSHOP TECHNOLOGY
CASE STUDY RUBRIC
SESI II: 2024/2025

PLO	CLO	DK/ DP/ NA	INSTRUMENTS	LEVEL	ATTRIBUTES	SUB ATTRIBUTES	Excellent (5)	Very good (4)	Good (3)	Fair (2)	Poor (1)	SCORE
PLO 7: Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9).	CLO 2: Apply standard practice in operating mechanical tools and component	DK9 DP1 DP3 DP5	REPORT WRITING	C3	Norms of technician practice	Steps to Creating the Welding Product	Write a completion of the product as per design specifications. Accuracy in measurements, preparation, and setup.	Executes steps efficiently; high accuracy in product creation.	Completes steps in proper order with minor errors.	Partially follows the sequence; frequent errors in setup.	Misses critical steps; product fails to meet specifications.	
						The Use of Tools and Handling	Show masterful tool use with outstanding safety and maintenance practices.	Demonstrates proficient handling; ensures proper tool care.	Uses tools appropriately; follows basic safety protocols.	Inconsistent tool selection; occasional unsafe practices.	Frequently uses incorrect tools or mishandles equipment.	
						Methods of Welding Used	Demonstrates mastery of norms. Adherence to welding standards (e.g., precision, strength, and quality of welds).	Consistently applies norms with few errors.	Adheres to norms with minor deviations.	Inconsistently applies norms; needs reminders.	Rarely follows norms or standards.	
					Professional ethics and responsibilities	Compliance with Standards	Shows the highest standards of ethics.	Consistently ethical and responsible.	Generally ethical; occasional lapses.	Occasionally acts unethically or irresponsibly.	Rarely demonstrates ethical behavior.	
						Prioritizing Safety	Write an exemplary use of PPE; sets an example for safety. Ensures equipment and tools are stored safely and correctly.	Always uses PPE correctly and encourages others to do so.	Consistently uses PPE with minor lapses.	Occasionally forgets PPE or uses it incorrectly.	Rarely wears appropriate PPE; puts self and others at risk.	

						Transparency and Accountability	Always show reliable, proactive, and motivated. Submitted report before deadlines.	Exceeds expectations with strong accountability.	Meets deadlines with adequate accountability.	Occasionally unreliable; minimal initiative.	Frequently misses deadlines; lacks accountability.	
						Environmental Responsibility	Show awareness and application of environmentally friendly practices. Minimizes waste and efficiently uses materials. Share Proper disposal of hazardous materials (e.g., slag, scrap metal).	Proactively manages waste and reduces environmental impact.	Follows basic environmental practices with minimal waste.	Occasionally fails to dispose of materials responsibly.	Disregards waste management and environmental impact.	
						Integrity in Quality Assurance	Always demonstrates high integrity and respects professional ethics in the report.	Demonstrates good integrity and ethics with minor shortcomings.	Demonstrates integrity and ethics but only at a minimum level.	Integrity and ethics are not clearly shown in the report.		
											TOTAL	/25

* Reference: Rubrik PNGK Bersepadu: Panduan Pentaksiran Hasil Pembelajaran (iCGPA RUBRIC: LEARNING OUTCOMES ASSESSMENT GUIDE), KPT 2016

Prepared by :	**Checked by :**	**Verified by :**
(NOORAZLAN B. MOHD RAMLI) Course Coordinator/Course Lecturer Date : 13/1/2025 Pensyarah Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah	(DR. KHAIRULNIZAM BIN KASIM) PENSYARAH KANAN JABATAN KEJURUTERAAN MEKANIKAL POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH Head of Programme/Subject Matter Expert/Course Coordinator Date : *13/1/2025*	(MOHD SHARIZAN BIN MOHD SHARIF) Head of Department/Head of Programme/Course Leader Date : *13/1/2025* MOHD SHARIZAN BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah

APPENDIX 2D: DJJ40132 ENGINEERING AND SOCIETY

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH MECHANICAL ENGINEERING DEPARTMENT SESSION II : 2024/2025	
NAME:	MATRIC NO.:
COURSE: **DJJ40132 ENGINEERING & SOCIETY**	CLASS:
PROGRAMME : **DIPLOMA IN MECHANICAL ENGINEERING (DKM)**	
ASSESSMENT/TOPIC **PRESENTATION/ TOPIC 4,5,6**	CLO2: Determine the important of work ethics, bylaws and professionalism in engineering profession. (C4,PLO8) CLO3: Determine the needs for sustainable and green engineering towards providing the solutions in engineering field. (C4,PLO7) PLO8: understand and commit to professional ethics and responsibilities and norms of technician practice and including complience with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK7). PLO7: function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings (DK7).
MARKS : _____/50	
_____/100	

INSTRUCTION: Answer all questions in group (3-4 person). Then create a 10-minute presentation with slides summarizing your findings, supported by case studies, data, and visuals.

QUESTION 1

Engineering management is important in ensuring project success. Analyze the main role in engineering management and how does it affect the achievement of engineering projects.
[CLO2, C4, DK7, DP1, DP4, DP5]

(25 marks)

QUESTION 2

Determine the engineers contribution in promoting sustainable and green engineering practices in their companies or organizations.
[CLO3, C4, DK7, DP1, DP4, DP5]

(25 marks)

Prepared by :	Checked by :	Verified by :
(SYAHRULAZMIN SAKMIN) Course Coordinator/Course Lecturer Date : 14/1/25	DR. KHAIRULNIZAM BIN KASIM (PENSYARAH KANAN) JABATAN KEJURUTERAAN MEKANIKAL POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH Head of Programme/Subject Matter Expert/Course Coordinator Date : 14/1/25	(MOHD SHARIZAN BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah Head of Department/Head of Programme/Course Leader Date : 14/1/25

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

MECHANICAL ENGINEERING DEPARTMENT
DJJ40132 ENGINEERING AND SOCIETY
RUBRIC: PRESENTATION
SESI II: 2024/2025

PLO	CLO	DK/ DP/ NA	INST.	LEVEL	ATTRIBUTE	SUB ATTRIBUTE	Excellent (5)	Very good (4)	Good (3)	Fair (2)	Poor (1)	SCORE
PLO8: understand and commit to professional ethics and responsibilities and norms of technician practice	CLO 2:Determine the important of work ethics, bylaws and professionalism in engineering profession	DK7/ DP1, DP4, DP6	PRESENTATION	C4	Ethic and professionalism	Content Quality, Use of Visuals and Supporting Materials	Content is highly analyzed relevant, thoroughly detailed, and insightful, with strong connections to the topic. Visuals and materials are engaging, professional, and effectively support the content.	Content is mostly analyzing relevant, detailed, and demonstrates good understanding . Visuals and materials enhance the presentation and are mostly well-designed.	Content is somewhat relevant and moderately detailed but misses critical points. Visuals and materials are somewhat relevant but lack polish or integration.	Limited relevance or shallow discussion of key concepts. Minimal or poorly designed visuals and supporting materials.	The content is irrelevant or lacks depth, with minimal understanding of the topic. Visuals are missing or irrelevant, with no supporting materials.	
						Compliance with standard National and International Laws	Always demonstrates high integrity and respects professional ethics during the presentation.	Demonstrates good integrity and ethics with minor shortcomings.	Demonstrates integrity and ethics but only at a minimum level.	Integrity and ethics are not clearly shown during the presentation.	Integrity and ethics are not shown during the project presentation.	
						Transparency and Accountability	Always show reliable, proactive, and motivated. Punctuality	Exceeds expectations with strong accountability.	Meets deadlines with adequate accountability.	Occasionally unreliable; minimal initiative.	Frequently misses deadlines; lacks accountability.	

							and ready for presentation					
						Integrity and Professional Ethics in Presentation	Always demonstrates high integrity and respects professional ethics in the presentation	Demonstrates good integrity and ethics with minor shortcomings.	Demonstrates integrity and ethics but only at a minimum level.	Integrity and ethics are not clearly shown in the report.	Integrity and ethics are not shown in the report.	
						Understanding and Adhering to Professional Ethics	Ethics and professionalism are thoroughly discussed and integrated into the presentation.	Ethics and professionalism are integrated and appropriately addressed.	Some discussion of ethics and professionalism, but lacks depth.	Minimal reference to ethics or professionalism, lacking integration.	Very Poor: No mention or application of ethical or professional standards.	
											SUB TOTAL	**/25**

* Reference: Rubrik PNGK Bersepadu: Panduan Pentaksiran Hasil Pembelajaran (iCGPA RUBRIC: LEARNING OUTCOMES ASSESSMENT GUIDE), KPT 2016

PLO	CLO	DK/ DP/ NA	INST.	LEVEL	ATTRIBUTE	SUB ATTRIBUTE	Excellent (5)	Very good (4)	Good (3)	Fair (2)	Poor (1)	SCORE
PLPLO7: understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts (DK7)	CLO 3: Determine the needs for sustainable and green engineering towards providing the solutions in engineering field	DK7/ DP1, DP4, DP6	PRESENTATION	C4	Environment and Sustainability	Environmental Impact Assessment	Comprehensive assessment with innovative and impactful mitigation strategies.	Clear identification of environmental impacts with effective mitigation plans.	Some identification of environmental impacts with basic mitigation strategies.	Minimal attention to environmental impacts; few mitigation strategies.	No consideration of environmental impacts or measures to mitigate harm.	
						Sustainability Integration	Sustainability is central to the project, with innovative solutions and significant long-term benefits.	Sustainability principles are well integrated, with measurable outcomes.	Sustainability principles are somewhat addressed but lack thorough application.	Minimal integration of sustainability principles; unclear outcomes.	No integration of sustainability principles in the project.	
						Ethics and Professionalism in Environmental Responsibility	The presentation demonstrates exceptional ethical and professional standards, prioritizing environmental responsibility at all levels.	Ethics and professionalism are integrated into the project with clear commitments to environmental responsibility.	Some consideration of ethical and professional responsibility, but inconsistent application.	Limited acknowledgment of ethical and professional obligations in environmental practices.	No demonstration of ethical or professional responsibility toward the environment.	
						Community and Stakeholder Engagement	Active collaboration with stakeholders, addressing	Stakeholder engagement is meaningful, with efforts to incorporate	Some stakeholder engagement; community needs are	Minimal stakeholder engagement; little	No effort to engage or consider community and	

							community needs with impactful solutions.	community input.	acknowledged but not deeply addressed.	consideration of community needs or concerns.	stakeholder perspectives.	
						Resource Efficiency	Excellent: Exceptional resource efficiency, with innovative practices to eliminate waste and maximize sustainability.	Resources are used efficiently, with waste minimized and sustainability maximized.	Some resource efficiency measures are implemented, but improvements are needed.	Limited efforts to minimize waste or maximize resource efficiency.	Resources are used inefficiently, with significant waste or harm to the environment.	
											SUB TOTAL	**/25**

* Reference: Rubrik PNGK Bersepadu: Panduan Pentaksiran Hasil Pembelajaran (iCGPA RUBRIC: LEARNING OUTCOMES ASSESSMENT GUIDE), KPT 2016

Prepared by :	**Checked by :**	**Verified by :**
(SYAHRULAZMIN BIN SARMIN) Course Coordinator/Course Lecturer Date : 14/1/25	DR. KHAIRUL NIZAM BIN KASIM PENSYARAH KANAN JABATAN KEJURUTERAAN MEKANIKAL POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH ( ) Head of Programme/Subject Matter Expert/Course Coordinator Date : 14/1/25	(MOHD SHARIZAN BIN MOHD SHARIF) Head of Department/Head of Programme/Course Leader Date : MOHD SHARIZAN BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah 14/1/25

TERIMA
04 JUL 2024
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI
Galeria PjH, Aras 4, Jalan P4W
Persiaran Perdana, Presint 4
62100 W.P. PUTRAJAYA
Tel : 03-88919000
Faks : 03-88919056

Ruj. Kami : JPPKK.BK. 600-1/3/2 Jld.7 (5)
Tarikh : 02 Julai 2024

Timbalan Pengarah (Akademik)
Pegawai Kualiti
Ketua Program

Melalui:
Pengarah
(Seperti senarai edaran di Lampiran 1)

YBrs. Ts./Dr./ Tuan/ Puan,

SURAT PEKELILING KURIKULUM BIL. 4 TAHUN 2024 BAGI PELAKSANAAN KURIKULUM SESI I 2024/2025 PROGRAM PENGAJIAN PERINGKAT DIPLOMA POLITEKNIK KEMENTERIAN PENDIDIKAN TINGGI

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Mesyuarat Lembaga Kurikulum Kursus Pengajian dan Program Latihan di Politeknik (MLK) Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) Bil. 1/2024 bertarikh 6 Jun 2024 telah meluluskan empat puluh (40) program pengajian peringkat diploma politeknik bersama-sama dengan kursus-kursus Pengajian Am, Matematik, Sains, Komputer dan Matapelajaran Umum (MPU). Maklumat program yang terlibat adalah seperti di Lampiran 2.

3. Sehubungan dengan itu, penggunaan dokumen kurikulum bermula Sesi I 2024/2025 tersebut adalah seperti ketetapan berikut:

i. Pelajar baharu Semester 1 akan mengguna pakai dokumen kurikulum versi Baharu yang diluluskan ini bermula Sesi I 2024/2025.
ii. Pelajar kohort Semester 2 dan ke atas akan mengguna pakai dokumen kurikulum versi terdahulu yang berkuatkuasa sehingga tamat pengajian.

4. Justeru, **penggunaan dokumen kurikulum ini berkuatkuasa pada Sesi I 2024/2025**. Dokumen kurikulum tersebut akan dimuat naik secara berperingkat dan boleh dimuat turun melalui **laman portal CIDOS (http://portal.cidos.edu.my) mulai 5 Julai 2024.**

5. Sebagai dokumen terhad, maka tatacara pengendalian dokumen yang perlu dipatuhi adalah seperti tersebut:

i. Dokumen ini diklasifikasikan sebagai **DOKUMEN TERHAD/*RESTRICTED*** dan pengedarannya adalah terhad kepada tenaga pengajar di institusi sahaja. Edaran *softcopy* dan *hardcopy* adalah tidak dibenarkan kepada pihak luar.

ii. Edaran salinan *(softcopy atau hardcopy)* perlu disahkan oleh pegawai kualiti institusi.

iii Pegawai yang bertanggungjawab perlu memastikan proses kawalan dokumen dipatuhi dan mengikut sistem pengurusan kualiti institusi masing-masing.

6 Sebarang pertanyaan dan maklumat lanjut berkaitan perkara ini boleh diajukan kepada pegawai di Bahagian Kurikulum seperti berikut:

	Nama	Emel	No. Telefon
i.	Puan Marzita binti Muhamad Tazi	marzita@mohe.gov.my	03-88919029
ii.	Dr. Rohaniah binti Mohd Nor	rohaniah.mohdnor@mohe.gov.my	03-88919020
iii.	Dr. Zanatul Shima binti Aminuddin	zanatul.shima@mohe.gov.my	03-88919125

Perhatian dan kerjasama daripada pihak YBrs.Ts./Dr./tuan/puan berhubung perkara ini amat dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DR. ZAMZAM BIN MOHD WALID)
Pengarah
Bahagian Kurikulum
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Tinggi

s.k.:
1. Pengarah Bahagian Instruksional dan Pembelajaran Digital
2. Pengarah Bahagian Peperiksaan dan Penilaian
3. Pengarah Bahagian Governan dan Kecemerlangan

Jabatan Pendidikan Politeknik dan Kolej Komuniti

Lampiran 1

SENARAI EDARAN

BIL.	PROGRAM	MELALUI PENGARAH
1.	DIPLOMA KEJURUTERAAN ELEKTRIK (KECEKAPAN TENAGA)/ *DIPLOMA IN ELECTRICAL ENGINEERING (ENERGY EFFICIENCY)* (DEQ)	POLITEKNIK PORT DICKSON
2.	DIPLOMA KEJURUTERAAN ELEKTRIK/ *DIPLOMA IN ELECTRICAL ENGINEERING* (DET)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KOTA BHARU 3. POLITEKNIK PORT DICKSON 4. POLITEKNIK MERLIMAU 5. POLITEKNIK SULTAN AZLAN SHAH 6. POLITEKNIK TUANKU SULTANAH BAHIYAH 7. POLITEKNIK MERSING
3.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN ELEKTRONIK/ *DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING* (DEE)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK KOTA BHARU 5. POLITEKNIK KUCHING SARAWAK 6. POLITEKNIK KOTA KINABALU 7. POLITEKNIK IBRAHIM SULTAN 8. POLITEKNIK SEBERANG PERAI 9. POLITEKNIK KUALA TERENGGANU. 10. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 11. POLITEKNIK TUANKU SULTANAH BAHIYAH 12. POLITEKNIK MUKAH SARAWAK 13. POLITEKNIK MERSING
4.	DIPLOMA KEJURUTERAAN ELEKTRIK (TENAGA HIJAU)/ *DIPLOMA IN ELECTRICAL ENGINEERING (GREEN ENERGY)* (DEG)	POLITEKNIK PORT DICKSON

Lampiran 1

BIL.	PROGRAM	MELALUI PENGARAH
5.	DIPLOMA KEJURUTERAAN ELEKTRONIK(KOMUNIKASI)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMMUNICATION)* (DEP)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK KOTA BHARU 5. POLITEKNIK KUCHING SARAWAK 6. POLITEKNIK PORT DICKSON 7. POLITEKNIK KOTA KINABALU 8. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 9. POLITEKNIK IBRAHIM SULTAN 10. POLITEKNIK SEBERANG PERAI 11. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 12. POLITEKNIK MERLIMAU 13. POLITEKNIK SULTAN AZLAN SHAH 14. POLITEKNIK TUANKU SULTANAH BAHIYAH 15. POLITEKNIK SULTAN IDRIS SHAH 16. POLITEKNIK TUANKU SYED SIRAJUDDIN 17. POLITEKNIK MUKAH SARAWAK
6.	DIPLOMA KEJURUTERAAN ELEKTRONIK(PERUBATAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (MEDICAL)* (DEU)	POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
7.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KAWALAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (CONTROL)* (DJK)	1. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 2. POLITEKNIK IBRAHIM SULTAN 3. POLITEKNIK MELAKA

Lampiran 1

BIL.	PROGRAM	MELALUI PENGARAH
8.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KOMPUTER)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMPUTER)* (DTK)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK PORT DICKSON 4. POLITEKNIK KOTA KINABALU 5. POLITEKNIK SEBERANG PERAI 6. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 7. POLITEKNIK MERLIMAU 8. POLITEKNIK SULTAN AZLAN SHAH 9. POLITEKNIK TUANKU SULTANAH BAHIYAH 10. POLITEKNIK SULTAN IDRIS SHAH 11. POLITEKNIK TUANKU SYED SIRAJUDDIN
9.	DIPLOMA KEJURUTERAAN AWAM/ *DIPLOMA IN CIVIL ENGINEERING* (DKA)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK KOTA BHARU 5. POLITEKNIK KUCHING SARAWAK 6. POLITEKNIK PORT DICKSON 7. POLITEKNIK KOTA KINABALU 8. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 9. POLITEKNIK MELAKA 10. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 11. POLITEKNIK MERLIMAU 12. POLITEKNIK SULTAN AZLAN SHAH 13. POLITEKNIK TUANKU SULTANAH BAHIYAH 14. POLITEKNIK SULTAN IDRIS SHAH 15. POLITEKNIK MUKAH SARAWAK

Lampiran 1

BIL.	PROGRAM	INSTITUSI
10.	DIPLOMA UKUR BAHAN/ *DIPLOMA IN QUANTITY SURVEYING* (DUB)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KOTA BHARU 3. POLITEKNIK KOTA KINABALU 4. POLITEKNIK SULTAN AZLAN SHAH
11.	DIPLOMA KEJURUTERAAN ALAM SEKITAR/ *DIPLOMA IN ENVIRONMENTAL ENGINEERING* (DAS)	POLITEKNIK SULTAN IDRIS SHAH
12.	DIPLOMA KEJURUTERAAN PERKHIDMATAN BANGUNAN/ *DIPLOMA IN BUILDING SERVICES ENGINEERING* (DPB)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KUCHING SARAWAK 3. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 4. POLITEKNIK SULTAN AZLAN SHAH
13.	DIPLOMA SENIBINA/ *DIPLOMA IN ARCHITECTURE* (DSB)	1. POLITEKNIK UNGKU OMAR (POLITEKNIK PREMIER) 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK PORT DICKSON 5. POLITEKNIK MERLIMAU 6. POLITEKNIK SULTAN IDRIS SHAH
14.	DIPLOMA TEKNOLOGI BERASASKAN KAYU/ *DIPLOMA IN WOOD-BASEDTECHNOLOGY* (DBK)	1. POLITEKNIK KOTA KINABALU 2. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
15.	DIPLOMA PERANCANGAN BANDAR DAN WILAYAH/ *DIPLOMA IN TOWN AND REGIONAL PLANNING* (DPW)	POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH

Lampiran 1

BIL.	PROGRAM	INSTITUSI
16.	DIPLOMA GEOMATIK/ *DIPLOMA IN GEOMATIC* (DGU)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK KUCHING SARAWAK 4. POLITEKNIK MERLIMAU 5. POLITEKNIK TUANKU SULTANAH BAHIYAH
17.	DIPLOMA KEJURUTERAAN PENYENGGARAAN PESAWAT/ *DIPLOMA ENGINEERING IN AIRCRAFT MAINTENANCE* (DAM)	POLITEKNIK BANTING
18.	DIPLOMA KEJURUTERAAN MEKANIKAL/ *DIPLOMA IN MECHANICAL ENGINEERING* (DKM)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK KOTA BHARU 4. POLITEKNIK KUCHING SARAWAK 5. POLITEKNIK PORT DICKSON 6. POLITEKNIK KOTA KINABALU 7. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 8. POLITEKNIK IBRAHIM SULTAN 9. POLITEKNIK SEBERANG PERAI 10. POLITEKNIK MELAKA 11. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 12. POLITEKNIK MERLIMAU 13. POLITEKNIK SULTAN AZLAN SHAH 14. POLITEKNIK TUANKU SULTANAH BAHIYAH 15. POLITEKNIK TUANKU SYED SIRAJUDDIN 16. POLITEKNIK MUKAH SARAWAK 17. POLITEKNIK NILAI 18. POLITEKNIK BANTING

Lampiran 1

BIL.	PROGRAM	INSTITUSI
19.	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMASI)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMATION)* (DMA)	POLITEKNIK MUADZAM SHAH
20	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMOTIF)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE)* (DAD)	1. POLITEKNIK UNGKU OMAR (POLITEKNIK PREMIER) 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK KOTA BHARU 4. POLITEKNIK KUCHING SARAWAK 5. POLITEKNIK PORT DICKSON 6. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 7. POLITEKNIK SULTAN AZLAN SHAH
21.	DIPLOMA KEJURUTERAAN MEKANIKAL (BAHAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MATERIAL)* (DMB)	POLITEKNIK IBRAHIM SULTAN
22.	DIPLOMA KEJURUTERAAN MEKANIKAL (PEMBUATAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)* (DTP)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KUCHING SARAWAK 3. POLITEKNIK PORT DICKSON 4. POLITEKNIK KOTA KINABALU 5. POLITEKNIK IBRAHIM SULTAN (POLITEKNIK PREMIER) 6. POLITEKNIK SEBERANG PERAI 7. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 8. POLITEKNIK MERLIMAU 9. POLITEKNIK SULTAN AZLAN SHAH 10. POLITEKNIK TUANKU SULTANAH BAHIYAH 11. POLITEKNIK MUADZAM SHAH 12. POLITEKNIK BANTING

Lampiran 1

BIL.	PROGRAM	INSTITUSI
23.	DIPLOMA KEJURUTERAAN MEKANIKAL (PENYAMANAN UDARA DAN PENYEJUKBEKUAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AIR CONDITIONING AND REFRIGERATION)* (DPU)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK KUCHING SARAWAK
24.	DIPLOMA KEJURUTERAAN MEKANIKAL (PERTANIAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AGRICULTURAL)* (DPT)	POLITEKNIK KOTA BHARU
25.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PEMBUATAN AUTOMOTIF)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE MANUFACTURING DESIGN)* (DRA)	POLITEKNIK MUADZAM SHAH
26.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PRODUK)/ *DIPLOMA IN MECHANICAL ENGINEERING (PRODUCT DESIGN)* (DRP)	POLITEKNIK MUADZAM SHAH
27.	DIPLOMA KEJURUTERAAN MEKANIKAL (PETROKIMIA)/ *DIPLOMA IN MECHANICAL ENGINEERING (PETROCHEMICAL)* (DPC)	POLITEKNIK TUN SYED NASIR SYED ISMAIL

Lampiran 1

BIL.	PROGRAM	INSTITUSI
28.	DIPLOMA KEJURUTERAAN MEKATRONIK/ *DIPLOMA IN MECHATRONICS ENGINEERING* (DEM)	1. POLITEKNIK UNGKU OMAR (POLITEKNIK PREMIER) 2. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 3. POLITEKNIK KOTA BHARU 4. POLITEKNIK PORT DICKSON 5. POLITEKNIK KOTA KINABALU 6. POLITEKNIK IBRAHIM SULTAN (POLITEKNIK PREMIER) 7. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 8. POLITEKNIK MERLIMAU 9. POLITEKNIK SULTAN AZLAN SHAH 10. POLITEKNIK TUANKU SULTANAH BAHIYAH 11. POLITEKNIK NILAI
29.	DIPLOMA KEJURUTERAAN PERKAPALAN/ *DIPLOMA IN MARINE ENGINEERING* (DKP)	POLITEKNIK UNGKU OMAR
30.	DIPLOMA KEJURUTERAAN PROSES (PETROKIMIA)/ *DIPLOMA IN PROCESS ENGINEERING (PETROCHEMICAL)* (DPE)	1. POLITEKNIK KUCHING SARAWAK 2. POLITEKNIK TUN SYED NASIR SYED ISMAIL
31.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN INSTRUMENTASI/ *DIPLOMA IN ELECTRICAL AND INSTRUMENTATION ENGINEERING* (DEI)	POLITEKNIK TUN SYED NASIR SYED ISMAIL
32.	DIPLOMA KEJURUTERAN KIMIA/ *DIPLOMA IN CHEMICAL ENGINEERING* (DCE)	POLITEKNIK TUN SYED NASIR SYED ISMAIL
33.	DIPLOMA SENIBINA KAPAL/ *DIPLOMA IN NAVAL ARCHITECTURE* (DNA)	POLITEKNIK BAGAN DATUK

Lampiran 1

BIL.	PROGRAM	INSTITUSI
34.	DIPLOMA TEKNOLOGI KEJURUTERAAN PEMBINAAN MARIN/ *DIPLOMA IN MARINE CONSTRUCTION ENGINEERING TECHNOLOGY* (DSC)	POLITEKNIK BAGAN DATUK
35.	DIPLOMA TEKNOLOGI KEJURUTERAAN ELEKTRIK MARIN/ *DIPLOMA IN MARINE ELECTRICAL ENGINEERING TECHNOLOGY* (DSE)	POLITEKNIK BAGAN DATUK
36.	DIPLOMA REKA BENTUK FESYEN/ *DIPLOMA IN FASHION DESIGN* (DRF)	POLITEKNIK IBRAHIM SULTAN
37.	DIPLOMA TEKNOLOGI MEDIA CETAK/ *DIPLOMA IN PRINT MEDIA TECHNOLOGY* (DMC)	POLITEKNIK MUADZAM SHAH
38.	DIPLOMA REKA BENTUK GRAFIK/ *DIPLOMA IN GRAPHIC DESIGN* (DRG)	1. POLITEKNIK IBRAHIM SULTAN 2. POLITEKNIK MUADZAM SHAH 3. POLITEKNIK BALIK PULAU
39.	DIPLOMA PERKHIDMATAN MAKANAN AMALAN HALAL/ *DIPLOMA IN FOODSERVICE HALAL PRACTICE* (DHF)	1. POLITEKNIK MERLIMAU 2. POLITEKNIK SULTAN IDRIS SHAH 3. POLITEKNIK TUANKU SYED SIRAJUDDIN 4. POLITEKNIK METRO KUANTAN
40.	DIPLOMA SENI KULINARI/ *DIPLOMA IN CULINARY ARTS* (DCC)	POLITEKNIK MERLIMAU

Lampiran 2

SENARAI PROGRAM

BIL.	PROGRAM/KURSUS	KOD PROGRAM
1.	DIPLOMA KEJURUTERAAN ELEKTRIK (KECEKAPAN TENAGA)/ *DIPLOMA IN ELECTRICAL ENGINEERING (ENERGY EFFICIENCY)*	DEQ
2.	DIPLOMA KEJURUTERAAN ELEKTRIK/ *DIPLOMA IN ELECTRICAL ENGINEERING*	DET
3.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN ELEKTRONIK/ *DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING*	DEE
4.	DIPLOMA KEJURUTERAAN ELEKTRIK (TENAGA HIJAU)/ *DIPLOMA IN ELECTRICAL ENGINEERING (GREEN ENERGY)*	DEG
5.	DIPLOMA KEJURUTERAAN ELEKTRONIK(KOMUNIKASI)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMMUNICATION)*	DEP
6.	DIPLOMA KEJURUTERAAN ELEKTRONIK(PERUBATAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (MEDICAL)*	DEU
7.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KAWALAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (CONTROL)*	DJK
8.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KOMPUTER)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMPUTER)*	DTK
9.	DIPLOMA KEJURUTERAAN AWAM/ *DIPLOMA IN CIVIL ENGINEERING*	DKA
10.	DIPLOMA UKUR BAHAN/ *DIPLOMA IN QUANTITY SURVEYING*	DUB
11.	DIPLOMA KEJURUTERAAN ALAM SEKITAR/ *DIPLOMA IN ENVIRONMENTAL ENGINEERING*	DAS
12.	DIPLOMA KEJURUTERAAN PERKHIDMATAN BANGUNAN/ *DIPLOMA IN BUILDING SERVICES ENGINEERING*	DPB
13.	DIPLOMA SENIBINA/ *DIPLOMA IN ARCHITECTURE*	DSB

Lampiran 2

BIL.	PROGRAM/KURSUS	KOD PROGRAM
14.	DIPLOMA TEKNOLOGI BERASASKAN KAYU/ *DIPLOMA IN WOOD-BASEDTECHNOLOGY*	DBK
15.	DIPLOMA PERANCANGAN BANDAR DAN WILAYAH/ *DIPLOMA IN TOWN AND REGIONAL PLANNING*	DPW
16.	DIPLOMA GEOMATIK/ *DIPLOMA IN GEOMATIC*	DGU
17.	DIPLOMA KEJURUTERAAN PENYENGGARAAN PESAWAT/ *DIPLOMA ENGINEERING IN AIRCRAFT MAINTENANCE*	DAM
18.	DIPLOMA KEJURUTERAAN MEKANIKAL/ *DIPLOMA IN MECHANICAL ENGINEERING*	DKM
19.	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMASI)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMATION)*	DMA
20.	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMOTIF)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE)*	DMF
21.	DIPLOMA KEJURUTERAAN MEKANIKAL (BAHAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MATERIAL)*	DMB
22.	DIPLOMA KEJURUTERAAN MEKANIKAL (PEMBUATAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)*	DMP
23.	DIPLOMA KEJURUTERAAN MEKANIKAL (PENYAMANAN UDARA DAN PENYEJUKBEKUAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AIR CONDITIONING AND REFRIGERATION)*	DPU
24.	DIPLOMA KEJURUTERAAN MEKANIKAL (PERTANIAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AGRICULTURAL)*	DPT
25.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PEMBUATAN AUTOMOTIF/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE MANUFACTURING DESIGN)*	DRA
26.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PRODUK)/ *DIPLOMA IN MECHANICAL ENGINEERING (PRODUCT DESIGN)*	DRP
27.	DIPLOMA KEJURUTERAAN MEKANIKAL (PETROKIMIA)/ *DIPLOMA IN MECHANICAL ENGINEERING (PETROCHEMICAL)*	DPC

Lampiran 2

BIL.	PROGRAM/KURSUS	KOD PROGRAM
28.	DIPLOMA KEJURUTERAAN MEKATRONIK/ *DIPLOMA IN MECHATRONICS ENGINEERING*	DEM
29.	DIPLOMA KEJURUTERAAN PERKAPALAN/ *DIPLOMA IN MARINE ENGINEERING*	DKP
30.	DIPLOMA KEJURUTERAAN PROSES (PETROKIMIA)/ *DIPLOMA IN PROCESS ENGINEERING (PETROCHEMICAL)*	DPE
31.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN INSTRUMENTASI/ *DIPLOMA IN ELECTRICAL AND INSTRUMENTATION ENGINEERING*	DEI
32.	DIPLOMA KEJURUTERAN KIMIA/ *DIPLOMA IN CHEMICAL ENGINEERING*	DCE
33.	DIPLOMA SENIBINA KAPAL/ *DIPLOMA IN NAVAL ARCHITECTURE*	DNA
34.	DIPLOMA TEKNOLOGI KEJURUTERAAN PEMBINAAN MARIN/ *DIPLOMA IN MARINE CONSTRUCTION ENGINEERING TECHNOLOGY*	DSC
35.	DIPLOMA TEKNOLOGI KEJURUTERAAN ELEKTRIK MARIN/ *DIPLOMA IN MARINE ELECTRICAL ENGINEERING TECHNOLOGY*	DSE
36.	DIPLOMA REKA BENTUK FESYEN/ *DIPLOMA IN FASHION DESIGN*	DRF
37.	DIPLOMA TEKNOLOGI MEDIA CETAK/ *DIPLOMA IN PRINT MEDIA TECHNOLOGY*	DMC
38.	DIPLOMA REKA BENTUK GRAFIK/ *DIPLOMA IN GRAPHIC DESIGN*	DRG
39.	DIPLOMA PERKHIDMATAN MAKANAN AMALAN HALAL/ DIPLOMA IN FOODSERVICE HALAL PRACTICE	DHF
40.	DIPLOMA SENI KULINARI/ DIPLOMA IN CULINARY ARTS	DCC
41.	KURSUS PENGAJIAN UMUM DIPLOMA	-

Appendix G1-3b

LAPORAN PENGIRAAN PERATUS PERUBAHAN STRUKTURAL PADA REKA BENTUK PROGRAM

UNIT: **UNIT KEJURUTERAAN MEKANIKAL**

NAMA PROGRAM YANG DITAMBAHBAIK: **DIPLOMA KEJURUTERAAN MEKANIKAL / DIPLOMA IN MECHANICAL ENGINEERING (DKM)**

Perubahan bersifat struktural pada rekabentuk program:

BIL	KOMPONEN	KOMPONEN PENAMBAHBAIKAN	PERUBAHAN	PEMBERAT KOMPONEN (%)	PERATUS PERUBAHAN AKHIR (%)
1	**PENAMAAN PROGRAM**	Penamaan program disebabkan pindaan pada Body of Knowledge atau mengikut trend penamaan semasa	Tidak	NA	
2	**KAEDAH PENGAJIAN**	Perubahan/Penambahan kepada kaedah WBL	Tidak	NA	
3	**PEO**	Perubahan kandungan dan bilangan Pernyataan PEO	0/100	NA	
4	**PLO**	Perubahan kandungan dan bilangan Pernyataan PLO	8.3/100	NA	
5	**STRUKTUR KURIKULUM**	Pengguguran/Penambahan/Penggantian Kursus dalam struktur kurikulum	7.58/100	70.0	5.30
6	**CLO**	Perubahan kandungan dan bilangan Pernyataan CLO	18.08/100	30.0	5.42

Peratusan Keseluruhan Perubahan Semakan Kurikulum (%)	**10.73**

Nota: No.5 & 6 merujuk kepada Surat MQA Bil.4/2018 iaitu Perubahan kandungan kurikulum bersifat struktural melebihi 30% daripada kurikulum asal komponen teras, major, minor atau pengkhususan yang melibatkan pengguguran, penambahan atau penggantian kursus atau perubahan major Course Learning Outcomes (CLO) yang bukan editorial atau gabungan kedua-duanya. (Contoh: Perubahan kurikulum program Diploma 90 kredit yang melibatkan pertukaran 5 kursus sebanyak 15 kredit dalam pada itu, perubahan major CLO dibuat ke atas 5 kursus lain sebanyak 15 kredit. Secara keseluruhan, perubahan struktural melibatkan 30 kredit iaitu 33.3% daripada komponen kurikulum)

PERUBAHAN MAKLUMAT PROGRAM

BAHAGIAN KURIKULUM

JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

Sila isikan maklumat berikut:

a. Unit (Nama Penuh)
Cth: Unit Pelancongan dan Hospitaliti : UNIT KEJURUTERAAN MEKANIKAL

	BAHASA MELAYU	BAHASA INGGERIS	AKRONIM
b. Program yang ditambahbaik (Nama Penuh) Cth: Diploma Pengurusan Resort / Diploma in Resort Management :	DIPLOMA KEJURUTERAAN MEKANIKAL	DIPLOMA IN MECHANICAL ENGINEERING	DKM

Tarikh Kelulusan MLK/JKIK Cth: hh/bb/tttt :

i(a) **c. Pindaan editorial pada penamaan program Cth: Sarjana Sains (Kimia) kepada Sarjana Sains Kimia** : Tidak

i(b) **d. Pindaan editorial pada National Education Code (NEC)** : Tidak

i(c) **e. Perubahan kredit bergraduat** : Ya

Jika Ya, isikan maklumat berikut:

dari 94 kredit kepada 93 kredit

i(d) **f. Perubahan tempoh pengajian Cth: Dari 2 tahun kepada 2 tahun setengah ATAU bilangan minggu pembelajaran dalam 1 semester daripada 14 minggu kepada 17 minggu**

:	Bilangan Tahun
	Tidak

Jika Ya, isikan maklumat berikut:

dari 3 tahun kepada 3 tahun

:	Bilangan Minggu
	Tidak

Jika Ya, isikan maklumat berikut:

dari 14 minggu kepada 14 minggu

i(e) **g. Perubahan/Penambahan kaedah pengajian Cth: Sepenuh masa atau separuh masa** : Tidak

ii (a) **h. Perubahan penamaan program disebabkan pindaan pada *Body of Knowledge* (BoK) atau mengikut trend penamaan semasa** : Tidak

ii (b) **i. Perubahan / Penambahan kepada kaedah WBL** : Tidak

iii **j. Perubahan pada reka bentuk program (kurikulum) yang membawa kepada pertukaran bidang pengajian lain (membawa kepada pertukaran NEC) seperti perubahan penamaan dan kandungan program yang menjurus kepada BoK bidang pengajian lain. Cth: Diploma Pengurusan dan Pentadbiran Islam kepada Diploma Pengajian Islam** : Tidak

iv **k. Perubahan / Penambahan kaedah penyampaian program daripada Konvensional kepada *Open and Distance Learning* (ODL)** : Tidak

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

ii (d)

	PENYATAAN PEO SEMASA	STATUS PEO SELEPAS PENAMBAHBAIKAN	PENYATAAN PEO SELEPAS PENAMBAHBAIKAN
1	**Equipped with industry-relevant knowledge and skills in mechanical engineering field**	PEO semasa dimurnikan	**Proficient with industry-relevant knowledge and skills in mechanical engineering field**
2	Engaging on lifelong and continuous learning to enhance knowledge and skills	PEO semasa dikekalkan	Engaging on lifelong and continuous learning to enhance knowledge and skills
3	Instilled with entrepreneurial skills and mind set in the real working environment	PEO semasa dimurnikan	**Acquire with entrepreneurial skills and mindset in the real working environment**
4	Established strong linkage with society and players in the industry	PEO semasa dimurnikan	Establish links with society and players in the industry.
5			
6			
7			

Bilangan perubahan komponen PEO selepas penambahbaikan:	**0**
Bilangan PEO semasa (asal):	**4**
Bilangan penyataan PEO selepas penambahbaikan:	**4**
Peratus perubahan bagi komponen PEO (%):	**0.00**

LOD	*KEYWORD* DALAM PENYATAAN PEO SEDIA ADA	KLUSTER MQF 2.0
Knowledge of Discipline Areas	**berpengetahuan**	**knowledge and understanding**
Practical Skills	**berkemahiran**	**practical skill**
Problem Solving & Scientific Skills	**penyelesaian masalah**	**cognitive skill**
Information Management & Lifelong Learning Skills	**pembelajaran sepanjang hayat**	**personal skill**
Communication, Leadership & Team Skills	**berkomunikasi**	**communication skill**
Information Management & Lifelong Learning Skills	**mengurus maklumat**	**digital skill**
Social Skills & Responsibilities	**bekerjasama, tanggungjawab sosial, kerja berpasukan**	**interpersonal skill**
Managerial & Entrepreneurial Skills	**usahawan**	**entrepreneurial skill**
Values, Attitudes & Professionalism	**berasaskan kerja**	**ethics and professional skill**
Information Management & Lifelong Learning Skills	**mengurus maklumat**	**numeracy skill**
Communication, Leadership & Team Skills	**bekerjasama, tanggungjawab sosial, kerja berpasukan**	**leadership, autonomy and responsibility skill**

ii (d)

PROGRAMME LEARNING OUTCOMES (PLO)

	PENYATAAN PLO SEMASA	STATUS PLO SELEPAS PENAMBAHBAIKAN		PENYATAAN PLO SELEPAS PENAMBAHBAIKAN
1	apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices	PLO semasa dimurnikan	1	Apply knowledge of applied mathematics, applied science, computer and engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices in area of mechanical engineering.
2	identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)	PLO semasa dikekalkan	2	Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to mechanical engineering field (DK1 to DK4).
3	design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (DK5)	PLO semasa dimurnikan	3	Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety as well as,, cultural, societal and environmental considerations in area of mechanical engineering (DK5)
4	conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements	PLO semasa dimurnikan	4	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements (DK8)
5	apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)	PLO semasa dimurnikan	5	Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations (DK2 and DK6)
6	demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well-defined engineering problems (DK7)	PLO semasa dimurnikan	6	Consider sustainable development impacts to: society, the economy, sustainability, health and safety, legal frameworks, and the envoronment, in solving well- defined engineering problems. (DK1,DK5 and DK7)
7	understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts (DK7)	PLO semasa digugurkan TANPA diganti	7	
8	understand and commit to professional ethics and responsibilities and norms of technician practice	PLO semasa dimurnikan	8	Understand and commit to professional ethics and responsibilities and norms of technician practice and including complience with national and international laws. Demonstrate an understanding of the need for diversity and inclusion. (DK9)
9	function effectively as an individual, and as a member in diverse technical teams	PLO semasa dimurnikan	9	Function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings (DK9)
10	communicate effectively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions	PLO semasa dimurnikan	10	Communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions
11	demonstrate knowledge and understanding of engineering management principles and apply these to one's own work, as a member or leader in a technical team and to manage projects in multidisciplinary environments	PLO semasa dimurnikan	11	Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.
12	recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge	PLO semasa dimurnikan	12	Recognise the need for, and have the ability for i) independent and life long learning and ii)critical thingking in the face of specialised technical knowledge.(DK8)
13			13	
14			14	

Bilangan perubahan komponen PLO selepas penambahbaikan:	**1**
Bilangan penyataan PLO semasa (asal):	**12**
Bilangan penyataan PLO selepas penambahbaikan:	**11**
Peratus perubahan bagi komponen PLO (%):	**8.33**

LOD	*KEYWORD* DALAM PENYATAAN PEO SEDIA ADA	KLUSTER MQF 2.0
Knowledge of Discipline Areas	**berpengetahuan**	**knowledge and understanding**
Practical Skills	**berkemahiran**	**practical skill**
Problem Solving & Scientific Skills	**penyelesaian masalah**	**cognitive skill**
Information Management & Lifelong Learning Skills	**pembelajaran sepanjang hayat**	**personal skill**
Communication, Leadership & Team Skills	**berkomunikasi**	**communication skill**
Information Management & Lifelong Learning Skills	**mengurus maklumat**	**digital skill**
Social Skills & Responsibilities	**bekerjasama, tanggungjawab sosial, kerja berpasukan**	**interpersonal skill**
Managerial & Entrepreneurial Skills	**usahawan**	**entrepreneurial skill**
Values, Attitudes & Professionalism	**berasaskan kerja**	**ethics and professional skill**
Information Management & Lifelong Learning Skills	**mengurus maklumat**	**numeracy skill**
Communication, Leadership & Team Skills	**bekerjasama, tanggungjawab sosial, kerja berpasukan**	**leadership, autonomy and responsibility skill**

**pengisian maklumat kursus adalah *case sensitif*.

		MAKLUMAT KURSUS SEMASA						MAKLUMAT KURSUS SELEPAS PENAMBAHBAIKAN					CLO1			CLO2	
#	Komponen	Kod Kursus	Nama Kursus	Sem. Ditawarkan	Jam Kredit	Bil. CLO Kursus Semasa	STATUS KURSUS SELEPAS PENAMBAHBAIKAN	Kod Kursus	Nama Kursus	Sem. Ditawarkan	Jam Kredit	Bil. CLO Kursus Selepas Semakan/Baharu	PENYATAAN CLO SEMASA	STATUS CLO SELEPAS PENAMBAHBAIKAN	PENYATAAN CLO SELEPAS PENAMBAHBAIKAN	PENYATAAN CLO SEMASA	STATUS CLO SELEPAS PENAMBAHBAIKAN
1	COMMON	DUW10022	Occupational, Safety and Health for Engineering	1	2	3	Kursus semasa dikekalkan	DUW10042	Occupational, Safety and Health for Engineering	1	2	3		CLO semasa dimurnikan	Explain briefly Occupational Safety and Health (OSH) procedures, regulation and its compliance in Malaysia.		CLO semasa dimurnikan
2		DBM10013	Engineering Mathematics 1	2	3	3	Kursus semasa dikekalkan	DBM10163	Engineering Mathematics 1	1	3	3		CLO semasa dimurnikan	use mathematical statement to describe relationship between various physical phenomena		CLO semasa dimurnikan
3		DBM20023	Engineering Mathematics 2	2	3	3	Kursus semasa dikekalkan	DBM20173	Engineering Mathematics 2	2	3	3		CLO semasa dimurnikan	explain the relationship between various physical phenomena in algebra and calculus		CLO semasa dimurnikan
4		DBM30033	Engineering Mathematics 3	2	3	3	Kursus semasa dikekalkan	DBM30183	Engineering Mathematics 3	3	3	3		CLO semasa dimurnikan	demonstrate mathematical concepts, formulate methods of solutions and select appropriate techniques for solving routine mathematics problems		CLO semasa dimurnikan
5		DBS10012	Engineering Science	1	2	3	Kursus semasa dikekalkan	DBS10042	Engineering Science	1	2	2		CLO semasa dimurnikan	use basic physics concept to solve engineering physics problems		CLO semasa dimurnikan
6		DJJ40132	Engineering and Society	4	2	3	Kursus semasa dikekalkan	DJJ30332	Engineering and Society	3	2	3		CLO semasa dimurnikan	Implement the roles of engineering profession towards the developing of society and the challenge of globalization with professional ethic		CLO semasa dimurnikan
1		DJJ10013	Engineering Drawing	1	3	3	Kursus semasa dikekalkan	DJJ10223	Engineering Drawing	1	3	3	Apply the fundamentals of technical drawing and features of CAD software in producing engineering drawing.	CLO semasa dimurnikan	Apply the fundamentals of engineering drawing and features of CAD software.	Construct the technical drawing and 2D CAD drawing according to the engineering drawing standards.	CLO semasa dimurnikan
2		DJJ20053	Electrical Technology	2	3	3	Kursus semasa digugurkan										
3							Kursus baharu ditambah	DJJ20263	Electrical and Electronic Technology	2	3	3		CLO baharu ditambah	Apply fundamental knowledge in electricity, electronic, electromagnetisms and electrostatics in motor and generator control systems to solve related problems in electrical technology.		CLO baharu ditambah
4		DJJ10022	Mechanical Workshop Practice 1	1	2	3	Kursus semasa dikekalkan	DJJ10232	Mechanical Workshop Practice 1	1	2	3	Measure finished product using appropriate measurement instruments	CLO semasa dikekalkan	Measure finished product using appropriate measurement instruments	Perform fitting, welding and machining works according to Standard Operational Procedure (SOP).	CLO semasa dikekalkan
5		DJJ20042	Mechanical Workshop Practice 2	2	2	3	Kursus semasa dikekalkan	DJJ20252	Mechanical Workshop Practice 2	2	2	3	Follow the appropriate procedure for welding, foundry and lathe machining.	CLO semasa dimurnikan	Follow appropriate safety and practical procedure for welding, foundry and lathe machining	Perform welding, foundry and lathe machining according to Standard Operating Procedure (SOP).	CLO semasa dimurnikan
6		DJJ30082	Mechanical Workshop Practice 3	3	2	3	Kursus semasa dikekalkan	DJJ30302	Mechanical Workshop Practice 3	3	2	3	follow welding tasks according to workshop Standard Operating Procedure (SOP).	CLO semasa digugurkan dan diganti	Perform high precision machining processes for the surface or cylindrical grinding machine and indexing in milling machine.	perform machining tasks according to workshop Standard Operating Procedure (SOP).	CLO semasa digugurkan TANPA diganti
7		DJJ40142	Mechanical Workshop Practice 4	4	2	3	Kursus semasa digugurkan										

8	DISCIPLINE	DJJ10033	Workshop Technology	1	3	3	Kursus semasa dikekalkan	DJJ10243	Workshop Technology	1	3	3	Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology	CLO semasa dikekalkan	Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology.	Apply standard practice in operating mechanical tools and component	CLO semasa dikekalkan
9		DJJ30093	Engineering Mechanics	3	3	3	Kursus semasa dikekalkan	DJJ30313	Engineering Mechanics	3	3	3	solve problems related to static and dynamics based on the concepts and principle of engineering mechanics	CLO semasa dikekalkan	Solve problems related to statics and dynamics based on the concepts and principle of engineering mechanics	analyze engineering related problems based on fundamentals of static and dynamics	CLO semasa dikekalkan
10		DJJ30122	Computer Aided Design	3	2	3	Kursus semasa dikekalkan	DJJ20282	Computer Aided Design	2	2	3	Apply CAD commands in order to produce engineering drawing.	CLO semasa dikekalkan	Apply CAD commands in order to produce engineering drawing.	Construct 3D drawing of Mechanical Components according Drawing Standards.	CLO semasa dikekalkan
11		DJJ20063	Thermodynamics	2	3	3	Kursus semasa dikekalkan	DJJ30293	Thermodynamics	3	3	3	Explain fundamentals concept and properties of pure substances in thermodynamics	CLO semasa dimurnikan	Apply the fundamentals concept and properties of pure substances in thermodynamics.	Apply Laws of thermodynamics and it processes	CLO semasa dimurnikan
12		DJJ20073	Fluid Mechanics	2	3	3	Kursus semasa dikekalkan	DJJ20273	Fluid Mechanics	2	3	3	Explain the fundamentals of fluid	CLO semasa digugurkan dan diganti	Explain various fluid properties to solve the problems in fluids mechanics	Solve problems related to fluid properties, fluid statics and fluid dynamics	CLO semasa digugurkan dan diganti
13		DJJ30103	Strength of Materials	3	3	3	Kursus semasa dikekalkan	DJJ30323	Strength of Materials	3	3	3	apply the concepts of strength of materials to solve related problems.	CLO semasa dikekalkan	Apply the concepts of strength of materials to solve related problems.	analyze problems correctly related to strength of materials	CLO semasa dikekalkan
14		DJJ30113	Material Science and Engineering	3	3	3	Kursus semasa dikekalkan	DJJ40343	Material Science and Engineering	4	3	3	Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment.	CLO semasa digugurkan dan diganti	Apply the knowledge of materials science in engineering applications	Performed appropriate material testing according to the Standard Operating Procedures.	CLO semasa dikekalkan
15		DJJ40163	Mechanics of Machines	4	3	3	Kursus semasa dikekalkan	DJJ40363	Mechanics of Machines	**4**	**3**	3	Apply the fundamentals of mechanics of machines to solve related problems in the theoretical and graphical aspects.	CLO semasa dikekalkan	Apply the fundamentals of mechanics of machines to solve related problems in the theoretical and graphical aspects.	Analyze problems related to the mechanics of machines in relation to the theoretical aspects.	CLO semasa dikekalkan
16							Kursus baharu ditambah	DJJ40352	Computer Programming	4	2	3		CLO baharu ditambah	Apply C Programming commands to solve given problem using an appropriate data type		CLO baharu ditambah
17		DJJ40153	Pneumatic and Hydraulics	4	3	3	Kursus semasa dikekalkan	DJJ40373	Pneumatic and Hydraulics	**4**	**3**	3	Apply the basic concept and function of pneumatics and hydraulics system.	CLO semasa dikekalkan	Apply the basic concept and function of pneumatics and hydraulics system.	Design pneumatic, electro-pneumatic and hydraulic circuit according to assigned tasks.	CLO semasa dimurnikan
18		DJJ40173	Engineering Design	4	3	4	Kursus semasa dikekalkan	DJJ40383	Engineering Design	**4**	**3**	4	Apply the concept of design process, stress analysis and mechanical joint in an engineering product.	CLO semasa dikekalkan	Apply the concept of design process, stress analysis and mechanical joint in an engineering product.	Implement engineering design process on project design taking into design consideration, ergonomic factors and material selection.	CLO semasa dimurnikan
19		DJJ40182	Project 1	4	2	3	Kursus semasa dikekalkan	DJJ40391	Project 1	4	2	3	Identify the engineering problems to be solved	CLO semasa dimurnikan	Identify engineering problems in mechanical engineering fields	Analyze methods to solve problems	CLO semasa digugurkan dan diganti
20		DJJ50193	Project 2	5	3	5	Kursus semasa dikekalkan	DJJ50403	Project 2	5	3	5	Demonstrate appropriate and creative solution in solving project problems	CLO semasa digugurkan dan diganti	Organize project outcomes in progress report based on standard format	Perform project plan to achieve objectives with valid and reliable results	CLO semasa digugurkan dan diganti
21		DJJ50203	Troubleshooting and Maintenance for Mechanical Components	5	3	3	Kursus semasa dikekalkan	DJJ50413	Troubleshooting and Maintenance for Mechanical Compo	5	3	3	Apply the concept of mechanical components to solve related problems.	CLO semasa dikekalkan	Analyze the concept of mechanical components to solve related problems.	Organize appropriately experiments in groups according to Standart Operating Procedure	CLO semasa dikekalkan
22		DJJ50212	Maintenance Engineering and Management	5	2	3	Kursus semasa dikekalkan	DJJ50422	Maintenance Engineering and Management	5	2	3	apply the concepts of maintenance organization and strategies to solve related problems.	CLO semasa dikekalkan	Apply the concepts of maintenanc organization and strategies to solve related problem	analyze the principles of maintenance strategies and elaborate on the significance of a system approach to maintenance.	CLO semasa dimurnikan
23		DJJ42032	Instrumentation and Control	4	2	3	Kursus semasa dikekalkan	DJJ40452	Instrumentation and Control	4	2	3		CLO semasa digugurkan dan diganti	Apply the fundamental ofinstrumentation and control systems in engineering		CLO semasa dimurnikan

24	DJJ52012	Engineering Plant Technology	5	2	3	Kursus semasa dikekalkan	DJJ40432	Engineering Plant Technology	4	2	3	Classify the concepts and technology of power plant system and components to solve related problem based on its application and functions.	CLO semasa dimurnikan	Organize the concepts and technology of power plant system and components; and suggest solution to problem based task	Implement the professional ethics and responsibility and norms of technician practice in power plant system and components.	CLO semasa dimurnikan
25						Kursus baharu ditambah	DJJ40472	Renewable and Sustainable Energy	4	2	3		CLO baharu ditambah	Show the applications, principle operation and process of various types of renewable energy and non-renewable energy		CLO baharu ditambah
26	DJJ42022	Industrial Management	4	2	3	Kursus semasa dikekalkan	DJJ40442	Industrial Management	4	2	3	Apply the basic concept of industrial management system to solve related problems.	CLO semasa dikekalkan	Apply the basic concept of industrial management system to solve related problems	Analyze problems related to industrial management.	CLO semasa dikekalkan
27	DJJ52052	Railway Track System	5	2	3	Kursus semasa dikekalkan	DJJ40462	Railway Track System	4	2	3	Explain the concept of Railway Track System.	CLO semasa dimurnikan	Organize the concept of railway track system	Apply the railway engineering and give respond in work application.	CLO semasa dimurnikan
28	DJM40082	Programmable Logic Control	4	2	3	Kursus semasa dikekalkan	DJM40242	Programmable Logic Control	4	2	3	Differentiate the types of automation systems and terminologies used in PLC hardware and programmes.	CLO semasa digugurkan dan diganti	Validate a PLC program related to an industrial automation system.	Validate a PLC program related to an industrial automation system.	CLO semasa digugurkan dan diganti
29	DJM40092	Control System	4	2	3	CLO semasa dikekalkan	DJM50272	Control System	5	2	3	Explain the basic concept of control system including controller principle, transfer function and stability	CLO semasa dimurnikan	Apply the basic concepts of control system including controller principle, transfer function and stability	Construct experiment on different types of controller mode in order to analyse and interpretation of data	CLO semasa dimurnikan
30	DJF51082	Quality Control	5	2	3	Kursus semasa dikekalkan	DJF52092	Quality Control	4	2	3	Apply the relation of statistics and quality management system in understanding of quality control and their application tools.	CLO semasa dimurnikan	Apply the relationship between statistics and quality management system in understanding of quality control and their application tools.	Determine the related quality tools and techniques to control the quality of products or services based on case study.	CLO semasa dimurnikan

	PROGRAM SEMASA	PROGRAM SELEPAS SEMAKAN
Jumlah Bilangan Kursus *Common*	6	6
Jumlah Bilangan Kursus *Dicipline*	27	28
Jumlah Bilangan Kursus di dalam program	33	34
Jumlah Jam Kredit bagi kursus *Common*	15	15
Jumlah Jam Kredit bagi kursus *Dicipline*	67	69
Jumlah Jam Kredit bagi program ini	82	84

	BILANGAN	PERATUS (%)	
Jumlah Perubahan Bilangan Kursus di dalam Program	1	3.03	***Berlaku pertambahan bilangan kursus pada program selepas semakan semula*
Jumlah Perubahan Jam Kredit di dalam Program	2	2.44	***Berlaku pertambahan jam kredit pada program selepas semakan semula*
Jumlah Perubahan Course Learning Outcome (CLO) di dalam Program	20	18.08	

	CLO3			CLO4		
PENYATAAN CLO SELEPAS PENAMBAHBAIKAN	**PENYATAAN CLO SEMASA**	**STATUS CLO SELEPAS PENAMBAHBAIKAN**	**PENYATAAN CLO SELEPAS PENAMBAHBAIKAN**	**PENYATAAN CLO SEMASA**	**STATUS CLO SELEPAS PENAMBAHBAIKAN**	**PENYATAAN CLO SELEPAS PENAMBAHBAIKAN**
Describe hazards, risks and safe work practices in order to maintain health and safe work environment.		CLO semasa dimumikan	Justify the factor that can lead to accident in workplace.			
show mathematical solutions using the appropriate techniques in mathematics		CLO semasa dimumikan	use mathematical expression in describing real engineering problems precisely, concisely and logically			
solve mathematics problems by using appropriate and relevant fundamentals calculus techniques		CLO semasa dimumikan	use mathematics language to express mathematics ideas and arguments precisely, concisely and logically in calculus			
apply mathematical methods and concepts to solve engineering problems		CLO semasa dimumikan	express mathematics ideas clearly by using correct mathematical terminology and proper mathematical notation			
use knowlegde of fundamental physics in real engineering activities accurately		CLO semasa dimumikan	perform appropriate activities related to physics concept			
Determine the importance of engineering management, professional bodies, sustainability and green technology aspect in the engineering profession		CLO semasa dimumikan	Explain the issues of sustainability and green technology in engineering practice			
Construct the 2D CAD drawing according to the engineering drawing standards	Propose a project report with following engineering norms and practices in engineering drawing.	CLO semasa dimumikan	Propose a project presentation with following engineering norms and practices in engineering drawing.			
Organize appropriate experiments in groups according to Standard Operating Procedure.		CLO baharu ditambah	Demonstrate continuous learning and information management skills while engaging in independent acquisition of new knowledge and skills in laboratory report			
Perform fitting, welding and machining works according to Standard Operational Procedure (SOP).	Demonstrate an understanding of professional ethics, responsibilities and norms of engineering practices according to the workshop safety regulation.	CLO semasa dikekalkan	Demonstrate an understanding of professional ethics, responsibilities and norms of engineering practices according to the workshop safety regulation.			
Perform welding, foundry and lathe machining according to safety and Standard Operating Procedure (SOP).	Demonstrate the ability to work as individual and as a team to complete assigned tasks.	CLO semasa dimumikan	Display the ability to work as individual and as a member in diverse technical teams			
Construct programs for CNC machining process using ISO codes or any related CADCAM Software	demonstrate awareness of social responsibility and safety procedures in the workshop according to the workshop safety regulations and create a secured environment in an organization while doing practical work.	CLO semasa dimumikan	Demonstrate awareness of safety procedures in the workshop and create secured environment in an organization while doing practical work.			

Apply standard practice in operating mechanical tools and component.	Demonstrate continuous learning and information management skills to complete assigned task	CLO semasa dikekalkan	Demonstrate continuous learning and information management skills to complete assigned task			
Analyze engineering related problems based on fundamentals of statics and dynamics	organize appropriately experiment in groups according to Standard Operation Procedures	CLO semasa dikekalkan	Organize appropriately experiment in groups according to Standard Operation Procedures			
Construct 3D drawing of Mechanical Components according Drawing Standards.	Demonstrate a presentation with following technical standard Communication.	CLO semasa dikekalkan	Demonstrate a presentation with following technical standard Communication.			
Analyze the thermodynamics systems using the laws of thermodynamics.	Organize appropriately experiments according to the Standard Operating Procedures	CLO semasa dikekalkan	Organize appropriately experiments according to the Standard Operating Procedures.			
Apply fundamental knowledge of fluid mechanics in mechanical engineering applications	Organize appropriate experiments in groups according to the standard operating procedures	CLO semasa dikekalkan	Organize appropritate experiments in groups according to the standard operating procedure			
Analyze problems correctly related to strength of materials	organize appropriately experiment in groups according to Standard Operation Procedures (SOP).	CLO semasa digugurkan dan diganti	Organize appropriately experiment in group according to Standard Operation Procedures			
Perform the appropriate material testing according to the Standard Operating Procedure	Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session.	CLO semasa dimumikan	Work individually and collaboratively in group to complete the assigned tasks			
Analyze problems related to the mechanics of machines in relation to the theoretical aspects.	Perform experiments in groups according to the Standard Operating Procedures.	CLO semasa dikekalkan	Perform experiments in groups according to the Standard Operating Procedures.			
Constructs a high level programming language in solving variety engineering and scientific problems		CLO baharu ditambah	Demonstrate a solution for assigned project based on programming which relates to current or upcoming technologies and peripherals.			
Evaluate the pneumatic, electro-pneumatic and hydraulic circuit according to assigned tasks.	Perform experiment on pneumatic, electro-pneumatic and hydraulic circuit during practical session.	CLO semasa dikekalkan	Perform experiment on pneumatic, electro-pneumatic and hydraulic circuit during practical session.			
Analyze engineering design process on project design while considering design, ergonomic factors and material selection.	Builds a part or product in 3D modelling based on project design.	CLO semasa digugurkan dan diganti	Perform project design concept in 3D printing.	Adopt design regarding to the environment and sustainability.	CLO semasa digugurkan dan diganti	Demonstrate project design concept that considers safety and health issues.
Analyze the sustainable development impacts in engineering problem	Propose a solution to problems	CLO semasa digugurkan dan diganti	Demonstrate engineering management in a technical team			
Construct design solutions to meet specified needs of the project with appropriate consideration	Explain the project work and defend project outcomes effectively with good communication skills	CLO semasa digugurkan dan diganti	Analyze the project results and write the project report to achieve proposed objectives	Organize project activities and outcomes in report accordance to the specified standard format that applies engineering management principles	CLO semasa digugurkan dan diganti	Explain the project work and defend project outcomes effectively with good communication skills
Organize appropriately experiments in groups according to Standart Operating Procedure	Perform the troubleshooting on mechanical component failure and damage	CLO semasa dikekalkan	Perform the troubleshooting on mechanical component failure and damage			
Analyze maintenance strategies and system approach which adhere to legal, ethical and professional guidelines	organize project management and finance by group in actual workplace related to maintenance management.	CLO semasa digugurkan dan diganti	Organize project management and finance by group in actual workplace related to maintenance management			
Explore the measurement and process controlsystemin engineering		CLO semasa digugurkan dan diganti	Demonstrate good communication skillin presentation on assigned topics			

Classify the professional ethics and responsibility and norms in power plant	Demonstrate skill of communications effectively on well-defined engineering activities with the engineering community and with society of large and information management skills based on related engineering plant technology.	CLO semasa dimurnikan	Demonstrate skill of effective communication on well-defined engineering problems.			
Determine the environmental and social issues of renewable and non renewable energy with appropriate consideration for sustainability, economic, and environmental considerations		CLO baharu ditambah	Organize continuous learning while engaging in the new knowledge of renewable and sustainable energy			
Analyze problems related to industrial management.	demonstrate good communication skills.	CLO semasa dimurnikan	Demonstrate communication skill in group to explain plant location and layout.			
Analyze the railway engineering and give respond in work application.	Analyze the effectiveness of Railway Track System through engineering issue in group.	CLO semasa dimurnikan	Describe the effectiveness of railway track system through engineering issue in group			
Adapt a PLC for an automated application.	Adapt a PLC for an automated application.	CLO semasa digugurkan dan diganti	Demonstrate one of practical work operation.			
Perform experiment / simulation on different types of controller mode in order to analyse and interpret data	Demonstrate the ability to work in team for completing assigned task during practical work sessions	CLO semasa dimurnikan	Demonstrate the ability to work in team in completing assigned tasks			
Determine related quality tools and techniques to control the quality of products or services based on case study.	Demonstrate ability to work in team to complete the assigned tasks	CLO semasa dimurnikan	Demonstrate ability to work in a team to complete the assigned tasks.			

LAPORAN PENUH PERUBAHAN MAKLUMAT PROGRAM

UNIT:	**UNIT KEJURUTERAAN MEKANIKAL**
NAMA PROGRAM YANG DITAMBAHBAIK:	**DIPLOMA KEJURUTERAAN MEKANIKAL / DIPLOMA IN MECHANICAL ENGINEERING (DKM)**
TARIKH KELULUSAN MLK/JKIK:	**0/1/1900**

BIL	KATEGORI PERUBAHAN	STATUS	TINDAKAN PEGAWAI
1	**Perubahan yang memerlukan pindaan maklumat pada Daftar Kelayakan Malaysia / Malaysian Qualifications Register (MQR)**	Ada Perubahan	Pegawai perlu memaklumkan kepada pihak MQA secara bertulis untuk pindaan pada MQR dengan menyertakan: (1) Surat Kelulusan perubahan/pindaan maklumat daripada pihak berkuasa (Jawatankuasa MLK/JKIK) dan (2) Maklumat Perubahan Program
2	**Peratus perubahan bersifat struktural pada reka bentuk program yang tidak membawa kepada pertukaran bidang pengajian lain secara kumulatif:**		
	a. Penamaan program disebabkan pindaan pada Body of Knowledge atau mengikut trend penamaan semasa	Tidak	
	b. Perubahan/Penambahan kepada kaedah WBL	Tidak	
	c. Perubahan kandungan dan bilangan Pernyataan PEO	0/100	
	d. Perubahan kandungan dan bilangan Pernyataan PLO	8.3/100	Pegawai juga perlu memaklumkan kepada MQA secara bertulis untuk proses penilaian semula (caj penilaian akan dikenakan berdasarkan keperluan) dengan menyertakan: (1) Surat Kelulusan perubahan/pindaan maklumat daripada pihak berkuasa (Jawatankuasa Subcommittee/MLK/JKIK) dan (2) Laporan Pengiraan Peratus Perubahan Struktural pada Reka Bentuk Program
	e. Pengguguran/Penambahan/Penggantian Kursus dalam struktur kurikulum	10.73%	Peratus perubahan bersifat struktural pada reka bentuk program adalah kurang dari 30%. Jadi pegawai tidak perlu memaklumkan kepada pihak MQA namun pegawai perlu menyimpan rekod dan bukti-bukti perubahan yang berlaku untuk semakan semasa penilaian audit pematuhan
	f. Perubahan kandungan dan bilangan Pernyataan CLO		
3	**Perubahan pada reka bentuk program yang membawa kepada pertukaran bidang pengajian lain iaitu yang membawa kepada pertukaran NEC**	Tiada Perubahan	
4	**Perubahan kaedah penyampaian program daripada Konvensional kepada *Open and Distance Learning* (ODL)**	Tiada Perubahan	

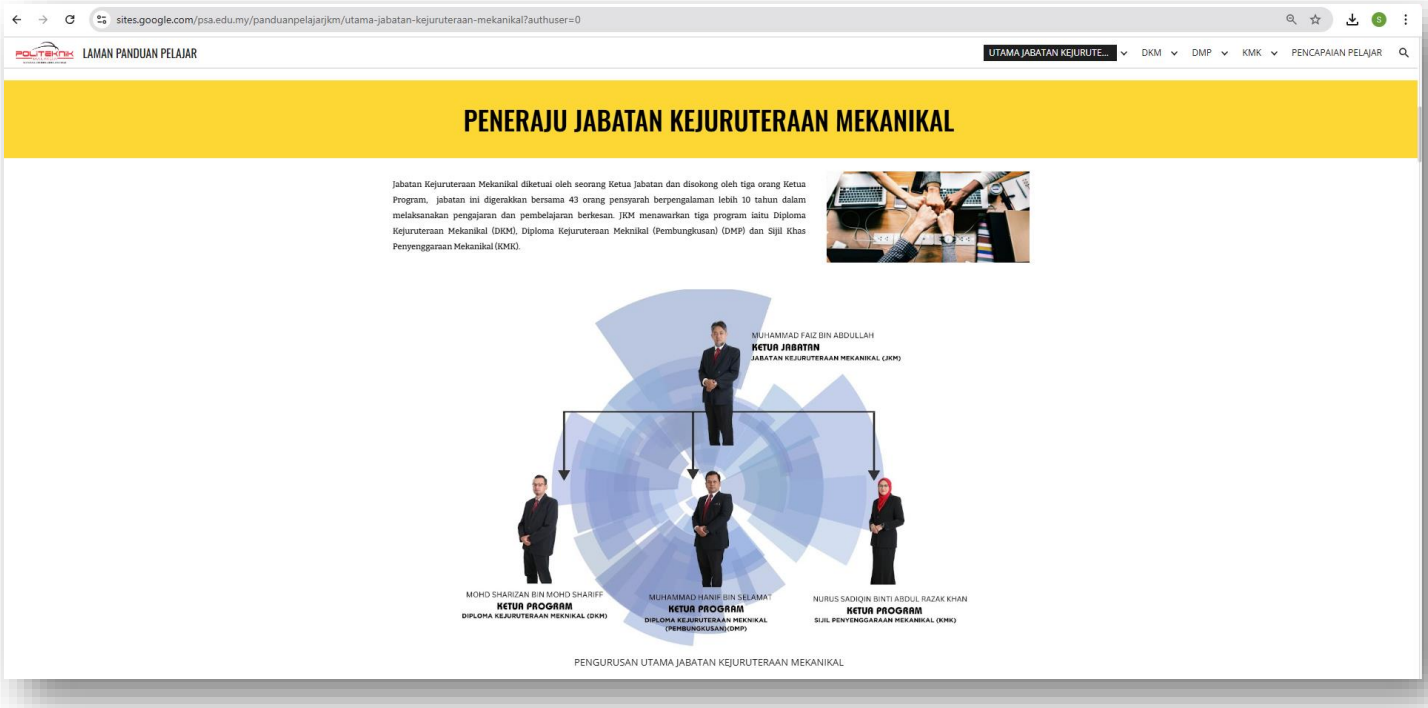
KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

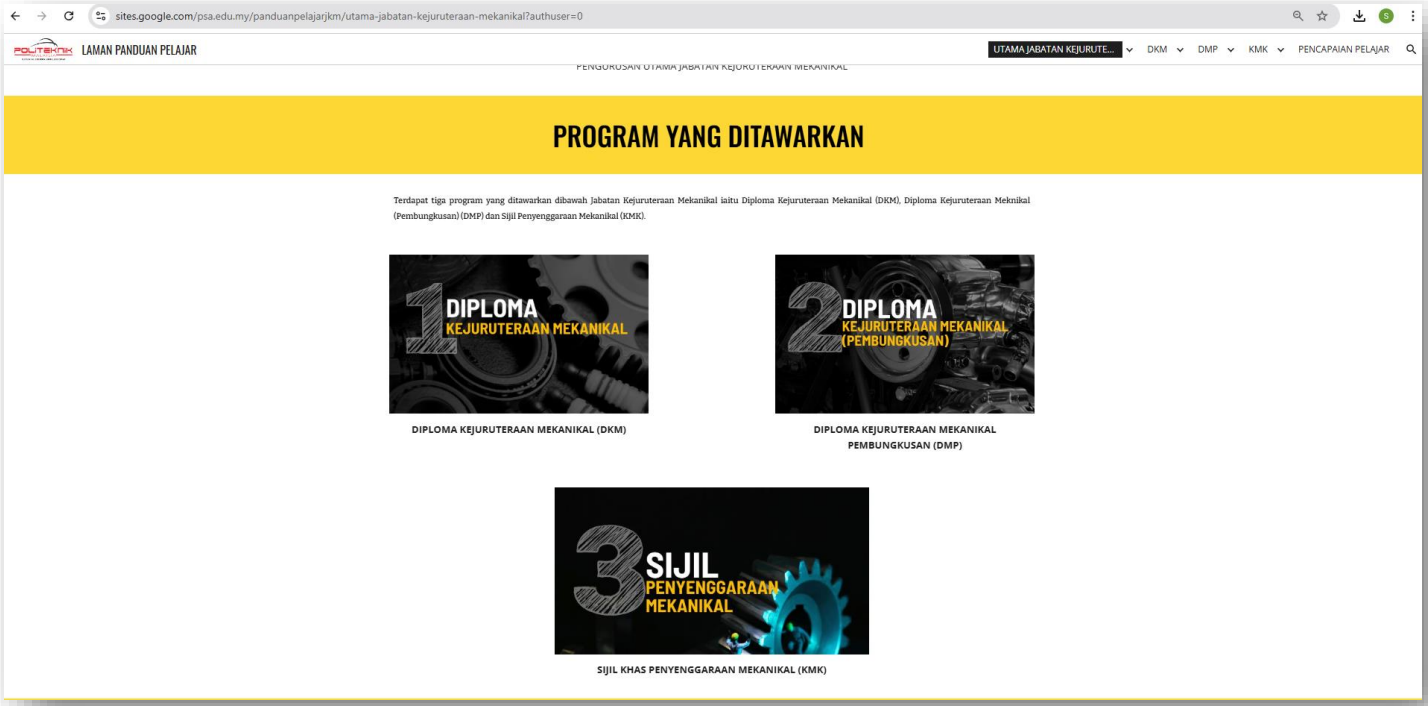
APPENDICES C1:
PROGRAM EDUCATIONAL OBJECTIVES

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)
DIPLOMA IN MECHANICAL ENGINEERING (DKM)

Google site https://sites.google.com/psa.edu.my/panduanpelajarjkm/utama-jabatan-kejuruteraan-mekanikal



sites.google.com/psa.edu.my/panduanpelajarjkm/utama-jabatan-kejuruteraan-mekanikal/pensyarah-rujukan?authuser=0
LAMAN PANDUAN PELAJAR
UTAMA JABATAN KEJURUTE...
DKM
DMP
KMK
PENCAPAIAN PELAJAR
MAKLUMAT PENSYARAH
PENGURUSAN TERTINGGI JKM
MUHAMMAD FAIZ BIN ABDULLAH
PROGRAM DIPLOMA KEJURUTERAAN MEKANIKAL


sites.google.com/psa.edu.my/panduanpelajarjkm/utama-jabatan-kejuruteraan-mekanikal?authuser=0
LAMAN PANDUAN PELAJAR
UTAMA JABATAN KEJURUTE...
DKM
DMP
KMK
PENCAPAIAN PELAJAR
PROGRAM YANG DITAWARKAN
Terdapat tiga program yang ditawarkan dibawah Jabatan Kejuruteraan Mekanikal iaitu Diploma Kejuruteraan Mekanikal (DKM), Diploma Kejuruteraan Meknikal (Pembungkusan) (DMP) dan Sijil Penyenggaraan Mekanikal (KMK).
1 DIPLOMA KEJURUTERAAN MEKANIKAL
DIPLOMA KEJURUTERAAN MEKANIKAL (DKM)
2 DIPLOMA KEJURUTERAAN MEKANIKAL (PEMBUNGKUSAN)
DIPLOMA KEJURUTERAAN MEKANIKAL PEMBUNGKUSAN (DMP)
3 SIJIL PENYENGGARAAN MEKANIKAL
SIJIL KHAS PENYENGGARAAN MEKANIKAL (KMK)

MISI DAN VISI JABATAN

Penetapan visi dan misi disetiap organisasi adalah untuk menentukan halatuju organisasi berkenaan. Berikut adalah Visi dan Misi yang telah ditetapkan untuk Politeknik sultan Salahuddin Abdul Aziz Shah, yang perlu diketahui dan difahami oleh setiap pelajar semasa berada dalam sistem.

VISION

To be the leading-edge TVET institution

MISSION

- To provide wide access to quality and recognized TVET programmes.
- To empower communities through lifelong learning.
- To develop holistic, entrepreneurial and balanced graduate.
- To capitalize on smart partnership with stakeholders.

EDUCATIONAL GOAL

EDUCATIONAL GOAL

TO PRODUCE HOLISTIC AND COMPETENT TVET GRADUATES CAPABLE OF CONTRIBUTING TO THE NATION DEVELOPMENT

PENCAPAIAN JABATAN

QUALITY MANAGEMENT

Dalam proses menghasilkan graduan berdaya saing dan holistik, beberapa usaha telah dilaksanakan untuk mendapatkan pengiktirafan dari beberapa agensi agar pelajar yang dihasilkan sentiasa memenuhi keperluan industri. Diantara badan yang telah menganugerahkan sijil adalah seperti berikut:

1. Standard & Industrial Research Institute of Malaysia (SIRIM)
2. Asia Pacific Accreditation, Certification and Commission (APASS)
3. National Institute of Occupational Safety and Health (NOISH)
4. Engineering Technology Accreditation Counsil (ETAC)

AKTIVITI KERJASAMA JABATAN BERSAMA INDUSTRI

Mechanical Innovation Competition Exhibition (MICE) melibatkan penilai dari industri luar untuk melahirkan produk yang menepati ciri - ciri produk yang sentiasa memenuhi keperluan industri dan pengguna.

Aktivitti sesi perkongsian bersama pihak industri dibuat untuk melihat kurikulum program agar seiring dengan keperluan industri. Ia aalah selaras dengan keperluan kementerian agar dapat melahirkan graduan yang sentiasa mempunyai pengetahuan seiring dengan perkembangan indsutri semasa di Malaysia.

Pihak pengurusan Jabatan Kejuruteraan Mekanikal sentiasa komited dalam melaksanakan lantikan Penasihat Industri dalam mambantu proses pembangunan kurikulum agar sentiasa relevan dan mampan untuk digunakan dari masa ke semasa. kerjasama ini penting untuk membentuk jaringan yang kuat agar graduan yang terhasil berdaya saing yang tinggi dan mempunyai daya tahan yang tinggi dalam menempuh alam pekerjaan.

sites.google.com/psa.edu.my/panduanpelajarjkm/utama-jabatan-kejuruteraan-mekanikal?authuser=0

POLITEKNIK LAMAN PANDUAN PELAJAR

UTAMA JABATAN KEJURUTE... DKM DMP KMK PENCAPAIAN PELAJAR

SENARAI KERJASAMA JABATAN BERSAMA INDUSTRI

MFD

BATERIKU.COM

Panasonic

HICOM DIECASTINGS

DRB-HICOM

TOP MECH

UNIVERSITI PENDIDIKAN SULTAN IDRIS

SULTAN IDRIS EDUCATION UNIVERSITY

UTM UNIVERSITI TEKNOLOGI MALAYSIA

MYSTEP

KUMPULAN LOGAMWELD

Alumni PSA

sites.google.com/psa.edu.my/panduanpelajarjkm/dkm/kursus-ditawarkan?authuser=0

LAMAN PANDUAN PELAJAR

UTAMA JABATAN KEJURUTE... DKM DMP KMK PENCAPAIAN PELAJAR

KURSUS YANG DITAWARKAN

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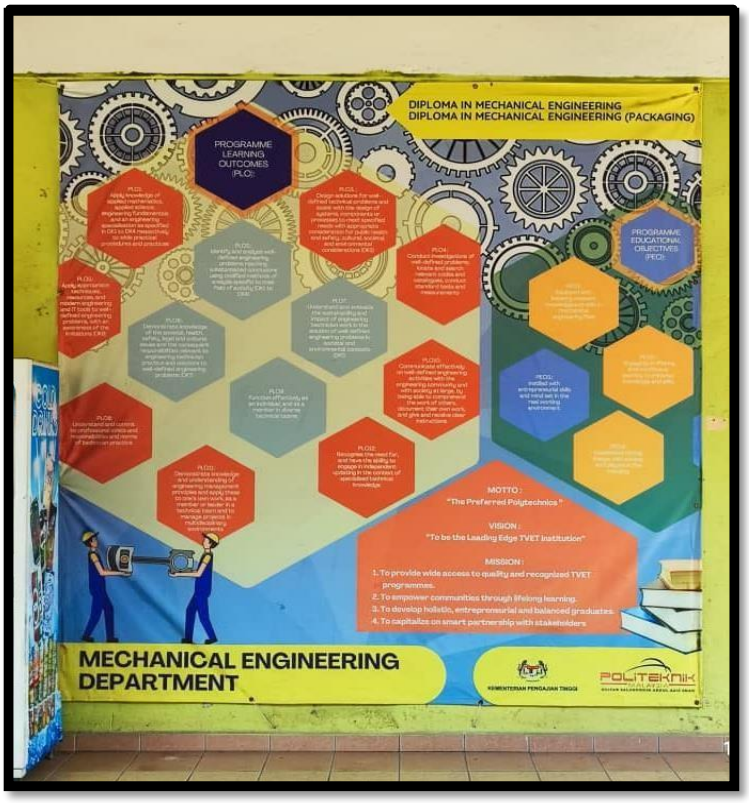
LAMAN PANDUAN PELAJAR

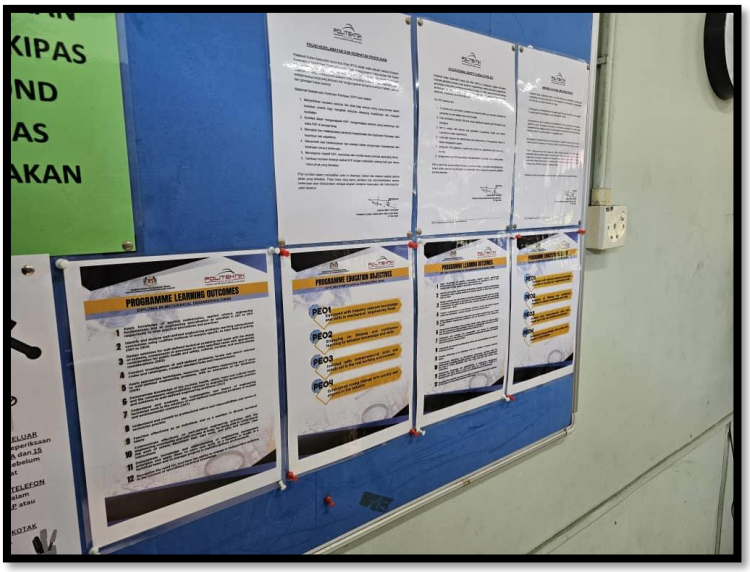
UTAMA JABATAN KEJURUTE... DKM DMP KMK PENCAPAIAN PELAJAR

PENCAPAIAN PELAJAR 2024

"MyJKM iNFO" : https://mylink.la/jkm_student_guide

PEO's poster for Mechanical Engineering Department





Course Outline

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

MECHANICAL ENGINEERING DEPARTMENT
COURSE OUTLINE
SESSION I: 2025/2026

1.	NAME OF COURSE	**WORKSHOP TECHNOLOGY**
	COURSE CODE	**DJJ10243**
2.	SYNOPSIS	Workshop Technology provides exposure and knowledge in using hand tools, machine operation such as drilling, lathe, milling and computer numerical control. It also covers on gear measurement and inspection welding process in oxy acetylene, Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW).
3.	CREDIT VALUE	3
4.	PREREQUISITE/ CO-REQUISITE (IF ANY)	None
5.	SEMESTER/ YEAR OFFERED	Semester 1/ Year 1
6.	LECTURER & CLASS	Name : **NORSA`AIDAH BINTI SA`AID** Tel. No : **013-9270828** Email : norsaaidah@psa.edu.my Class: **DKM1E**
7.	**PROGRAMME EDUCATIONAL OBJECTIVES (PEO)** **DIPLOMA IN MECHANICAL ENGINEERING** PEO1: proficient with industry-relevant knowledge and skills in mechanical engineering field PEO2: engaging on lifelong and continuous learning to enhance knowledge and skills PEO3: acquire with entrepreneurial skills and mind set in the real working environment PEO4: establish links with society and players in the industry	
8.	**PROGRAMME LEARNING OUTCOMES (PLO):** PLO 1 : apply knowledge of applied mathematics, applied science, computer and engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices in area of mechanical engineering. PLO 7 : understand and commit to professional ethics and responsibilities and norms of technician practice and including complience with national and international laws. Demonstrate an understanding of the need for diversity and inclusion (DK9). PLO11 : recognise the need for, and have the ability for i) independent and life long learning and ii) critical thinking in the face of specialised technical knowledge (DK8).	

9. **COURSE LEARNING OUTCOMES (CLO):**
Upon completion of this course, students should be able to:

CLO1	Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology (C3, PLO1)
CLO2	Apply standard practice in operating mechanical tools and component (C3, PLO7)
CLO3	Demonstrate continuos learning and information management skills to complete assigned task. (A3, PLO11)

10. **ASSESSMENT METHOD**:
The course assessment consists of:

i. Continuous Assessment (CA) – 50%
ii. Final Examination (FE) – 50%

Assessment	Quantity	Percentage (%)
Quiz	1	5
Test	1	15
Presentation	1	10
Assigment	1	10
Case Study	1	10

11. **TEACHING SCHEDULE**

Topic No.	Topic/ Content	CLO	Recommended Contact Hours	Assessment Method	Week
1.0	**Hand Tools** This topic explain the types of parts and uses of hand tools and the measurement applications	CLO1	Lecture: 4 hours		WK 1 WK 2
2.0	**Drilling** This topic explain how to conduct drilling machine operation.	CLO1	Lecture: 4 Hours	QUIZ	WK 2 WK 3
3.0	**Lathe Machine** This topic the different parts of a lathe machine.	CLO1	Lecture: 3 Hours		WK 3 WK 4
4.0	**Milling Machine** This topic explain how to conduct Milling Machine with introduce the types,characteristics,basic principles of milling machine, methods of cut,	CLO1	Lecture: 4 hours	TEST	WK 4 WK 5

Appendix C1-4a

KEMENTERIAN PENGAJIAN TINGGI

EDISI 2021

GARIS PANDUAN PELAKSANAAN KAJIAN PENCAPAIAN PEO

BAHAGIAN KURIKULUM (BK)

JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK)

KEMENTERIAN PENGAJIAN TINGGI (KPT)

GARIS PANDUAN PELAKSANAAN KAJIAN PENCAPAIAN PEO
EDISI 2021
BAHAGIAN KURIKULUM (BK)
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK)
KEMENTERIAN PENGAJIAN TINGGI (KPT)
NO. ISBN: 9789671904176

Diterbitkan oleh
Bahagian Kurikulum, Jabatan Pendidikan Politeknik dan Kolej Komuniti
Galeria PjH, Aras 4, Jalan P4W, Persiaran Perdana, Presint 4, 62100 Putrajaya
Tel : 03-88919000
Faks : 03-88919056

Hak cipta terpelihara. Tiada mana-mana bahagian dalam penerbitan ini dibenarkan ditiru, diterbit semula atau disimpan dalam bentuk yang boleh dipergunakan lagi, atau dipindah dalam mana-mana cara, baik dengan cara elektronik, mekanikal, penggambaran semula, perakaman atau sebaliknya tanpa mendapat izin bertulis daripada Bahagian Kurikulum, Jabatan Pendidikan Politeknik dan Kolej Komuniti.

JAWATANKUASA PEMBANGUNAN DAN PENERBITAN

PENAUNG
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Ketua Pengarah JPPKK

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Pengarah Kanan (Akademik)

Pengerusi:
Dr. Hjh Norhayati binti Zakaria
Pengarah BK

Ketua Penyunting:
Dr. Noreen binti Kamarudin

Penyunting Bahasa:
Dr. Shahiza binti Ahmad Zainuddin

Penyunting:
Hainani binti Chik
Dr. Nursakinah binti Md Salleh
Siti Ruqayyah As-Sadiq binti Abdul Rahim

Penulis:
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Hasanah binti Md Amin
Rohaniah binti Mohd Nor
Khairul Azha bin Ahmad
Hainani binti Chik
Dr. Nursakinah binti Md Salleh
Amalina Kamilah binti Ibrahim
Suziyana binti Yaacob
Siti Ruqayyah As-Sadiq binti Abdul Rahim

SEKALUNG PENGHARGAAN

Dr. Mazura binti Mansor, Dr. Azuin binti Ramli, Dr. Nor Haniza binti Mohamad, Dr. Zunuwanas bin Mohamad, Roziyani binti Zaidon, Noraina binti Abdul Rahman, Suzanah binti Hashim, Siti Maryam binti Mohd Arifin, Mohd Zaidi bin Sarip, Fareed bin Jaafar, Ts. Azman bin Ahmad, Nurul Awanis binti Muhammad, Abd. Aziz bin Bakeri, Hijrah Saputra bin Erwanto, Fatin Fathiah binti Azman, Norasmah binti Abdullah, Nadhzifatul Khuzaimah binti Mohd Dahlan, Nadia Hariri, Norbaya binti Mhd Simin, Jabatan Kejuruteraan Awam dan Jabatan Perdagangan Politeknik Sultan Idris Shah, Jabatan Kejuruteraan Elektrik Politeknik Port Dickson, Kolej Komuniti Tawau

serta

semua pegawai BK dan warga JPPKK yang terlibat secara langsung atau tidak langsung dalam pembangunan garis panduan ini.

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GLOSARI

Alumni	Graduan yang telah bergraduat dari institusi
BEM	*Board of Engineers Malaysia* atau Lembaga Jurutera Malaysia
BK	Bahagian Kurikulum
BPN	Bahagian Peperiksaan dan Penilaian
CCMS	*Community College Management System*
CIDOS	*Curriculum Information Document Online System*
CLO	*Course Learning Outcome* atau Hasil Pembelajaran Kursus
COPPA	*Code of Practice for Programme Accreditation*
CORR	*Course Outcome Review Report*
CQI	*Continuous Quality Improvement* atau Penambahbaikan Kualiti Berterusan
ETAC	*Engineering Technology Accreditation Council*
EP	*Education Provider* atau Institusi Pemberi Pendidikan
FPK	Falsafah Pendidikan Kebangsaan
IHL	*Institutions of Higher Learning* atau Institusi Pendidikan Tinggi (IPT)
JPPKK	Jabatan Pendidikan Politeknik dan Kolej Komuniti
JKIK	Mesyuarat Jawatankuasa Induk Kurikulum Kolej Komuniti
LD	*Learning Domain* atau Domain Pembelajaran
MBOT	*Malaysian Board of Technologist* atau Lembaga Teknologis Malaysia

MLK	Mesyuarat Lembaga Kurikulum Kursus Pengajian dan Program Latihan di Politeknik
MQA	*Malaysian Qualification Agency* atau Agensi Kelayakan Malaysia
OBE	*Outcome Based Education* atau Pendidikan Berasaskan Hasil Pembelajaran
PEO	*Programme Educational Objectives* atau Objektif Pendidikan Program
PLO	*Programme Learning Outcome* atau Hasil Pembelajaran Program
PLORR	*Programme Learning Outcome Review Report*
S3P	Sistem Pelaporan Pencapaian PLO
SPMP	Sistem Pengurusan Maklumat Politeknik
TTAC	*Technology and Technical Accreditation Council*

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1.0 PENDAHULUAN

Garis panduan ini dibangunkan untuk memberi panduan kepada para pengurus akademik Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) khususnya di politeknik dan kolej komuniti untuk tujuan berikut:

i) Melaksanakan Kajian Pencapaian *Programme Educational Objectives* (PEO) alumni yang diperlukan badan akreditasi bagi tujuan akreditasi program
ii) Menilai pencapaian PEO alumni bagi tujuan penambahbaikan kurikulum

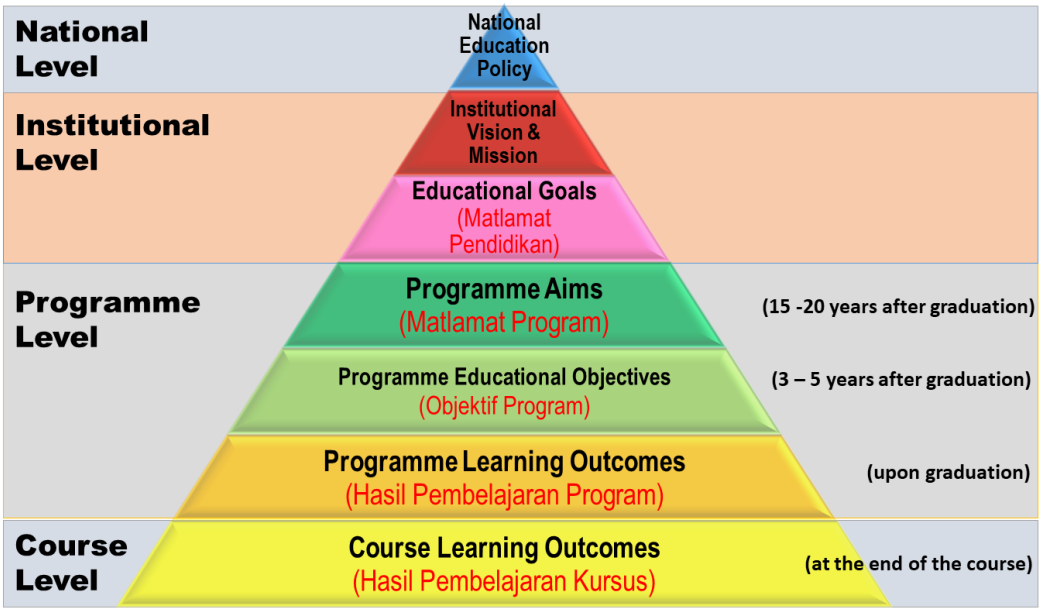
Skop garis panduan ini adalah seperti berikut:

i) Penggubalan, pengesahan, penilaian dan penambahbaikan PEO di dalam kurikulum
ii) Penilaian PEO mengikut keperluan standard badan akreditasi
iii) Pelaksanaan Kajian Pencapaian PEO
iv) Pelaporan Kajian Pencapaian PEO

2.0 PENETAPAN PEO DI DALAM KURIKULUM

Programme Educational Objectives (PEO) atau Objektif Pendidikan Program merupakan elemen asas dalam kurikulum. Rajah 1 menunjukkan kedudukan PEO di dalam konsep asas pembangunan kurikulum.

Rajah 1
Konsep Asas Pembangunan Kurikulum



Sumber: Shahrir Abdullah (2016). *Bengkel Penilaian Programme Educational Objectives Politeknik Malaysia.* Anjuran Bahagian Pembangunan Kurikulum, Jabatan Pendidikan Politeknik, Hotel Furama Kuala Lumpur, 20 – 22 November 2016.

2.1. Definisi PEO

Programme Educational Objectives (PEO) adalah pernyataan jangka panjang suatu program yang menyokong Falsafah Pendidikan Kebangsaan (FPK), visi dan misi, serta matlamat pendidikan sesebuah institusi. Ia didefinisikan seperti berikut:

i) "*Broad statements that describe the career and professional accomplishments that the programme is preparing graduates to achieve after they graduated*" (MQA, 2018, v).

ii) "*Specific goals consistent with the vision and mission of the IHL, are responsive to the expressed interest of programme stakeholders, and describe the expected achievements of graduates in their career and professional life a few years after graduation*" (ETAC, 2020, 3).

iii) "*Broad statements that describe what the graduates ultimately will become in their career and professional life after several years of graduation. The PEOs are the specific goals of the programme and should align with the EP's vision and mission*" (MBOT, 2019, 12).

2.2. Pernyataan PEO di dalam Kurikulum

Di dalam proses pembangunan dan penambahbaikan kurikulum, pernyataan PEO yang digubal perlu mencerminkan ciri-ciri graduan yang dihasratkan setelah 3 hingga 5 tahun bergraduat. Sebagai contoh, ETAC (2020) menyenaraikan unsur-unsur berikut bagi pernyataan PEO:

i) Kerjaya yang dihasratkan bagi graduan
ii) Peranan/penglibatan graduan di dalam kerjaya masa depan (*role/involvement*)
iii) Kekuatan graduan yang dihasratkan (*niche/strength*)
iv) Lain-lain keperluan di masa depan (*future needs)*
v) Pernyataan yang jelas, boleh diukur dan boleh dicapai (*well-defined, measurable and achievable*).

Bilangan pernyataan PEO tidak ditetapkan dan tertakluk kepada kesesuaian suatu program.

2.3. Proses Penggubalan, Pengesahan, Kelulusan, Penilaian dan Penambahbaikan PEO di dalam Kurikulum

Proses penggubalan, pengesahan, kelulusan, penilaian dan penambahbaikan PEO di dalam kurikulum boleh dirujuk di Rajah 2. Secara ringkasnya terdapat lima (5) proses pembangunan dan penambahbaikan kurikulum yang melibatkan PEO:

i) Penggubalan pernyataan PEO oleh Jawatankuasa Penggubal Kurikulum
ii) Pengesahan pernyataan PEO oleh Jawatankuasa Penasihat Kurikulum yang terdiri dari pemegang taruh seperti pihak industri, komuniti, majikan, ahli akademik dan alumni melalui mesyuarat

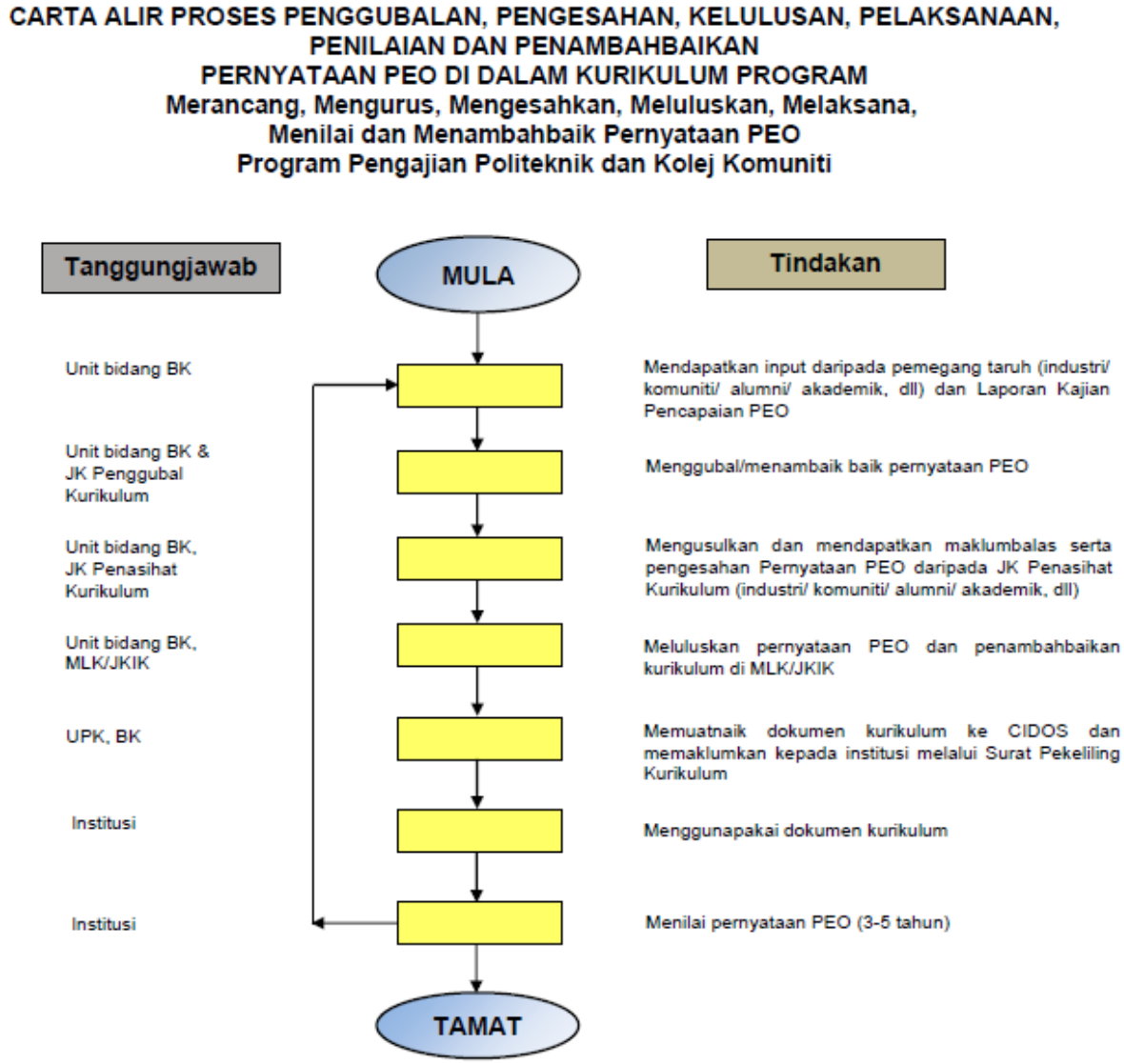
iii) Kelulusan dokumen kurikulum (termasuk PEO) di dalam Mesyuarat Lembaga Kurikulum Kursus Pengajian dan Program Latihan di Politeknik (MLK) dan Jawatankuasa Induk Kurikulum Kolej Komuniti (JKIK)

iv) Penilaian PEO setelah 3 hingga 5 tahun pelajar bergraduat

v) Penambahbaikan PEO oleh Jawatankuasa Penggubal Kurikulum berdasarkan input dari pemegang taruh termasuk daripada Laporan Kajian Pencapaian PEO alumni.

Rajah 2

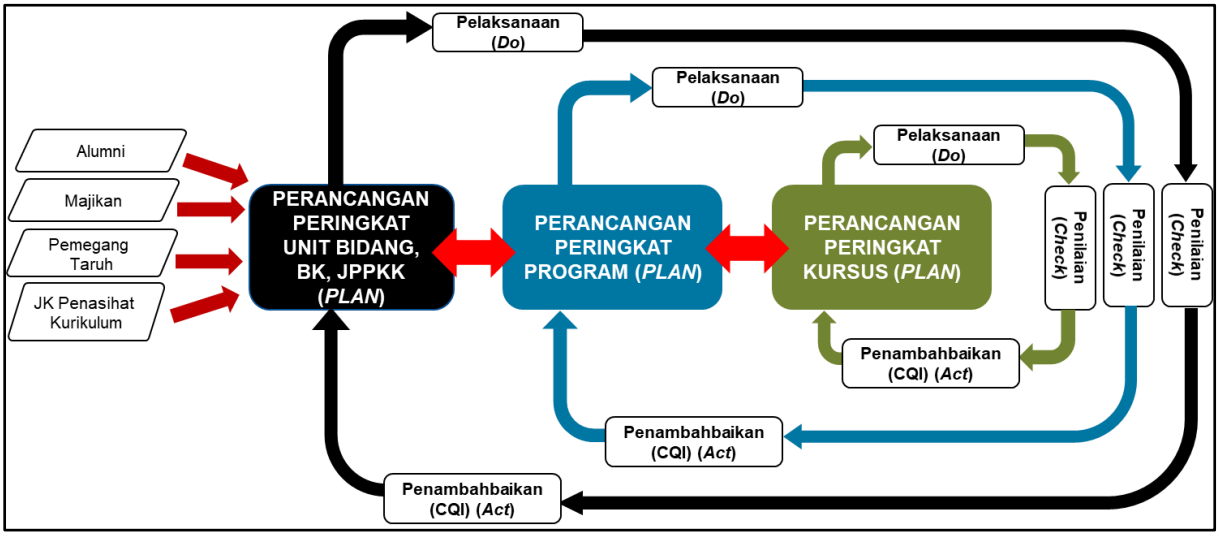
Carta Alir Proses Penggubalan, Pengesahan, Kelulusan, Pelaksanaan, Penilaian dan Penambahbaikan Pernyataan PEO di dalam Kurikulum Program



2.4. *Closing the Loop* - Proses Penambahbaikan Dokumen Kurikulum

Penambahbaikan Kualiti Berterusan (CQI) adalah satu proses jaminan kualiti bagi memastikan program akademik yang ditawarkan kekal relevan, dinamik dan berdaya saing. Proses ini adalah bersifat kitaran (*cyclical*) dan melibatkan dua (2) aktiviti utama iaitu pemantauan pelaksanaan program (*program monitoring*) dan semakan kurikulum program (*curriculum review*) yang perlu dilaksanakan dalam tempoh tertentu secara berkala dan sistematik.

Rajah 3
Mekanisma Closing the Loop - Penilaian PEO, PLO dan CLO



Rajah 3 menunjukkan bahawa penambahbaikan kurikulum berlaku di setiap peringkat iaitu di peringkat *Programme Educational Objective* (PEO), *Programme Learning Outcome* (PLO) dan *Course Learning Outcome* (CLO). Kitaran *Plan-Do-Check-Act* (PDCA) berlaku di setiap peringkat tersebut.

Proses *closing the loop* dilaksanakan melalui dapatan daripada pelbagai sumber dan peringkat seperti berikut:

i) Kajian Pencapaian PEO dilaksanakan oleh institusi untuk melihat pencapaian alumni selepas 3 hingga 5 tahun bergraduat. Maklum balas pencapaian alumni boleh diperolehi melalui kaji selidik yang dijawab oleh alumni dan majikan. Maklum balas yang diperolehi juga boleh digunakan untuk menambahbaik pernyataan PEO program.

ii) Laporan Hasil Pembelajaran Program/*Programme Learning Outcome Review Report* (PLORR) perlu dihasilkan oleh institusi pada setiap semester. PLORR digunakan untuk menilai pencapaian pelajar di peringkat program. Ia juga boleh digunakan sebagai input untuk menambahbaik pernyataan PLO dan program. Isu-isu yang dilaporkan pensyarah perlu dibincangkan di peringkat pengurusan program/akademik institusi dan dicadangkan penambahbaikan. Platform

pelaporan PLORR bagi program politeknik adalah Sistem Pelaporan Pencapaian PLO (S3P) yang dibangunkan oleh Bahagian Peperiksaan dan Penilaian (BPN), JPPKK, manakala platform bagi kolej komuniti adalah CCMS.

iii) Laporan Hasil Pembelajaran Kursus/ *Course Outcome Review Report* (CORR) dijana setiap semester oleh institusi, dan pensyarah mengisi cadangan penambahbaikan melalui sistem SPMP (politeknik) dan CCMS (kolej komuniti). CORR digunakan untuk menilai pencapaian pelajar di peringkat kursus. Ia juga boleh digunakan sebagai input untuk menambahbaik pernyataan CLO mahupun kandungan kursus.

iv) Minit Mesyuarat peringkat jabatan di institusi berkaitan penyelarasan kursus/ program, Minit Mesyuarat Penasihat Program/Industri/Komuniti serta minit mesyuarat yang berkaitan, harus digunakan sebagai input dalam menambahbaik kurikulum.

v) Maklumbalas daripada pensyarah yang dihantar ke Platform Maklum Balas Pensyarah boleh digunakan sebagai salah satu input dalam menambahbaik dokumen kurikulum.

vi) Dapatan daripada pemegang taruh seperti maklumbalas alumni, majikan/industri/komuniti yang diperolehi oleh institusi juga digunakan sebagai salah satu sumber untuk menambahbaik dokumen kurikulum.

3.0 PENILAIAN PEO MENGIKUT KEPERLUAN *MALAYSIAN QUALIFICATION AGENCY* (MQA) DAN BADAN PROFESIONAL

Secara umumnya, PEO dinilai bagi melihat:

i) kemenjadian graduan selepas 3 hingga 5 tahun bergraduat

ii) keberhasilan program (berdasarkan kemenjadian graduan)

Secara umumnya terdapat tiga (3) badan akreditasi/ badan profesional utama bagi program-program peringkat sijil, diploma dan sarjana muda di politeknik dan kolej komuniti iaitu:

i) *Malaysian Qualification Agency* (MQA)

ii) *Board of Engineers Malaysia* (BEM) melalui *Engineering Technology Accreditation Council* (ETAC)

iii) *Malaysian Board of Technologist* (MBOT) melalui *Technology and Technical Accreditation Council* (TTAC)

Ketiga-tiga badan akreditasi ini mempunyai keperluan serta kriteria penilaian PEO tersendiri.

3.1. Penilaian PEO - *Malaysian Qualification Agency* (MQA)

Pencapaian PEO alumni merupakan satu aspek yang dinilai oleh panel penilai bagi Audit Pematuhan (*Compliance Audit*). Audit Pematuhan (dikenali juga sebagai MQA

04) merupakan satu prosedur untuk memantau dan memastikan penyenggaraan dan penambahbaikan program yang telah diakreditasi mesti dilaksanakan sekurang-kurangnya 5 tahun sekali (MQA, 2018, 5).

Dua aspek yang berkaitan dengan PEO yang diaudit bagi program-program di bawah akreditasi MQA ialah:

i) Mekanisma bagi proses penggubalan dan pengesahan PEO (*Area 1: Programme Development & Delivery)*
ii) Mekanisma serta Penilaian Pencapaian PEO alumni (*Area 7: Programme Monitoring, Review and Continual Quality Improvement*)

Bagi perkara pertama, pembuktian bagi mekanisma proses penggubalan PEO adalah melalui Minit Mesyuarat/Laporan JK Penggubal Kurikulum, manakala pembuktian bagi mekanisma pengesahan PEO adalah melalui Minit Mesyuarat J/K Penasihat Kurikulum.

Bagi perkara kedua, mekanisma bagi menilai pencapaian PEO graduan/ alumni adalah melalui pelaksanaan Kajian PEO. Kaedah menilai pencapaian PEO graduan/alumni boleh dilaksanakan melalui:

i) kaji selidik persepsi alumni dan majikan (Shahrir Abdullah et al., 2005, Jodin Makinda et.al, 2011, Bibi Norasiqin, Sheikh Rahimullah, et al. *2020,* Nur Irfah Mohd Pauzi et al, 2013)
ii) *analysis of student performance and from longitudinal studies* (MQA, 2018, 26)
iii) *alumni report about their learning experience* (MQA, 2018, 27)

3.2. Penilaian PEO - *Engineering Technology Accreditation Council* (ETAC)

Majlis Akreditasi Teknologi Kejuruteraan (*Engineering Technology Accreditation Council*, ETAC) merupakan jawatankuasa teknikal yang ditubuhkan oleh Lembaga Jurutera Malaysia (*Board of Engineering Malaysia*, BEM). BEM merupakan badan profesional yang bertanggungjawab mengakreditasi kelayakan profesional termasuk kelayakan Teknologi Kejuruteraan dan Juruteknik Kejuruteraan melalui ETAC yang keanggotaannya dan fungsi selaras dengan Akta 679. Setelah memenuhi syarat yang ditetapkan, lulusan program Teknologi Kejuruteraan dan Juruteknik Kejuruteraan selanjutnya mendaftar sebagai graduan berdaftar Teknologis Kejuruteraan (*Engineering Technologist*) dan *Inspector of Works* yang melayakkan mereka memberi perkhidmatan penyeliaan kerja kejuruteraan secara sah di negara ini.

Sehubungan dengan itu, standard program bagi program Sarjana Muda Teknologi Kejuruteraan adalah *Engineering Technology Education Programme Accreditation Standard* edisi yang berkuatkuasa, manakala program Diploma Kejuruteraan atau Diploma Teknologi Kejuruteraan menggunakan standard program *Engineering Technician Education Programme Accreditation Standard* edisi yang berkuatkuasa.

Kriteria pertama (PEO) dari 7 kriteria penilaian ETAC adalah seperti yang dinyatakan berikut:

8.1 Criterion 1: Programme Educational Objectives

An engineering technician education programme seeking accreditation shall have published Programme Educational Objectives. The Programme Educational Objectives shall be the basis upon which the Programme Outcomes (Section 5.0) are formulated. The programme shall have a clear linkage between Programme Educational Objectives and Programme Outcomes. It is expected that important stakeholders especially from the industries provide inputs in the process of formulating the Programme Educational Objectives. There must be a documented and effective process, involving programme stakeholders, for the periodic review and revision of these Programme Educational Objectives.

(ETAC, 2020, p. 10)

Performance indicator ETAC bagi kriteria 1: *Programme Educational Objectives* (PEO) adalah seperti berikut:

i) Statements are well defined, measurable and achievable
ii) Statements are well published and publicised
iii) Clear linkage between Programme Educational Objectives and Programme Outcomes
iv) A documented and effective process, involving programme stakeholders, for the periodic review and revision
v) Assessment of performance available and subsequent CQI indicated

Standard ETAC di atas jelas menerangkan keperluan menghasilkan PEO yang mencerminkan keberhasilan dan kemenjadian graduan dalam kerjaya dan kehidupan profesional mereka. Pencapaian PEO ini haruslah dijajarkan dengan pengetahuan, kemahiran dan tingkahlaku mengikut hasil pembelajaran program (PLO). Disamping itu, PEO perlu mendapat maklumbalas atau input daripada pihak-pihak berkepentingan supaya PEO yang dihasilkan relevan dengan perkembangan kerjaya serta teknologi. Kesemua mekanisma proses penambahbaikan PEO dan semakan berkala PEO perlulah didokumentasikan dan melibatkan pihak berkepentingan.

Secara keseluruhannya pengukuran dan penilaian PEO ini amat penting untuk menunjukkan pencapaian PEO menyumbang ke arah pencapaian visi dan misi institusi dan jabatan. Pencapaian PEO ini berkait rapat dengan keberhasilan rekabentuk kurikulum serta kemenjadian pelajar selepas 3-5 tahun bergraduat. Hasil penilaian PEO ini akan menyumbang kepada penambahbaikan kurikulum berikutnya.

Pelaksanaan kajian pencapaian PEO alumni bagi program Sarjana Muda Teknologi Kejuruteraan dan Diploma Kejuruteraan di bawah akreditasi ETAC membolehkan *performance indicator* i, iv dan v dinilai.

3.3. Penilaian PEO - *Technology and Technical Accreditation Council* (TTAC)

Bagi program-program di bawah akreditasi TTAC, berikut adalah aspek penilaian PEO yang dititikberatkan (TTAC, 2019, 12):

i) PEO yang dibangunkan mestilah menunjukkan kepentingan pemegang taruh program (*the establishment of PEOs must demonstrate the interest of the programme's stakeholders*)

ii) Institusi yang menawarkan program/ penawar pendidikan (e*ducation provider)* mesti mempunyai *key performance indicator* (KPI) yang jelas bagi setiap pernyataan PEO dan dipersetujui melalui konsultasi dengan pemegang taruh

iii) Program juga haruslah mempunyai mekanisma yang jelas dan bersesuaian untuk memantau dan menilai pencapaian PEO

Bagi perkara pertama, pembangunan PEO dilaporkan melalui Minit Mesyuarat/ Laporan JK Penggubal Kurikulum, manakala pengesahan PEO oleh pemegang taruh berkepentingan adalah melalui Minit Mesyuarat JK Penasihat Kurikulum.

Perkara kedua dan ketiga merupakan perkara yang diaudit oleh panel penilai TTAC bagi proses akreditasi semula (*reaccreditation*) di bawah kriteria 1: *Programme Design and Delivery.* Pihak institusi perlu menghantar *Self-Review Report* (SRR) sebagai pernyataan pembuktian seperti yang ditunjukkan di Jadual 1.

Jadual 1
Aspek Berkaitan PEO di dalam Self-Review Report

2. List of PEOs with respective KPI, monitoring and evaluation mechanism

	Statement	KPI	Evidence of stakeholders engagement
PEO1			
PEO2			
PEOxn			

Description of PEO evaluation mechanism	

Bagi perkara kedua, KPI PEO perlu ditetapkan dan dipersetujui melalui kaedah konsultansi/ mesyuarat/ *focus group* atau lain-lain kaedah yang bersesuaian antara institusi dengan pemegang taruh/ industri berkaitan. Mekanisma penetapan KPI PEO bagi program-program di bawah akreditasi TTAC akan diterangkan di subtopik 3.4.1.

Bagi perkara ketiga, mekanisma bagi memantau dan menilai pencapaian PEO graduan/ alumni adalah melalui pelaksanaan Kajian PEO. Di bawah TTAC, perkara kedua dan ketiga dinilai di bawah kriteria 1: *Programme Design and Delivery*.

3.4. Rumusan Penilaian PEO Badan Akreditasi

Terdapat persamaan dan perbezaan keperluan di antara tiga badan akreditasi: MQA, ETAC dan TTAC. Rumusan keperluan Pelaksanaan PEO oleh ketiga-tiga badan akreditasi adalah seperti Jadual 2.

Jadual 2
Rumusan Ringkas Keperluan Pelaksanaan Penilaian PEO oleh Badan Akreditasi

PERKARA	BADAN AKREDITASI		
	MQA	ETAC	TTAC
Pembuktian proses penggubalan dan pengesahan PEO	/	/	/
Penglibatan pemegang taruh dalam penggubalan dan pengesahan PEO	/	/	/
Keperluan pemakluman dan penerbitan PEO	x	/	x
Penetapan KPI PEO	x	/	/
Pembuktian mekanisma penilaian pencapaian PEO	/	/	/

3.4.1 Proses Penetapan KPI PEO di dalam Kurikulum

Secara umumnya, penetapan KPI PEO bagi program-program di bawah badan akreditasi dirumuskan seperti berikut:

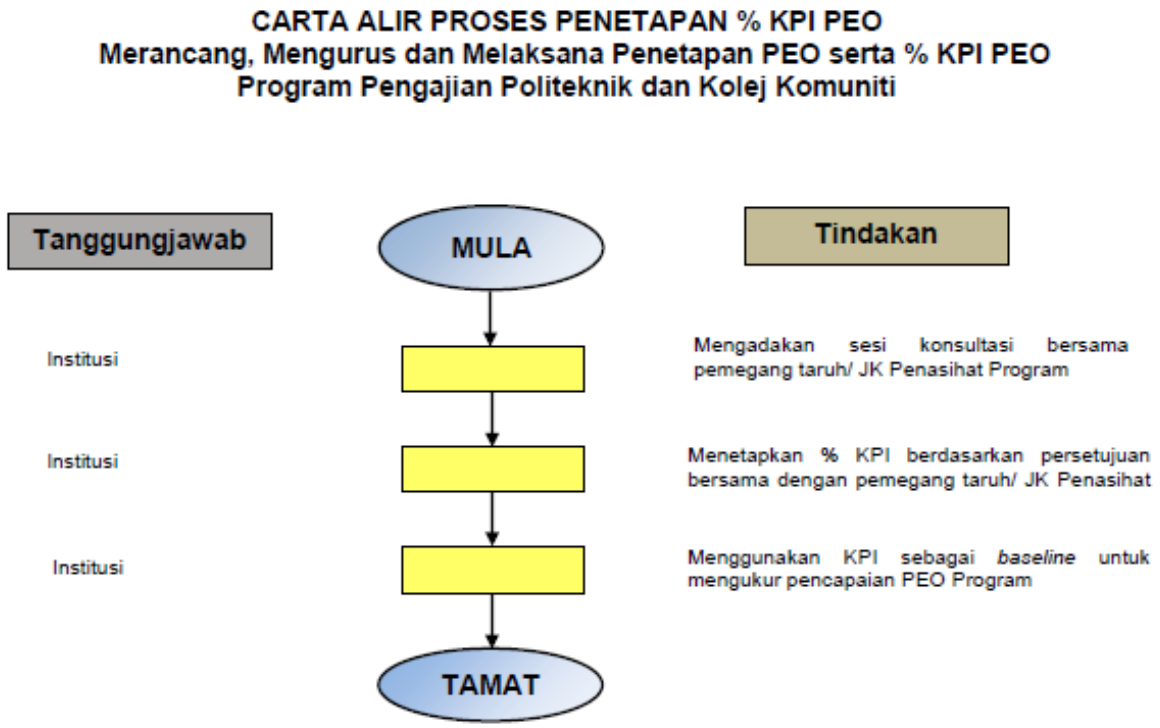
i) **Program di bawah akreditasi MQA:**
TIADA keperluan penetapan dan pengukuran pencapaian KPI dinyatakan dalam mana-mana dokumen.

ii) **Program di bawah akreditasi TTAC:**
Keperluan penetapan dan pengukuran pencapaian KPI dinyatakan secara jelas di dalam manual akreditasi

iii) **Program di bawah akreditasi ETAC:**
Keperluan penetapan dan pengukuran pencapaian KPI dinyatakan secara tersirat (di bawah frasa: s*tatements are well defined, measurable and achievable).*

Oleh itu, bagi **program-program di bawah akreditasi TTAC dan ETAC, perlulah ditetapkan KPI PEO dahulu sebelum dilaksanakan Kajian Pencapaian PEO.** Penetapan KPI PEO seperti yang ditunjukkan dalam Rajah 4 dilaksanakan oleh institusi dengan mengadakan sesi konsultasi bersama pemegang taruh/ JK Penasihat Program. Konsultasi boleh berlaku dalam bentuk mesyuarat/ bengkel/ kajian soal selidik dan sebagainya mengikut kesesuaian pihak institusi. Hasil persetujuan konsultasi tersebut, % KPI PEO perlu ditetapkan sebagai *baseline* untuk mengukur pencapaian setiap PEO.

Rajah 4
Proses Penetapan Peratus KPI PEO bagi Program TTAC dan ETAC

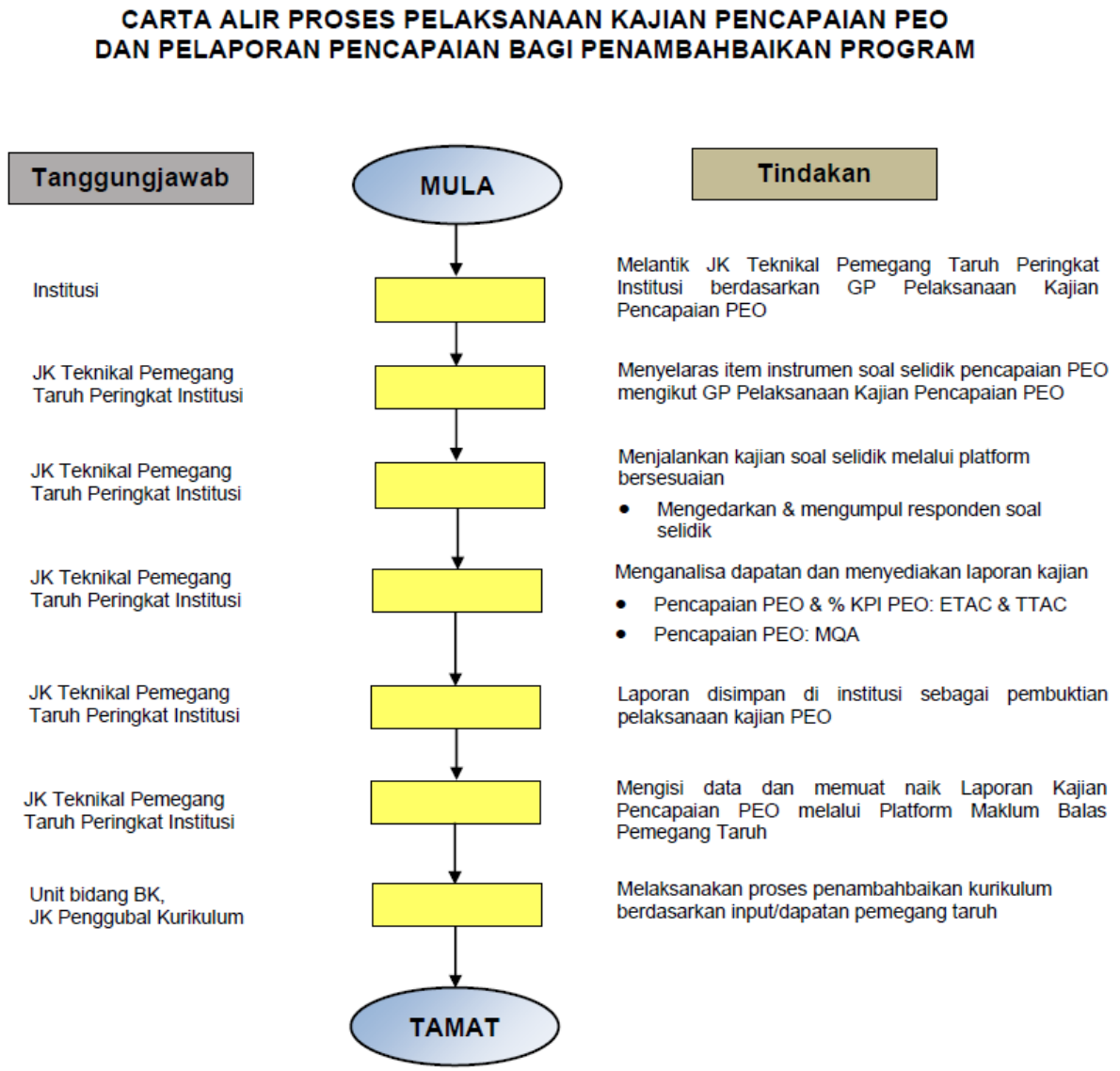


3.4.2 Mekanisma Pelaksanaan Kajian Pencapaian PEO

Selepas peratus KPI PEO ditetapkan bagi program di bawah akreditasi TTAC dan ETAC, bolehlah dilaksanakan Kajian Pencapaian PEO alumni. Rajah 5 menunjukkan carta alir proses pelaksanaan Kajian Pencapaian PEO bagi program di bawah akreditasi MQA, ETAC dan TTAC. Di dalam Rajah 5 diterangkan bahawa institusi boleh merujuk kepada Garis Panduan Perlaksanaan Kajian Pencapaian PEO bagi merancang pelaksanaan Kajian PEO. Bagi tujuan ini, institusi dicadangkan menubuhkan Jawatankuasa Teknikal Pemegang Taruh di peringkat institusi bagi menyelaraskan hal-hal berkaitan dengan pelaksanaan, analisa serta pelaporan kajian ini (lihat topik 4.0). Laporan pencapaian PEO tersebut:

i) perlu disimpan di institusi dan bersedia untuk ditunjukkan/diterangkan kepada panel audit apabila dimohon (bukti perlaksanaan Kajian Pencapaian PEO oleh institusi)
ii) dimuatnaik ke Platform Maklum balas Pemegang Taruh JPPKK untuk digunakan sebagai input penambahbaikan kurikulum.

Rajah 5
Carta Alir Proses Pelaksanaan Kajian Pencapaian PEO serta Penggunaan Dapatannya bagi Penambahbaikan Program



4.0 PELAKSANAAN KAJIAN PEO

4.1. Kajian Literatur Tentang Pelaksanaan Kajian Pencapaian PEO

Beberapa kajian PEO telah dilaksanakan di institusi pendidikan tinggi di dalam dan di luar negara (Shahrir Abdullah, et al., 2008, 2009; Jodin Makinda et al., 2011; Noor Ezlin Ahmad Basri et al., 2011; 2020; Abbadeni et al., 2013; Nur Irfah Mohd Pauzi, et al., 2013; Abdul Rahman et al., 2016; Bibi Norasiqin et al., 2020).

Bagi mengukur pencapaian PEO alumni, para penyelidik tersebut memperolehinya melalui kaedah kaji selidik (Shahrir Abdullah et al, 2008, 2009; Jodin Makinda et al., 2011, Noor Ezlin Ahmad Basri et al., 2011; Nur Irfah Mohd Pauzi et al., 2013; Abdul

Rahman et al., 2016; Bibi Norasiqin et al., 2020) dan *focus group* (Abbadeni et al., 2013).

Pemegang taruh utama yang terlibat dalam menilai pencapaian PEO adalah alumni (Shahrir Abdullah et a.l, 2008, 2009, Jodin Makinda et al., 2011, Bibi Norasiqin et al., 2020), majikan (Shahrir Abdullah et al., 2008, 2009; Noor Ezlin Ahmad Basri et al., 2011) dan ibu bapa (Noor Ezlin Ahmad Basri et al., 2011).

Rumusan Kajian literatur pelaksanaan Kajian Pencapaian PEO adalah seperti di Jadual 3.

Jadual 3
Rumusan Kajian Literatur Tentang Pelaksanaan Kajian Pencapaian PEO

Rumusan Kajian Literatur Tentang Pelaksanaan Kajian Pencapaian PEO alumni	
Kaedah Pengukuran yang digunakan	i) *Focus group* survey, soal selidik alumni, mesyuarat bersemuka dengan Alumni di pejabat majikan (Abbadeni et al., 2013) ii) Soal selidik alumni (Shahrir Abdullah, et al., 2008, 2009, Jodin Makinda et al., 2011, Bibi Norasiqin et al., 2020) iii) Soal selidik majikan (Shahrir Abdullah, et al., 2008, 2009; Noor Ezlin Ahmad Basri et al., 2011) iv) Soal selidik ibu bapa (Noor Ezlin Ahmad Basri et al., 2011)
Instrumen Pengukuran Yang digunakan	i) Soal selidik atas talian dengan 5 point skala Likert seperti berikut: of 5 points: "*Strongly Agree" = 5, "Agree" = 4, "Neutral" = 3, "Disagree" = 2, "Strongly Disagree" = 1.* (Abbadeni et al., 2013) *ii)* Soal selidik menggunakan skala Likert dan item indikator yang dibangunkan oleh pemegang taruh program. Soal selidik ini memohon alumni untuk meletakkan ranking pencapaian PEO menggunakan skala Likert berikut: (1) = *poorly achieved,* (3) = *satisfactorily achieved), (5) = fully achieved* sebagai pengukuran pencapaian PEO. (Jodin Makinda et al., 2011) iii) Soal selidik alumni dan industri menggunakan skala Likert - semua soalan yang dibangunkan menyenaraikan semua ciri yang membentuk penyataan PEO atau PO tersebut. *0 = not relevant,* *1 = not important,* *2 = somewhat important,* *3 = important,* *4= very important,*

	5= extremely important. (Abdullah, Shahrir et al., 2009) *iv)* Soal selidik atas talian kepada majikan*/ anonymous online questionnaire survey* menggunakan skala Likert dan soalan berbentuk terbuka*/ open suggestion* dan maklumbalas umum. Skala Likert mengukur kepentingan PEO bagi graduan Kejuruteraan Awam yang bekerja dengan majikan tersebut: *0 = not relevant,* *1 = not important,* *2 = somewhat important,* *3 = important,* *4 = very important,* *5= extremely important.* *(Nur Irfah Mohd Pauzi,* et al., *2013)*
Sampel yang digunakan	i) Alumni (Bibi Norasiqin et al, 2020, Jodin Makinda et al., 2011) ii) Industri dan alumni (Abdul Rahman et al., 2016) iii) Ibubapa (Noor Ezlin Ahmad Basri et al., 2011) iv) majikan graduan (Noor Ezlin Ahmad Basri et al., 2011) v) Industri (Noor Ezlin Ahmad Basri et al., 2011) vi) Industri dan alumni yang ada dalam pangkalan data Latihan Industri dan alumni Fakulti Kejuruteraan (Abdullah, Shahrir et al., 2009)
Limitasi Kajian	1. Pencapaian sebenar PEO bergantung kepada kebolehan pengukuran pernyataan PEO, item soalan dan indikator item yang dibangunkan. 2. *Self-rating* mempunyai limitasi dari segi *response bias* (Jodin Makinda et al., 2011)

4.2. Perancangan Pelaksanaan Kajian Pencapaian PEO di Institusi

Institusi perlu merancang masa dan tempoh pelaksanaan kajian ini. Jadual 4 menerangkan cadangan aktiviti kajian dan tempoh masa yang diperlukan untuk kajian PEO ini.

Jadual 4
Cadangan Tempoh Perancangan Pelaksanaan Kajian PEO di Institusi

BIL	AKTIVITI	CADANGAN TEMPOH
1.	Membentuk Jawatankuasa dan Menetapkan Objektif Kajian/ Merancang Pelaksanaan Kajian	1 hari
2.	Memilih dan Menetapkan Responden	1 hari
3.	Menambahbaik Instrumen Kajian (mengikut keperluan badan akreditasi dan institusi)	7 hari

4.	Mengedarkan dan Mengumpul Data	30 hari
5.	Memproses dan Menganalisa Data	10 hari
6	Melapor Kajian	10 hari

4.2.1 Membentuk Jawatankuasa Teknikal Pemegang Taruh Institusi dan Menetapkan Objektif Kajian/ Merancang Pelaksanaan Kajian

Pegawai yang bertanggungjawab bagi memastikan kajian dan laporan pencapaian PEO dilaksanakan di institusi adalah Timbalan Pengarah (Akademik) merangkap Pengerusi Jawatankuasa Teknikal Pemegang Taruh Institusi. JK Teknikal Pemegang Taruh Institusi perlu menetapkan objektif kajian serta merancang pelaksanaan kajian.

Cadangan Ahli Jawatankuasa Teknikal Pemegang Taruh Institusi dan fungsinya adalah seperti berikut:

i) Pengerusi: Timbalan Pengarah Akademik
ii) Ketua Program
iii) Ketua *Collaboration, Industrial Services and Employment Centre* (CISEC)
iv) Pegawai Perhubungan dan Latihan Industri
v) Pegawai Alumni
vi) Ketua Unit Penyelidikan Inovasi dan Komersial (KuPIK)/ *Research & Development* (R&D)
vii) Pegawai/ pensyarah lain yang difikirkan perlu (mengikut keperluan institusi)

Fungsi Jawatankuasa Teknikal Pemegang Taruh Institusi adalah seperti berikut:

i) Menambahbaik instrumen dengan masukkan pernyataan PEO program serta deskriptor/indikator PEO ke dalam instrumen
ii) Mendapatkan maklumat alumni bagi tujuan pengedaran soal selidik
iii) Mengedarkan instrumen soal selidik kepada responden
iv) Menganalisa data yang diperolehi
v) Menghasilkan laporan pencapaian PEO
vi) Menyimpan laporan tersebut untuk tujuan audit
vii) Menghantar laporan tersebut kepada pihak audit (sekiranya dimohon)
viii) Mengisi data dan memuat naik laporan kajian pencapaian PEO di Platform Maklum Balas Pemegang Taruh JPPKK bagi tujuan penambahbaikan kurikulum

4.2.2 Memilih dan Menetapkan Sasaran Responden

Institusi perlu memilih responden mengikut kriteria pemilihan seperti yang ditetapkan dalam objektif kajian. Sekiranya ia adalah Kajian Pencapaian PEO yang pertama, ia tidak mempunyai bandingan dengan kajian sebelumnya. Kajian ini boleh dijadikan sebagai *baseline* kepada kajian akan datang.

Ketua bidang/program perlu mendapatkan senarai alumni dari Pegawai Alumni

mengikut program. Penetapan bilangan responden bergantung kepada kriteria yang perlu ditetapkan oleh institusi. Saiz sampel boleh ditentukan dengan menggunakan rumusan penentu saiz populasi Krejcie dan Morgan (1970) di Lampiran 1.

4.2.3 Menambahbaik Instrumen Kajian

Antara perkara-perkara yang perlu diselaraskan dan ditambahbaik dalam instrumen adalah seperti berikut:

i. mengubahsuai demografi, nama institusi, nama program, tahun bergraduat dan senarai pekerjaan mengikut keperluan program masing-masing.
ii. memasukkan pernyataan PEO program serta deskriptor/ indikator PEO (kerana setiap program/bidang mempunyai pernyataan PEO yang berbeza).

Di dalam Garis Panduan Pelaksanaan Kajian Pencapaian PEO ini, dilampirkan senarai templat dan contoh instrumen mengikut badan akreditasi seperti di Jadual 5.

Jadual 5
Jadual Senarai Templat dan Contoh Instrumen

Bil	Instrumen	Lampiran
1.	Templat Instrumen Penilaian PEO Program MQA bagi Alumni	Lampiran 2A
2.	Contoh Instrumen Penilaian PEO Program MQA bagi Alumni	Lampiran 2B
3.	Templat Instrumen Penilaian PEO Program MQA bagi Majikan	Lampiran 2C
4.	Contoh Instrumen Penilaian PEO Program MQA bagi Majikan	Lampiran 2D
5.	Templat Instrumen Penetapan KPI PEO (TTAC & ETAC)	Lampiran 3A
6.	Templat Instrumen Program ETAC (Dichotomous & Skala Likert)	Lampiran 3C
7.	Contoh Instrumen Penilaian Program ETAC (Dichotomous)	Lampiran 3D
8.	Contoh Instrumen Penilaian Program ETAC (Skala Likert)	Lampiran 3F
9.	Templat Instrumen Penilaian PEO Program TTAC (Dichotomous & Skala Likert)	Lampiran 4A
10.	Contoh Instrumen Penilaian Program TTAC (Dichotomous)	Lampiran 4B
11.	Contoh Instrumen Penilaian Program TTAC (Skala Likert)	Lampiran 4D

Kumpulan pengkaji boleh membuat pemurnian terhadap instrumen ini sebelum digunapakai bagi melaksanakan kajian.

4.2.4 Mengedar dan Mengumpul Data

Kumpulan pengkaji boleh memilih platform yang bersesuaian bagi proses pengumpulan data. Terdapat pelbagai platform soal selidik secara percuma dalam talian yang boleh digunakan seperti *Google Form, SurveyMonkey, Typeform*, *SoGoSurvey* dan sebagainya. Adalah dicadangkan supaya tempoh masa maksimum bagi responden untuk menjawab kajian sebanyak 15 minit. Setelah soal selidik dimasukkan dalam platform yang dipilih, pemakluman boleh dilakukan melalui pelbagai platform media sosial seperti di laman web institusi, *Facebook* Persatuan Alumni, kumpulan *Whatsapp* serta *Telegram* alumni dan sebagainya. Penggunaan pelbagai saluran ini adalah bagi memastikan responden yang disasarkan dapat mengakses link soal-selidik tersebut. Kaedah ini dikenali sebagai *targeted snowball sampling* (Dusek, 2015).

4.2.5 Memproses dan Menganalisa Data

Data yang telah dikumpul, boleh dianalisis dengan menggunakan perisian yang bersesuaian seperti SPSS dan *Microsoft Excel*. Kumpulan pengkaji perlu membuat proses pembersihan data (*data cleaning*) bagi mengurangkan ralat disebabkan oleh data yang tidak lengkap. Secara umumnya, kajian PEO ini akan menghasilkan dapatan data deskriptif. Data deskriptif ini merujuk kepada data yang memberi gambaran tentang sesuatu perkara seperti peratus, jumlah, purata (min, median dan mod) dan sebagainya. Data yang telah dianalisis ini boleh dibentangkan dengan menggunakan graf atau carta seperti carta bar, carta pai, carta radar dan sebagainya.

4.2.6 Melapor Kajian

Setelah selesai analisis data, kumpulan pengkaji perlu membuat laporan kajian. Cadangan format pelaporan kajian telah disediakan dengan merujuk kepada Jadual 6. Penulisan laporan kajian ini perlu merujuk kepada objektif kajian. Contohnya, bagi keperluan MQA04, adalah memadai bagi institusi merumuskan dapatan pencapaian PEO alumni. Bagi program di bawah akreditasi TTAC dan ETAC pula, institusi perlu melaporkan pencapaian PEO alumni berdasarkan KPI yang disasarkan. Sekiranya laporan bertujuan untuk menambahbaik pernyataan PEO, laporan kajian akan memfokus kepada dapatan kaji selidik pernyataan PEO dan mencadangkan penambahbaikan bagi pernyataan PEO sedia ada. Kumpulan pengkaji boleh merujuk kepada contoh laporan kajian-kajian ini.

Jadual 6
Jadual Senarai Laporan

Bil	Instrumen	Lampiran
1.	Contoh Laporan Kajian Pencapaian PEO Program MQA bagi Alumni	Lampiran 2E
2.	Contoh Laporan Penetapan KPI PEO Program ETAC/ TTAC	Lampiran 3B
3.	Contoh Laporan Kajian Pencapaian PEO Program ETAC bagi Alumni (Dichotomous)	Lampiran 3E
4.	Contoh Laporan Kajian Pencapaian PEO Program ETAC bagi Alumni (Scala Likert)	Lampiran 3G
5.	Contoh Laporan Kajian Pencapaian PEO Program TTAC bagi Alumni (Dichotomous)	Lampiran 4C
6.	Contoh Laporan Kajian Pencapaian PEO Program TTAC bagi Alumni (Scala Likert)	Lampiran 4E

4.3. MQA

4.3.1 Kaedah Pelaksanaan Kajian Pencapaian PEO bagi Program-Program di bawah Akreditasi MQA

Instrumen sedia ada telah dibangunkan oleh Jawatankuasa Teknikal Pemegang Taruh JPPKK bagi tujuan audit pematuhan MQA 04 seperti yang telah diputuskan di dalam Minit Mesyuarat Jawatankuasa Teknikal Pemegang Taruh Bil. 1/2020. Ianya perlu dimurnikan mengikut PEO program pengajian dan sesuai digunakan bagi program-program di bawah akreditasi MQA.

4.3.2 Instrumen Kajian PEO MQA

Instrumen Kajian PEO MQA dibangunkan berdasarkan instrumen soal-selidik kajian pencapaian PEO berasaskan skala Likert yang telah dilaksanakan di Institusi Pengajian Tinggi (IPT) oleh Shahrir Abdullah et al. (2008 & 2009), Jodin Makinda et al. (2011), Noor Ezlin Ahmad Basri et al. (2011), Abbadeni et al., 2013, Bibi Norasiqin et al. (2020), Nur Irfah Mohd Pauzi, et al, (2013), Abdul Rahman et al., (2016). Panduan penyediaan soal-selidik MQA04 adalah seperti di Jadual 7.

Jadual 7
Panduan Penyediaan Soal-Selidik MQA04

Rekabentuk kajian	Kajian yang boleh dijalankan adalah kajian yang berbentuk deskriptif yang menggunakan set soalan soal-selidik sebagai alat kajian.
Populasi dan Sampel Kajian	Populasi kajian perlulah terdiri daripada alumni program yang telah 3 - 5 tahun bergraduat. Saiz sampel boleh ditentukan dengan menggunakan rumusan penentu saiz populasi yang dilaporkan oleh Krejcie dan Morgan (1970) (Rujuk Lampiran 1).
Instrumen Kajian	**INSTRUMEN KAJIAN ALUMNI** Soal selidik ini terbahagi kepada 3 bahagian: i) Demografi ii) Kepentingan pernyataan PEO menurut alumni iii) Persepsi alumni terhadap pencapaian PEO masing-masing. Bahagian ii) dan iii) mengandungi item soalan dalam bentuk skala Likert dan deskriptor bagi mendapatkan persepsi alumni tentang pernyataan PEO serta pencapaian PEO masing-masing. Skala Likert digunakan untuk mengukur persepsi alumni kerana ia mudah dianalisis dan kebarangkalian untuk berlaku kesilapan dalam menilai item-item juga adalah kecil. **INSTRUMEN KAJIAN MAJIKAN** Soal selidik ini terbahagi kepada 3 bahagian: i) Demografi ii) Kepentingan pernyataan PEO menurut majikan iii) Persepsi majikan terhadap pencapaian PEO alumni
Item Deskriptor/Indikator PEO	Item deskriptor/indikator bagi pernyataan PEO boleh dibangunkan dengan cara: i) Merujuk kepada MQF *Learning Outcome Domains* (LD). Rujuk Jadual 8. ii) Merujuk kepada MQF 2.0 *Clusters of Learning Outcomes.* Rujuk Jadual 9. iii) Institusi juga boleh membangunkan deskriptor/ indikator tersendiri bagi setiap pernyataan PEO sesebuah program. (Rujuk contoh instrumen Program Diploma Kewangan dan Perbankan Islam di Jadual 10).

Jadual 8
Rujukan Item Deskriptor/ Indikator Pernyataan PEO berdasarkan Learning Outcome Domains (LD) bagi Program di bawah Akreditasi MQA

No.	**Rujuan Item Indikator dan Deskriptor berdasarkan *Learning Outcome Domains* (LD)**	
	Indikator	**Deskriptor**
1.	*Knowledge* Pengetahuan	*Possess competency in fundamental discipline knowledge in-line with the industry needs* Memiliki kecekapan dalam pengetahuan disiplin asas selaras dengan keperluan industri
2.	*Practical Skills* Kemahiran Praktikal	*Technically competent in discipline area* Berkebolehan secara teknikal dalam bidang disiplin
3.	*Communication Skills* Kemahiran Berkomunikasi	*Show effective oral communication skills* *Show effective written communication skills* Menunjukkan kemahiran komunikasi lisan yang berkesan Menunjukkan kemahiran komunikasi bertulis yang berkesan
4.	*Critical Thinking* Pemikiran Kritikal	*Able to contribute ideas for organizational improvement* Mampu menyumbangkan idea untuk peningkatan organisasi
5.	*Problem-solving Skills* Kemahiran Menyelesaikan Masalah	*Able to solve problems in various situations, innovatively, creatively and ethically through a sustainable approach* Mampu menyelesaikan masalah dalam pelbagai situasi, secara inovatif, kreatif dan beretika melalui pendekatan lestari
6.	*Social Skills* Kemahiran Sosial	*Demonstrate essential social skills in the workplace.* Menunjukkan kemahiran sosial yang penting di tempat kerja.
7.	*Responsibilities* Tanggungjawab	*Show commitments in any given task* Tunjukkan komitmen dalam setiap tugas yang diberikan

8.	*Lifelong Learning* Pembelajaran Sepanjang Hayat	*Engage in lifelong learning to enable career advancement.* Terlibat dalam pembelajaran sepanjang hayat untuk membolehkan kemajuan kerjaya.
9.	*Information Management Skills* Kemahiran Pengurusan Maklumat	*Demonstrate ability to enhance information management skill in workplace* Menunjukkan keupayaan untuk meningkatkan kemahiran pengurusan maklumat di tempat kerja
10.	*Management Skills* Kemahiran Pengurusan	*Possess essential management skills while performing duties* Memiliki kemahiran pengurusan penting semasa menjalankan tugas
11.	*Entrepreneurial Skills* Kemahiran Keusahawanan	*Possess entrepreneurial skills* Memiliki kemahiran keusahawanan
12.	*Professionalism* Profesionalisme	*Behave professionally while performing duties* Berkelakuan profesional semasa menjalankan tugas
13.	*Ethics and Mora*l Etika dan Moral	*Practice good ethics and moral conducts* Amalkan etika dan tingkah laku moral yang baik
14.	Leadership Skills Kemahiran Kepimpinan	*Ability to function as a leader in a working group* Keupayaan untuk berfungsi sebagai pemimpin dalam kumpulan kerja
15.	Teamwork Skills Kemahiran Kerja Berpasukan	*Ability to function effectively as a member in a working group* Keupayaan untuk berfungsi dengan berkesan sebagai ahli dalam kumpulan kerja

Jadual 9

Rujukan Item dan Deskriptor Program Pengajian Peringkat Diploma (di bawah akreditasi MQA) berdasarkan Cluster MQF 2nd Edition (MQA, 2017)

BIL	***ITEM CLUSTER***	***DESCRIPTOR***
1.	*Cluster 1 Knowledge & Understanding*	*Demonstrate systematic comprehension (understanding) of a broad range of complex technical and theoretical knowledge and skills to undertake varied, complex, routine and non-routine tasks/ study within a field/discipline.*
2.	*Cluster 2 Cognitive Skills*	*Identify, interpret, apply and evaluate general concepts, theory and/or operational principles within a well-defined context of a subject/discipline.* *Work with minimal supervision.* *Solve problems of a common and well-defined kind as well as those others of a non-routine nature.*
3.	*Cluster 3 Functional Work Skills*	
	Cluster 3A Practical Skills	*Apply a limited range of practical skills, essential tools, methods, and procedures to perform required tasks/work.* *Reflect and make adjustments to practices and processes, as necessary, related to routine or non-routine tasks.*
	Cluster 3B Interpersonal Skills	*Interact effectively, individually or as member of a team with supervisors, peers and subordinates.*
	Cluster 3C Communication Skills	*Communicate clearly, both orally and in writing, ideas, information, problems and solutions, to others including peers, experts and nonexperts.* *Demonstrate a high level of proficiency in at least one other language besides the national language.*
	Cluster 3D Digital Skills	*Use a range of digital applications to support study/work as well as to seek and process data related to work or study.*
	Cluster 3E Numeracy Skills	*Demonstrate skills to use and interpret routine and complex numerical and graphical/visual data.*

	Cluster 3F Leadership, Autonomy and Responsibilities	*Perform work with significant degree of personal responsibility and autonomy under broad guidance and direction on well-defined and nonroutine study/work activities performed in a variety of contexts.* *Lead and manage diverse teams to manage issues at work.*
4.	*Cluster 4 Personal and Entrepreneurial Skills*	
	Cluster 4A Personal Skills	*Identify self-improvement initiatives and possibilities for further education. Develop realistic career and professional goals.* *Show interest in and participate at professional and civic activities leading to local and region wide communities building.*
	Cluster 4B Entrepreneurial Skill	*Explore and engage in activities relating to entrepreneurship.*
5.	*Cluster 5 Ethics and Professionalism*	*Demonstrate ability to understand and comply with organizational and professional ethics in the work environment. Demonstrate ability to apply sustainable practices in the context of local and global work and social environment.*

Jadual 10
Contoh Item dan Deskriptor yang dibangunkan sendiri

PEO 1: Pengetahuan dan kecekapan teknikal dalam bidang perbankan dan kewangan Islam dan dapat menyesuaikan diri dengan kemajuan dan cabaran teknologi baru dalam bidang perbankan dan kewangan Islam.

PEO 1: Knowledge and technically competent in Islamic banking and finance discipline and able to adapt themselves with new technological advancement and challenges in Islamic banking and finance fields.

BIL	**ITEM**	**DESKRIPTOR**
1.	Pengetahuan	Graduan mampu mencari dan mengaplikasi pengetahuan bidang perbankan kepada keadaan kompetitif yang berubah-ubah *Graduates are able to locate and apply banking knowledge to competitive conditions*

2.	Pengetahuan	Graduan mampu menguna pakai pengetahuan bidang perbankan dalam memberi perkhidmatan *Graduates are able to apply banking knowledge in rendering services.*
3.	Pengetahuan	Graduan mampu mengaplikasi pengetahuan bidang perbankan yang dipelajari dari pengalaman. *Graduates are able to apply banking knowledge to the field of banking learned from experience.*
4.	Pengetahuan	Graduan dapat memproses untuk memperoleh pengetahuan mengenai produk/perkhidmatan baru dalam industri kami. *Graduates are able to process for acquiring knowledge about new product/services within our industry.*
5.	Pengetahuan	Graduan mampu menyelesaikan tugasan yang diberi dalam bidang mereka. *Graduates are able to complete tasks given in their field.*
PEO 2: Berkesan dalam komunikasi dan dapat mempersiapkan mereka dengan kemahiran sosial, sifat kepemimpinan dan bersedia bertanggungjawab terhadap negara dan masyarakat yang sedang membangun. *PEO 2: Effective on communication and able to prepare them with social skills, leadership qualities and willing to be responsible towards developing country and community*		
1.	Kemahiran Berkomunikasi	Graduan mempunyai kemahiran komunikasi dan interaksi yang berkesan. *Graduates have effective communication and interaction skills.*
2.	Kemahiran Berkomunikasi	Graduan mempunyai kemahiran yang efektif dalam aktiviti berikut. (contoh, penulisan laporan/pembentangan/menjadi panel / penceramah untuk forum). *Graduates had effective skills in any of these activities. (eg. report writing/presentation/being a panel/ speaker for a forum).*
3.	Kemahiran Kerja Berpasukan	Graduan boleh bekerja secara berkumpulan di tempat kerja. *Graduates manage to work in a group or team at workplace.*

4.	Kemahiran Kepimpinan	Graduan mampu menunjukkan sifat kepimpinan yang tinggi dalam mengetuai tugasan yang diberikan di tempat kerja. *Graduates are able to demonstrate high leadership qualities in leading assigned tasks in the workplace.*
5.	Kemahiran Sosial	Graduan mampu menyesuaikan diri di dalam persekitaran pekerjaan. *Graduates are able to adapt in the work environment*.
PEO 3: Mampu menyelesaikan masalah perbankan dan kewangan Islam secara inovatif, kreatif dan beretika untuk melindungi organisasi daripada ancaman keselamatan dalaman dan luaran. *PEO 3: Capable to solve Islamic banking and finance problems innovatively,creatively and ethically to secure organizations against internal and external security threats*		
1.	Kemahiran menyelesaikan masalah	Graduan sedar akan ancaman dalaman dan luaran terhadap sektor/ organisasi perbankan Islam *Graduates aware with internal and external threats on Islamic banking sector/ organisation*
2.	Kemahiran menyelesaikan masalah	Graduan sedar dan akur akan prosedur keselamatan dan sekuriti data di dalam sektor perbankan *Graduates are aware of and adhere to data security and safety procedures in the banking sector.*
3.	Kemahiran menyelesaikan masalah	Graduan terlibat secara langsung dengan membuat keputusan dalam organisasi *Graduates are directly involved with decision making within organization*
4.	Kemahiran Pemikiran Kritikal	Graduan dapat mencipta seberapa banyak kemungkinan penyelesaian masalah *Graduates are able to create as many possible solutions to a problem*
5.	Kemahiran menyelesaikan masalah	Graduan dapat membandingkan setiap kemungkinan penyelesaian untuk mencari jalan penyelesaian yang terbaik *Graduates are able to compare each possible solution in order to find the best one*

6.	Kemahiran menyelesaikan masalah	Graduan dapat mengenalpasti penyelesaian bagi sesuatu masalah *Graduates can identify solutions to problems*
PEO 4: Mampu menunjukkan kemahiran keusahawanan dan menyedari keperluan pembelajaran sepanjang hayat untuk peningkatan kerjaya *PEO 4: Able to demonstrate entrepreneurship skills and recognize the need of lifelong learning for successful career advancement*		
1.	Keperluan Pembelajaran Sepanjang Hayat	Graduan suka menimba ilmu baru untuk kebaikannya sendiri *Graduates like to acquire new knowledge for its own good*
2.	Keperluan Pembelajaran Sepanjang Hayat	Graduan cuba mengaitkan pembelajaran akademik dengan isu/masalah praktikal *Graduates try to relate academic learning to practical issues/problems*
3.	Keperluan Pembelajaran Sepanjang Hayat	Graduan proaktif dalam menambah ilmu pengetahuan dan kemahiran untuk kemajuan kerjaya *Graduates proactively acquire new knowledge and skills for career advancement*
4.	Kemahiran Keusahawanan	Graduan memiliki minat, potensi dan kemahiran dalam keusahawanan *Graduates have interests, potential and skills in entrepreneurship*
5.	Kemahiran Keusahawanan	Graduan mempunyai peluang untuk mengenal pasti, meneroka dan mengembangkan peluang perniagaan dan pekerjaan *Graduates are interest to identify, explore and expand business and employment opportunities*

4.4. ETAC

4.4.1 Kaedah Penetapan KPI/ Sasaran PEO

Terdapat dua (2) kaedah yang boleh digunakan bagi penetapan KPI/ Sasaran PEO iaitu dengan menggunakan instrumen soal selidik atau melalui konsultasi dengan pemegang taruh program yang boleh dilaksanakan melalui Mesyuarat Jawatankuasa Penasihat Industri/ Program atau lain-lain mesyuarat yang berkaitan di peringkat institusi yang melibatkan pihak pemegang taruh.

i) Penetapan KPI/ sasaran PEO dengan menggunakan instrumen soal selidik
Untuk program baharu dan program sedia ada yang akan melalui proses akreditasi interim daripada badan akreditasi lain kepada ETAC dan telah mempunyai alumni, pihak institusi boleh melaksanakan kajian rintis ke atas alumni sedia ada dengan menggunakan instrumen penetapan KPI/ sasaran PEO seperti di Lampiran 3A. Dapatan daripada kajian tersebut boleh digunakan untuk menetapkan KPI/sasaran di peringkat program.

ii) Penetapan KPI/ sasaran PEO melalui konsultasi dengan pemegang taruh.
Penetapan KPI/ Sasaran PEO boleh dibuat dengan merujuk kepada data dan maklumat sedia ada di institusi seperti data pengesanan graduan, data latihan industri, Laporan *Industrial Advisory Panel* (IAP)/ Panel Penasihat Industri, lain-lain data dan maklumat yang berkaitan maklumbalas pemegang taruh. Melalui data dan maklumat tersebut, penetapan KPI/ sasaran PEO perlu dibuat di peringkat program dan institusi melalui Mesyuarat Jawatankuasa Penasihat Program atau Mesyuarat Jawatankuasa Penasihat Industri Program.

4.4.2 Instrumen Kajian Pencapaian PEO Alumni ETAC

Bagi Instrumen Kajian Pencapaian PEO ETAC bagi alumni, institusi boleh memilih sama ada menggunakan:

i. instrumen berbentuk *dichotomous* (rujuk Lampiran 3D)
   Contoh: PEO, indikator dan deskriptor bagi program di bawah bidang Kejuruteraan Elektrik yang dibangunkan oleh Penyelaras ETAC, BK adalah seperti di Jadual 11.
ii. instrumen berbentuk skala Likert (rujuk Lampiran 3F)
iii. kombinasi kedua-dua jenis instrumen (tertakluk kepada keputusan JK Pemegang Taruh Peringkat Institusi masing-masing).

Contoh Laporan Kajian Pencapaian PEO program ETAC yang menggunakan item *dichotomous* boleh dirujuk seperti di Lampiran 3E dan Laporan Kajian Pencapaian PEO bagi program ETAC yang menggunakan skala Likert adalah seperti di Lampiran 3G.

Jadual 11
Contoh PEO, Indikator dan Deskriptor bagi Program di bawah Bidang Kejuruteraan Elektrik

PEO	***Indicator***	***Description***	***Variable measured***	***Item Question***
PEO 1: Practicing technician in electrical engineering related field	*Technician in Electrical and Electronic field*	*Describes a technician who works in any industry with job function in electrical or electronic discipline.*	*Knowledge and Technical Skill* Pengetahuan dan Kemahiran Teknikal	**Adakah anda bekerja dalam bidang elektrik dan/atau elektronik? (Ya/Tidak)** *Are you working in a related technology field? (Yes/No)* Jika ya, pilih sektor bidangan dari senarai berikut: ● Kejuruteraan/Pembuatan ● Pendidikan ● Teknologi maklumat/pengkomputeran ● Jualan dan pemasaran ● Pengangkutan/logistik ● Pertahanan/ Keselamatan ● Perkhidmatan ● Latihan/ Konsultasi ● Lain-lain: _____ *If yes, select the sector below: (Drop down choices)* ● *Engineering/ Manufacturing* ● *Education* ● *Information Technology/Computing* ● *Sales and marketing* ● *Transportation/ Logistic*

				● *Defence/ Security* ● *Services* ● *Training/ Consultation* ● *Other: _____* *Jawatan permulaan* ● *Juruteknik* ● *Penolong Jurutera* ● *Penyelia* ● *Lain-lain: _____* *Starting position (Drop-down choices)* ● *Technician* ● *Assistant Engineer* ● *Supervisor* ● *Other: _____*
PEO2: Contributing to society with professional ethic and responsibilities	*Role of graduates*	*Describes the graduates involvement in community activities which includes engineering and non-engineering work related to society, health and safety. During the activities, graduate instill awareness of the safety and health culture and suggest solution pertaining to of environment and sustainability to the*	*Competency, Corporate Social Responsibility (CSR) & Ethics* Kompetensi, Tanggungjawab Sosial (CSR) & Etika	**Adakah anda ahli mana-mana badan profesional atau badan kawal selia/ badan bertauliah (Ya/Tidak)** **(contoh: BEM / IEEE / MySet / CIDB) *** *Are you a member of any professional body or regulatory body (Yes/No)* **Pernahkah anda mengamalkan keselamatan dan kesihatan di tempat kerja anda? (Ya/Tidak) (contoh:pakaian perlindungan keselamatan seperti but, topi, jaket keselamatan) *** *Have you ever practiced safety and health at*

		community. In performing the activities, the graduates adhere to professional ethic and responsibilities by following rules and regulation of the field.		*your workplace? (e.g: personal protective equipment (PPE) (Yes/No)* **Pernahkah anda terlibat dalam sebarang aktiviti komuniti? (contoh: AJK Surau /taman, NGO) * (Ya/Tidak)** *Have you ever been involved in any community activities? (e.g: Committee member of any residential area, NGOs) (Yes/No)* **Adakah anda pernah hadir sebarang kursus berkaitan automasi industri dan diberi persijilan * (Ya/Tidak)** *Hanya untuk graduan Program DJK *Have you attended any courses in technology and been certified? (Yes/No)*
PEO3: Engaging in enterprising activities that apply engineering knowledge and technical skills	*Enterprising Activities*	*Describes the **enterprising activities** which require effective **communication** and contribution as a **team member.*** *Enterprising activities involved business in engineering, research and development (R&D) and technical project.*	*Enterprising, Communication and Leadership* Keusahawanan, Komunikasi dan Kepimpinan	**Adakah anda terlibat dalam aktiviti penyelidikan atau pembangunan produk/perkhidmatan/sistem/projek teknikal? * (Ya/Tidak)** *Do you have any experience in any of these activities? (eg. report writing / presentation / being a panel / speaker for a forum / communication via email) (Yes/No)* **Adakah anda pernah bekerja dalam pasukan di tempat kerja/semasa melanjutkan pelajaran? * (Ya/Tidak)**

		Enterprising activities can be online or offline business. It also can be pursued either full time or part time basis		*Have you ever worked in group or team at your workplace/during your further studies? (Yes/No)* **Adakah anda pernah menjadi ketua semasa menjalankan tugas? (contoh: menerangkan tatacara kerja/ demo prosedur kerja/ memberi arahan kepada rakan sekerja) * (Ya/Tidak)** *Have you ever led a team or group at your workplace/during your further studies? (eg:demonstrate procedure / give instructions to colleague) (Yes/No)* **Adakah anda terlibat dalam sebarang perniagaan (termasuk atas talian/ sambilan)? * (Ya/Tidak)** *Are you involved in any form of business (including online/ part time/ full time)? (Yes/No)*
PEO4: Engaging in activities to enhance knowledge for successful career advancement	*Career Advance ment*	*Describes the future achievement of the graduates. The graduates have the opportunities to further their studies to a higher level such as advanced diploma, degree, master or PhD.*	*Career Advancement* Peningkatan Kerjaya	**Adakah anda terlibat dalam aktiviti penyelidikan atau pembangunan produk/perkhidmatan/sistem/projek teknikal?** *Have you ever been involved in the research or development of any products/services/system/technical project? (Yes/No)*

		Graduates can also upgrade their knowledge and adapt to new technologies by attaining professional certification. For career advancement criteria, the graduates are expected to hold senior positions such as senior technician, project manager, consultant and supervisor.		**Apakah pencapaian anda sehingga kini? *** Anda boleh memilih lebih dari satu jawapan Tandakan yang berkenaan ● Kenaikan gaji ● Perniagaan sendiri ● Kenaikan pangkat ● Melanjutkan pelajaran ● Sijil profesional ● Lain-lain: _____ *What is your achievement thus far? (Dropdown answer)* *Check all that apply.* ● Salary increment ● Own business ● Promoted to higher post ● Further studies ● Professional certification ● Other: _____ **Sehingga kini, adakah anda menyambung pengajian ke peringkat lebih tinggi daripada Diploma?** *Currently, are you furthering your study to a higher level than Diploma? (Yes/No)*

4.5. TTAC

Terdapat dua (2) kajian PEO yang perlu dilakukan oleh institusi iaitu:

i) Pertama: Kajian bagi menentukan KPI PEO program
ii) Kedua: Kajian bagi menilai pencapaian PEO Program

4.5.1 Kaedah Kajian bagi Penetapan KPI PEO Program

Peratus KPI ditetapkan berdasarkan perbincangan antara pihak institusi bersama pihak pemegang taruh (industri, majikan, komuniti, dan lain-lain). Terdapat dua (2) cadangan kaedah yang boleh digunakan bagi penetapan KPI PEO program iaitu:

i) Menggunakan instrumen soal selidik

Menggunakan instrumen soal selidik Penetapan KPI PEO Program yang dibangunkan oleh Penyelaras TTAC, BK seperti di Lampiran 3A.

ii) Melalui konsultasi dengan pemegang taruh

Penetapan KPI PEO dibuat dengan merujuk kepada data sedia ada alumni program di setiap institusi seperti data pengesanan graduan dan lain-lain data yang berkaitan.

Melalui data tersebut, penyelarasan KPI PEO akan dibuat di peringkat program dan institusi melalui Mesyuarat Jawatankuasa Penasihat Program/ Mesyuarat Jawatankuasa Penasihat Industri Program atau mesyuarat yang berkaitan di peringkat institusi yang melibatkan pemegang taruh program.

4.5.2 Instrumen Kajian PEO TTAC

Terdapat dua (2) cadangan instrumen yang boleh digunakan bagi menilai pencapaian PEO program di bawah akreditasi MBOT melalui TTAC iaitu instrumen yang menggunakan jenis soalan *dichotomous* atau instrumen yang menggunakan jenis soalan skala Likert.

i) Instrumen yang menggunakan jenis soalan *dichotomous* (*Yes/No*).

Instrumen kajian adalah seperti yang telah digunakan oleh program di bawah akreditasi ETAC bagi Unit Kejuruteraan Elektrikal (UKE). Ringkasan instrumen adalah di Jadual 12. Instrumen ini telah ditambahbaik berdasarkan kepada *Generic Graduate Attributes* (GA) TTAC (lihat Jadual 14) dan telah disemak oleh unit bidang yang mempunyai program di bawah akreditasi MBOT melalui TTAC.

Jadual 12
Jadual Ringkasan Instrumen PEO TTAC

Objektif kajian :	Menilai pencapaian PEO program
Pendekatan kajian :	Kuantitatif
Responden :	Alumni
Instrumen Kajian :	Rujuk Lampiran 4B. Soal selidik Terdapat tiga (3) bahagian di dalam soal selidik iaitu: i) Bahagian A: Demografi ii) Bahagian B: Keterangan Pekerjaan iii) Bahagian C: Persepsi Alumni Terhadap Pencapaian PEO Bahagian C mengandungi deskripsi PEO yang dibangunkan secara umum berdasarkan kepada ***Generic Graduates Attributes*** **(GA) TTAC** dan boleh digunakan oleh semua program di bawah akreditasi MBOT melalui TTAC (Rujuk Jadual 13). Jenis soalan *dichotomous* digunakan di atas justifikasi: i) Ia menilai satu sahaja item iaitu pencapaian PEO program. ii) Bentuk soalan jelas, mudah ringkas, tepat iii) Alumni lebih mudah memberi jawapan tahap pemahaman (mengambil contoh *pilot test* telah dibuat oleh program di bawah akreditasi ETAC: UKE) Analisa bagi menentukan pencapaian KPI lebih mudah untuk dibuat melalui jumlah bilangan/peratus.

Jadual 13 (TEMPLAT TTAC)
Jadual Generic Graduates Attributes (GA) TTAC

Generic Graduates Attributes (TTAC Manual m/s 12)	***Indicator / Variable measured***	***Description***	***Example Dichotomous Question***
1.Knowledge *2.Practical Skills and High Technology*	*Technician in related field of study*	*Describes a technician or any related job position or function in related field of study*	*1. Are you working in a related technology field? (Yes/No)* *2. If yes, select the sector below: (Drop down choices)* *3. Starting position (Dropdown choices)*
3.Analytical, Critical Thinking and Scientific Approach *4.Social Responsibility in Society and Technologist Community* *5.Ethics and Professionalism*	*Contributions to society*	*Describes the graduates' involvement in community activities which includes technology work related to society, health and safety. During the activities, graduates instill awareness of the safety and health culture and suggest solutions pertaining to the environment and sustainability to the community and technology community. In performing the activities, the graduates adhere to professional ethics and*	*1. Are you a member of any professional body or regulatory body (e.g: MBOT/BEM/ CIDB) (Yes/No)* *2. Have you ever practiced safety and health at your workplace? (e.g: personal protective equipment (PPE) (Yes/No)* *3. Have you ever been involved in any community activities? (e.g: Committee member of any residential area, NGOs) (Yes/No)*

		responsibilities by following rules and regulation in related field of study.	*4. Have you attended any courses in technology and been certified? (Yes/No)*
6. Technopreneurship and Management Skills *7.Communication skills* *8.Teamwork and Leadership (Technical Team)*	*Entrepreneur ship, communication and technical team skills*	*Describes the enterprising activities which require effective communication and contribution as a team member. Enterprising activities involved business in technology, research and development (R&D) and technical project. Enterprising activities can be online or offline business. It also can be pursued either full time or part time basis*	*1. Are you involved in any form of business (including online/ part time/ full time)? (Yes/No)* *2. Do you have any experience in any of these activities? (eg. report writing / presentation / being a panel / speaker for a forum / communication via email) (Yes/No)* *3. Have you ever worked in group or team at your workplace/during your further studies? (Yes/No)* *4. Have you ever led a team or group at your workplace/during your further studies? (eg:demonstrate procedure / give instructions to colleague) (Yes/No)* *5. Are you interested to get involve in technoperenerushiip/entrepreneurship? (Yes/No)* *6. If yes, what kind of business that you plan to join/develop? (Short answer)*

9.Lifelong Learning and Information Management	*Career Advancement*	*Describes the future achievement of the graduates. The graduates have the opportunities to further their studies to a higher level such as diploma, advanced diploma, degree, master or PhD. Graduates can also upgrade their knowledge and adapt to new technologies by attaining professional certification. For career advancement criteria, the graduates are expected to hold senior positions such as senior technician, project manager, consultant and supervisor.*	*1. Have you ever involved in the research or development of any products/services/system/technical project? (Yes/No)* *2. What is your achievement thus far? (Dropdown answer)* *3. Currently, are you furthering your study to a higher level than Diploma? (Yes/No)* *4. If yes, which institution are you currently studying at? (Open ended)* *5. Do you have any professional certification related to your study? (Yes/No)*

b) Instrumen yang menggunakan jenis soalan skala Likert

Objektif kajian :	Mengenalpasti tahap pencapaian *Programme Educational Objectives* (PEO) graduan setelah melebihi 3 tahun bergraduan.
Pendekatan kajian :	Kuantitatif
Responden :	Alumni
Instrumen Kajian :	Rujuk Lampiran 4D. Soal Selidik Terdapat tiga (3) bahagian di dalam soal selidik iaitu: i) Bahagian A: Demografi ii) Bahagian B: Keterangan Pekerjaan iii) Bahagian C: Persepsi Alumni Terhadap Pencapaian PEO Item deskriptor/indikator bagi pernyataan PEO boleh dibangunkan dengan cara: i) Merujuk kepada ***Generic Graduates Attributes*** **(GA) TTAC** ii) Institusi juga boleh membangunkan deskriptor/indikator yang tersendiri bagi menerangkan tentang PEO sesuatu program Jenis soalan skala Likert digunakan atas justifikasi: i) Menilai tahap pencapaian setiap hasil pembelajaran program ii) Menilai perbezaan di antara semester lulusan dan status bekerja dengan hasil pembelajaran program iii) Menilai perhubungan di antara hasil pembelajaran program.

Institusi atau program pengajian di bawah akreditasi TTAC boleh memilih cadangan-cadangan seperti di atas dalam penetapan KPI PEO program dan menilai pencapaian PEO program.

5.0 PELAPORAN KAJIAN PENCAPAIAN PEO

Laporan Kajian Pencapaian PEO yang terhasil adalah berdasarkan program-program yang ditawarkan di institusi masing-masing. Laporan Kajian Pencapaian PEO ini disediakan oleh institusi, disertakan bersama dokumen akreditasi mengikut keperluan berdasarkan Jadual 14 dan disimpan untuk tujuan lawatan/ semakan akreditasi. Laporan kajian ini juga boleh dimuatnaik ke platform Jawatankuasa Teknikal Pemegang Taruh JPPKK dan unit/bidang di Bahagian Kurikulum perlu melaksanakan tindakan penambahbaikan terhadap pernyataan PEO.

Berdasarkan kepada Laporan Kajian Pencapaian PEO ini juga, institusi perlu mengenalpasti tindakan penambahbaikan yang wajar dilaksanakan bagi memastikan hasil yang ditetapkan dapat dicapai oleh kumpulan pelajar kohort seterusnya. Tindakan penambahbaikan ini boleh merangkumi tindakan yang perlu dilaksanakan oleh institusi itu sendiri, atau tindakan yang memerlukan pengubahsuaian pernyataan PEO yang perlu diselaraskan oleh unit/bidang Bahagian Kurikulum. Perincian bagi pelaksanaan CQI ini boleh dirujuk kepada dokumen Panduan CQI yang diterbitkan oleh JPPKK di pautan berikut:
(https://mypolycc.edu.my/index.php/muat-turun/garis-panduan-c/bahagian-governan-dan-kecemerlangan/send/6-bgk/640-panduan-penambahbaikan-kualiti-berterusan-panduan-cqi)

Cadangan Format Laporan Institusi kepada Badan Akreditasi

FORMAT PELAPORAN KAJIAN

1.0 Pengenalan
2.0 Analisis Kajian
i. Demografi responden / Dapatan analisis deskriptif
ii. Dapatan analisis kuantitatif
3.0 Perbincangan / Dapatan
4.0 Kesimpulan
Cadangan penambahbaikan: Menerangkan penambahbaikan yang boleh dilaksanakan di peringkat:

i. Institusi: **(Perkara ini akan dijadikan sebagai ulasan institusi dalam dokumen akreditasi (MQA-04/SRR02/SAR02) sebagai satu dokumen untuk pembuktian)**

Contoh:
- bilangan responden boleh dipertingkatkan
- sasaran KPI dipertingkatkan (TTAC/ETAC)
- trend analisis data untuk buat penetapan %KPI (TTAC & ETAC)
- cadangan ubah instrumen (jika berkaitan)

ii. JPPKK:
Contoh: pernyataan PEO ditambahbaik

Cadangan Format Laporan Kajian bagi Penerbitan Artikel di Jurnal Akademik/Persidangan Akademik

FORMAT PELAPORAN KAJIAN

1.0 Latar belakang Kajian
2.0 Permasalahan Kajian
3.0 Limitasi Kajian
4.0 Metodologi Kajian
- 4.1 Kaedah kajian: Kajian kuantitatif
- 4.2 Instrumen kajian:
  a. Kuantitatif - soal selidik menggunakan likert scale
  b. Instrumen yang sama mengikut bidang dan badan akreditasi
- 4.3 Sampel Kajian
  - Kajian boleh mengguna pakai data alumni daripada gabungan kohort yang telah bergraduat daripada 3 hingga 5 tahun
  - Kaedah pengiraan bilangan sampel menggunakan Krejcie & Morgan (1970)
  - Soal selidik kepada bilang sampel sebagaimana Krejcie & Morgan (1970)
  - Sekiranya responden sukar dihubungi, maka dicadangkan kaedah *targeted snowball sampling* (Dusek et al., 2015).
  - Persampelan perlu dinyatakan sebagai sebahagian limitasi kajian
  - *Backup data* adalah analisis program yang sama dilaksanakan di seluruh Malaysia kecuali program tunggal yang ditawarkan hanya di sebuah institusi.
- 4.4 Analisis Kajian: Analisis Deskriptif

5.0 Analisis Kajian
- 5.1 Demografi responden
- 5.2 Dapatan analisis kuantitatif

6.0 Perbincangan / Dapatan
7.0 Kesimpulan

Jadual 14
Keperluan Pelaksanaan Kajian Pencapaian PEO berdasarkan Badan Akreditasi

BADAN AKREDITASI	JANGKA MASA	JENIS AKREDITASI
MQA	3 - 5 TAHUN SELEPAS BERGRADUAT	**MQA-01: Akreditasi Sementara (*Provisional Accreditation*) - tiada keperluan** **MQA-02: Akreditasi Penuh (*Full Accreditation*)** **1. GARIS PANDUAN AMALAN BAIK: REKA BENTUK DAN PENYAMPAIAN KURIKULUM** Semakan keseluruhan program diperlukan di akhir setiap kitaran menggunakan maklum balas daripada pihak berkepentingan dalaman dan luaran seperti industri, alumni, badan profesional dan pemeriksa luar. Kedua-dua proses pemantauan dan semakan hendaklah didokumenkan. Maklum balas dan tindakan yang diambil perlu dimaklumkan kepada staf, pelajar dan pihak berkepentingan untuk menggalakkan penglibatan dan hubungan baik. **2. COPPA 2** *Broad statements that describe the career and professional accomplishments that the programme is preparing graduates to achieve after they graduated*. *STANDARDS FOR AREA 1* *1.1 Statement of Educational Objectives of Academic Programme and Learning Outcomes* *1.1.3 The department must state its programme educational objectives, learning outcomes, learning and teaching strategies, and assessment methods, and ensure constructive alignment between them. (This standard must be read together with Standard 1.2.4 in Area 1.)* **3. GGP PENILAIAN PELAJAR 2013** PLO mesti sejajar dengan visi dan misi PPT. Bagi memastikan ini berlaku, matlamat program dan PEO perlu dibentuk. PEO memainkan peranan penting kerana ia membolehkan sumbangan graduan kepada masyarakat dan industri dinilai dalam tempoh lima tahun selepas menamatkan pengajian. Suatu penilaian yang sistematik diperlukan untuk menjajarkan PEO dan PLO dengan visi dan misi PPT. Pencapaian PEO dapat disokong menerusi graduan yang telah berjaya memenuhi pencapaian PLO dan mempunyai kecekapan apabila tamat sesuatu program.

		4. MANUAL PEMBANGUNAN KURIKULUM JPP 2013 Hasil Pembelajaran Pendidikan (PEO) Hasil yang dinilai atau diukur selepas tiga hingga lima tahun setelah pelajar bergraduat bagi sesuatu program. **MQA-03: *Self-Review Report* (SRR)** Hanya untuk badan berkanun, tidak terpakai bagi sistem pendidikan politeknik dan kolej komuniti **MQA-04: Audit Pematuhan Akreditasi Penuh** Pelaporan Dapatan Daripada Analisis Pencapaian PEO Tiada format pelaporan khas yang dinyatakan oleh MQA.
ETAC		**1. Jenis Akreditasi:** *i. Approval to Conduct (Provisional Accreditation)* *ii. New Programme Accreditation (Full Accreditation)* *iii. New Cycle Accreditation (Re-Accreditation After Completed 1 cycle period of accreditation (6 Years))* **2. Rujukan Standard Menyatakan Keperluan Analisa PEO:** i. Program Sarjana Muda *Engineering Technology Programme* *Accreditation Standard 2020 (Item 8.1)* ii. Program Diploma *Engineering Technician Programme* *Accreditation Standard 2020 (Item 8.1)* **3. Keperluan untuk menghantar Laporan Analisa PEO kepada Badan Akreditasi** Laporan Analisa PEO perlu dilaksanakan dan disediakan mengikut ketetapan iaitu penilaian dibuat selepas 3-5 tahun pelajar bergraduat. Laporan analisa PEO tersebut perlu dibincangkan di peringkat jabatan akademik dan institusi sebelum dihantar kepada Bahagian Kurikulum, JPPKK untuk simpanan dan tindakan penambahbaikan (jika perlu). Pihak ETAC tidak menetapkan sebarang proses kerja secara terperinci bagi sebelum, semasa dan selepas penyediaan Laporan Analisa PEO. Namun, Laporan Analisa PEO perlu disertakan semasa

		proses permohonan akreditasi *New Cycle Accreditation* iaitu selepas lengkap 1 kitaran lengkap akreditasi. **4. Format Laporan/ Kaedah/ Tatacara Terperinci yang ditetapkan oleh Badan Profesional** Pihak ETAC tidak menetapkan sebarang format / kaedah / tatacara yang terperinci terhadap laporan penilaian PEO. Namun, pihak ETAC menyatakan bahawa adalah satu keperluan untuk menetapkan sasaran (KPI) bagi setiap PEO dan proses penambahbaikan secara berterusan terhadap laporan analisa PEO perlu dilaksanakan. *(Close-the-loop process)*
MBOT		Manual Akreditasi 2019 TTAC, MBOT SRR-01: Akreditasi Sementara SRR-02: Akreditasi Penuh SRR-03: Akreditasi Penerusan SRR-04: Akreditasi Sambungan SRR-05: Akreditasi Penangguhan Dalam manual akreditasi TTAC 2019 ada dinyatakan dalam *Criteria 1: Programme Delivery and Design*, item 2, keperluan penetapan KPI setiap PEO dan proses penetapan tersebut perlu dibincangkan dan dipersetujui oleh pemegang taruh. Perkara ini perlu dibuktikan melalui laporan atau minit mesyuarat. Pelaporan analisa PEO berdasarkan dokumen kurikulum yang digunakan oleh pelajar semasa dinyatakan dalam *Criteria 7: Quality Management System Item 11(f) PEO Attainment.* Tiada format pelaporan khas yang dinyatakan oleh MBOT.

6.0 PENUTUP

Instrumen dan format pelaporan yang dinyatakan melalui garis panduan ini adalah bersifat cadangan dan boleh disesuaikan mengikut keperluan institusi masing-masing.

RUJUKAN

Abdullah, Shahrir & Norhamidi, Muhamad & Rahmat, Riza & Deros, Baba & Kofli, Noorhisham & Mardina, Abdullah & Mohd Tahir, Mazlan & Muchtar, Andanastuti. (2009). *Penilaian Objektif* Dan *Hasil Program Pendidikan Berasaskan Hasil (Obe): Soal Selidik Majikan Industri Dan Alumni*, ASEAN Journal of Teaching & Learning in Higher Education.

Abdullah, Shahrir & Norhamidi, Muhamad & Rahmat, Riza & Deros, Baba & Kofli, Noorhisham & Mardina, Abdullah & Mohd Tahir, Mazlan & Muchtar, Andanastuti. (2008). *Implementing Continual Review of Programme Educational Objectives and Outcomes for OBE Curriculum Based on Stakeholders' Input, Proceedings of the 7th WSEAS International Conference on EDUCATION and EDUCATIONAL TECHNOLOGY (EDU'08)*

Abd Rahman, J., Ab-Rahman, M. S., & Mohd Yusoff, A. R. (2016). *A Case Study of Programme Educational Objectives (PEOs) Assessment Requirements for the Electrical and Electronic Engineering Programme in Malaysian Public Universities.* Pertanika Journal Social Science & Humanities, 24, 251-268.

Bibi Norasiqin Sheikh Rahimullah, Wahidah Mansor, Mohd Fuad Latip, Hasmaini Mohamad, Syahrul Afzal Che Abdullah (2020), *Analysis of Graduates Performance Based on Programme Educational Objective Assessment for an Electrical Engineering Degree,* Asian Journal of University Education (AJUE), Volume 16, Number 3, December 2020, https://doi.org/ DOI 10.24191/ajue.v16i3.10224

Dusek, Gary & Yurova, Yuliya & Ruppel, Cynthia. (2015). Using Social Media and Targeted Snowball Sampling to Survey a Hard-to-reach Population: A Case Study. International Journal of Doctoral Studies.

Engineering Technology Accreditation Council (2019). *Engineering Technology Education Programme Accreditation Standard. Malaysia: Engineering Technology Accreditation Council, Board of Engineers.*

Engineering Technology Accreditation Council (2020). *Engineering Technician Education Programme Accreditation Standard. Malaysia: Engineering Technology Accreditation Council, Board of Engineers.*

Jodin Makinda et.al (2011), *Assessment of Program Educational Objectives using Alumni Survey: The UMS experience,* https://ieeexplore.ieee.org/document/6235351

Krejcie RV, Morgan DW. Determining Sample Size for Research Activities. Educational and Psychological Measurement. (1970), 30(3):607-610. doi:10.1177/001316447003000308

Malaysian Qualification Agency (2018). *Code of Practice for Programme Accreditation*. 2nd Edition. Malaysia: Malaysian Qualification Agency.

Malaysian Qualification Agency (2017). *Malaysian Qualification Framework (MQF). 2nd Edition.* Malaysia: Malaysian Qualification Agency.

Malaysia Standard Classification of Occupation (MASCO) link)https://news.mohr.gov.my/pdf/masco/MASCO_list_English_Version_as_at_Feb_2021.pdf

Nadia Hairi, Haryanti Mohd Affandi, Nurfaradilla Mohamad Nasri (2019), *Identifying Instruments to Measure Programme Educational Objectives* (PEO) *Achievement in Malaysia*, Universal Journal of Educational Research 7(9A): 135-146, 2019 http://www.hrpub.org, DOI: 10.13189/ujer.2019.071616

Noureddine Abbadeni, Ahmed Ghoneim, and Abdullah Alghamdi King Saud (2013), University, Volume 3, Issue 3, Riyadh, Kingdom of Saudi Arabia, July 2013

Noor Ezlin Ahmad Basri et al. (2011), An Evaluation of Programme Educational Objectives and Programme Outcomes for Civil Engineering Programmes,Procedia Social and Behavioral Sciences 18 (2011) 56–64 Elsevier, doi:10.1016/j.sbspro.2011.05.009

Nur Irfah Mohd Pauzi, Ir Zakaria Che Muda, Dr Rohayu Che Omar, Herda Yati Katman,(2013), *Implementation of Outcome Based Education in UNITEN-Closing the Loop (PEO),* http://tree.utm.my/wp-content/uploads/2013/03/Implementation-of-Outcome-Based-Education-in-UNITEN-Closing-the-Loop-PEO.pdf

Noor Ezlin Ahmad Basri, Kamaruddin Abu Taib, Othman Jaafar, Shahrom Md Zain, Fatihah Suja', Anuar Kasa, Siti Aminah Osman, N.E.Shanmugam, (2010), *An Evaluation of Programme Educational Objectives and Programme Outcomes for Civil Engineering Programmes,* Procedia Social and Behavioral Sciences 18 (2011) 56–64

Technology & Technical Accreditation Council (2019). *Technology & Technical Accreditation Manual* (TTAC) *2019. Malaysia: Malaysian Board of Technologists.*

Lampiran 1

Krejcie & Morgan in their 1970 article "Determining Sample Size for Research Activities" (*Educational and Psychological Measurement*, #30, pp. 607-610).

TABLE 1
Table for Determining Sample Size from a Given Population

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size.

Lampiran 2A

TEMPLAT INSTRUMEN PENILAIAN PEO PROGRAM MQA BAGI ALUMNI

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO) UNTUK ALUMNI NYATAKAN NAMA PROGRAM SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY FOR ALUMNI OF STATE THE NAME OF THE PROGRAMME FILL IN THE NAME OF THE INSTITUTION

***Templat ini disediakan dalam dwibahasa. Namun demikian, pengkaji boleh memilih untuk menggunakan sama ada Bahasa Melayu/ Bahasa Inggeris/ dwibahasa.**

Alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

To our respected polytechnic/community college alumni,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic And Community College Education.

Thank you.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 3 bahagian: i) demografi ii) kepentingan pernyataan PEO menurut alumni iii) persepsi alumni terhadap pencapaian PEO masing-masing. Data yang diperolehi dari soal selidik ini amat diperlukan untuk audit pematuhan MQA04.

1.0 INTRODUCTION

This survey has 3 parts:
i) demography ii) importance of PEO Statements according to alumni iii) perceived alumni achievement of PEO. The data obtained from this survey is essential for the MQA04 Compliance Audit.

2.0 OBJEKTIF KAJIAN

Untuk mendapatkan persepsi alumni tentang pengetahuan dan kemahiran yang diaplikasikan di tempat kerja berdasarkan pernyataan PEO

2.0 OBJECTIVE OF SURVEY

To obtain perceived alumni knowledge and skills applied in the workplace based on the PEO statements

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)

Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

BAHAGIAN I: DEMOGRAFI

1. Nama:
2. Emel
3. No. Telefon
4. Jantina:
    - Lelaki
    - Perempuan

5. Umur
    - 20-24
    - 25-29
    - 30-34
    - 35-39
    - 40-44
    - 45-49
    - 50 dan ke atas

6. Bangsa
   (Malay)(India)(Cina)(Lain-lain)

PART I: DEMOGRAPHY

1. Name
2. Email
3. Telephone Number:
4. Gender:
   Male/ Female
5. Age:
   (20-24) (25-29) (30-34) (35-39) (40-44) (45-49) (50 and above)
6. Race:
   (Malay)(India)(Cina)(Others)

MAKLUMAT PENGAJIAN ALUMNI DI (institusi)

7. Institusi Akademik (drop down - senarai institusi)
8. Nama Program
9. Tahun Tamat Pengajian (dropdown - 2014-2018)

ALUMNI'S EDUCATION INFORMATION

7. Academic Institution (drop down - list of institutions)
8. Program Name
9. Year of Graduation (dropdown - 2014-2018)

MAKLUMAT PEMBELAJARAN LANJUTAN ALUMNI

10. Pendidikan Lanjutan (kotak centang berbilang - Diploma, Ijazah Sarjana Muda, Ijazah Sarjana, PhD)
11. Institusi Akademik
12. Nama Program
13. Tahun Tamat Pengajian

ALUMNI'S FURTHER EDUCATION INFORMATION

10. Further Education (multiple tick box - Diploma, Bachelor Degree, Master Degree, PhD)
11. Academic Institution
12. Program Name
13. Year of graduation

INFORMASI PEKERJAAN

14. Status Bekerja
15. Sektor Bekerja Semasa (senarai turun - Kerajaan / Swasta / GLC / Bekerja Sendiri)
16. Nama Pekerjaan (merujuk MASCO)
17. Nama dan Alamat Syarikat
18. Jawatan
19. Gaji
    - RM1000 dan ke bawah
    - RM1001 - RM2000
    - RM2001 - RM3000
    - RM3001 - RM4000

- RM4001 - RM5000
- RM5001 dan ke atas

20. Nama, Emel dan Alamat Majikan untuk dihubungi

WORK INFORMATION

14 . Work status
15. Current Working Sector (drop down list - Government/ Non Gov/ GLC/ Self Employed)
16. Job Title (based on MASCO)
17. Company Name and Address
18. Position
19. Salary
- *RM1000 and below*
- *RM1001 - RM2000*
- *RM2001 - RM3000*
- *RM3001 - RM4000*
- *RM4001 - RM5000*
- *RM5001 and above*

20. *Name, Email dan Employer Address for contact*

BAHAGIAN 2: KEPENTINGAN PERNYATAAN PEO MENURUT ALUMNI

Sebagai alumni, sila nilaikan kepentingan pernyataan PEO bagi program tersebut mengikut skala berikut:

1 Tidak Penting
2 Kurang Penting
3 Sederhana Penting
4 Penting
5 Sangat Penting

PART 2: *IMPORTANCE OF PEO STATEMENTS ACCORDING TO ALUMNI*

As an alumni, please rate the importance of these PEO statements according to the following scale:

1 Not Important
2 Less Important
3 Moderately Important
4 Important
5 Very Important

Programme Educational Objectives **Senaraikan semua PEO program di baris di bawah** **List out all the Program's PEO in the row below**	***Kepentingan Penyataan/ Importance of Statement*** **1 2 3 4 5**
PEO 1 Isikan PEO Program	o *1* Tidak Penting/ *Not Important* o *2* Kurang Penting/ *Less Important* o *3* Sederhana Penting/ *Moderately Important* o *4* Penting/ *Important* o *5* Sangat Penting/ *Very Important*
PEO 2 Isikan PEO Program	o *1* Tidak Penting/ *Not Important* o *2* Kurang Penting/ *Less Important* o *3* Sederhana Penting/ *Moderately Important* o *4* Penting/ *Important* o *5* Sangat Penting/ *Very Important*
PEO 3 Isikan PEO Program	o *1* Tidak Penting/ *Not Important* o *2* Kurang Penting/ *Less Important* o *3* Sederhana Penting/ *Moderately Important* o *4* Penting/ *Important* o *5* Sangat Penting/ *Very Important*

BAHAGIAN 3: PERSEPSI ALUMNI TERHADAP PENCAPAIAN *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)
Merujuk kepada kerjaya sekarang, mohon nyatakan persepsi anda terhadap pencapaian PEO anda mengikut skala berikut: 1 Sangat Lemah 2 Lemah 3 Sederhana 4 Baik 5 Sangat Baik
PART 3: PERCEIVED ALUMNI ACHIEVEMENT OF PROGRAMME EDUCATIONAL OBJECTIVES (PEO)
With reference to your career now, please provide your perceived achievement of the following PEO, according to the following scale: *1 Very weak* *2 Weak* *3 Moderate* *4 Good* *5 Very Good*

Programme Educational Objectives (PEO)	**Pencapaian Alumni/ Alumni Achievement** **1 2 3 4 5**
PEO1: Isikan PEO Program	
Isikan indikator LD MQA/Cluster/Indikator PEO yang telah dibangunkan sendiri	o *1 Sangat Lemah/ Very weak* o *2 Lemah/ Weak* o *3 Sederhana/ Moderate* o *4 Baik/ Good* o *5 Sangat Baik/ Very Good*
Isikan indikator LD MQA/Cluster/Indikator PEO yang telah dibangunkan sendiri	o *1 Sangat Lemah/ Very weak* o *2 Lemah/ Weak* o *3 Sederhana/ Moderate* o *4 Baik/ Good* o *5 Sangat Baik/ Very Good*

Isikan indikator LD MQA/Cluster/Indikator PEO yang telah dibangunkan sendiri	o *1 Sangat Lemah/ Very weak* o *2 Lemah/ Weak* o *3 Sederhana/ Moderate* o *4 Baik/ Good* o *5 Sangat Baik/ Very Good*
PEO2: *Fill in the PEO*	
Fill in the LD MQA/Cluster/PEO Indicator constructed	o *1 Sangat Lemah/ Very weak* o *2 Lemah/ Weak* o *3 Sederhana/ Moderate* o *4 Baik/ Good* o *5 Sangat Baik/ Very Good*
Fill in the LD MQA/Cluster/PEO Indicator constructed	o *1 Sangat Lemah/ Very weak* o *2 Lemah/ Weak* o *3 Sederhana/ Moderate* o *4 Baik/ Good* o *5 Sangat Baik/ Very Good*
Fill in the LD MQA/Cluster/PEO Indicator constructed	o *1 Sangat Lemah/ Very weak* o *2 Lemah/ Weak* o *3 Sederhana/ Moderate* o *4 Baik/ Good* o *5 Sangat Baik/ Very Good*

Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah: *If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:*

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

Lampiran 2B

CONTOH INSTRUMEN PENILAIAN PEO PROGRAM MQA BAGI ALUMNI

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO) UNTUK ALUMNI NYATAKAN NAMA PROGRAM SILA ISIKAN NAMA INSTITUSI

Alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 3 bahagian: i) demografi ii) Kepentingan pernyataan PEO menurut alumni iii) persepsi alumni terhadap pencapaian PEO masing-masing. Data yang diperolehi dari soal selidik ini amat diperlukan untuk audit pematuhan MQA04.

2.0 OBJEKTIF KAJIAN

Untuk mendapatkan persepsi alumni tentang pengetahuan dan kemahiran yang diaplikasikan di tempat kerja berdasarkan pernyataan PEO

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)

Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

BAHAGIAN I: DEMOGRAFI

1. Nama: *
   _____
2. Email: *
   _____

3. No. Telefon: *

_____

4. Jantina: *
   - ◯ Lelaki
   - ◯ Perempuan

5. Umur: *
   - ◯ 20-24
   - ◯ 25-29
   - ◯ 30-34
   - ◯ 35-39
   - ◯ 40-44
   - ◯ 45-49
   - ◯ 50 dan ke atas

6. Bangsa: *
   - ◯ Malay
   - ◯ India
   - ◯ Cina
   - ◯ Lain-lain

MAKLUMAT PENGAJIAN ALUMNI DI INSTITUSI

7. Institusi Akademik:
   Tanda di satu oval sahaja

   - ◯ PTSS
   - ◯ POLIMAS
   - ◯ PTSB
   - ◯ PSP
   - ◯ PUO
   - ◯ PSAS
   - ◯ PSA
   - ◯ PSIS
   - ◯ PKB
   - ◯ PKT
   - ◯ PSMZA
   - ◯ POLISAS
   - ◯ PPD
   - ◯ PMM
   - ◯ PMK
   - ◯ PIS
   - ◯ PMJ
   - ◯ PMU
   - ◯ PKS
   - ◯ PKK

8. Nama Program:
Tanda di satu oval sahaja
- ◯ DEP
- ◯ DET
- ◯ DTK
- ◯ DJK
- ◯ DEE
- ◯ DEU
- ◯ DEO
- ◯ DEQ
- ◯ DEG

9. Tahun Tamat Pengajian
Tanda di satu oval sahaja
- ◯ 2018
- ◯ 2017
- ◯ 2016
- ◯ 2015
- ◯ 2014
- ◯ 2013

MAKLUMAT PEMBELAJARAN LANJUTAN ALUMNI

8. Pendidikan Lanjutan
- ◯ Ijazah Sarjana Muda
- ◯ Ijazah Sarjana,
- ◯ PhD

9. Institusi Akademik: _____
10. Nama Program:_____
11. Tahun Tamat Pengajian: _____

KETERANGAN PEKERJAAN

14. Status Bekerja *

Tanda di satu oval sahaja
- ◯ bekerja (contoh: bekerja di kilang/syarikat/organisasi.)
- ◯ bekerja sendiri (contoh: menjalankan perniagaan atas talian/berniaga)
- ◯ melanjutkan pelajaran
- ◯ tidak bekerja

15. Sektor Bekerja Semasa

Tanda di satu oval sahaja

- ◯ Kerajaan
- ◯ Swasta
- ◯ GLC
- ◯ Bekerja Sendiri

15. Nama Pekerjaan (merujuk MASCO):_____

16. Nama dan Alamat Syarikat:

……
……

17. Jawatan: _____

18. Gaji:

Tanda di satu oval sahaja

- ◯ RM1000 dan ke bawah
- ◯ RM1001 - RM2000
- ◯ RM2001 - RM3000
- ◯ RM3001 - RM4000
- ◯ RM4001 - RM5000
- ◯ RM5001 dan ke atas

19. Nama, Emel dan Alamat Majikan untuk dihubungi: ……..

……

BAHAGIAN 2: KEPENTINGAN PERNYATAAN PEO MENURUT ALUMNI
Sebagai alumni bagi nyatakan nama program pengajian, sila nilaikan kepentingan pernyataan PEO bagi program tersebut mengikut skala berikut: 1 Tidak Penting 2 Kurang Penting 3 Sederhana Penting 4 Penting 5 Sangat Penting

Programme Educational Objectives	**Kepentingan Penyataan** **1 2 3 4 5**
PEO 1 Menghasilkan tenaga kerja dan usahawan yang berpengetahuan dan berkemahiran selari dengan keperluan semasa dan hasrat Negara	o *1 Tidak Penting* o *2 Kurang Penting* o *3 Sederhana Penting* o *4 Penting* o *5 Sangat Penting*
PEO 2 Menunjukkan kebolehan penyelesaian masalah secara inovatif, kreatif dan kerja berpasukan melalui pendekatan pembelajaran sepanjang hayat	o *1 Tidak Penting* o *2 Kurang Penting* o *3 Sederhana Penting* o *4 Penting* o *5 Sangat Penting*
PEO 3 Mempunyai kemahiran berkomunikasi dengan berkesan, mengurus maklumat dengan baik dan bekerjasama dengan kumpulan berasaskan kerja serta tanggungjawab sosial.	o *1 Tidak Penting* o *2 Kurang Penting* o *3 Sederhana Penting* o *4 Penting* o *5 Sangat Penting*

BAHAGIAN 3: PERSEPSI ALUMNI TERHADAP PENCAPAIAN *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)
Sebagai alumni bagi nyatakan nama program pengajiani, dan merujuk kepada kerjaya sekarang, mohon nyatakan persepsi anda terhadap pencapaian PEO anda mengikut skala berikut: 1 Sangat Lemah 2 Lemah 3 Sederhana 4 Baik 5 Sangat Baik

Programme Educational Objectives (PEO)	**Pencapaian Alumni** **1 2 3 4 5**
PEO1: **Menghasilkan tenaga kerja dan usahawan yang berpengetahuan dan berkemahiran selari dengan keperluan semasa dan hasrat Negara**	
Memiliki kemahiran keusahawanan	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
Memiliki kecekapan dalam pengetahuan disiplin asas selaras dengan keperluan industri	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
Berkebolehan secara teknikal dalam bidang disiplin	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
PEO2: Menunjukkan kebolehan penyelesaian masalah secara inovatif, kreatif dan kerja berpasukan melalui pendekatan pembelajaran sepanjang hayat	
Mampu menyelesaikan masalah dalam pelbagai situasi, secara inovatif, kreatif dan beretika melalui pendekatan lestari	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
Keupayaan untuk bekerja dalam kumpulan dengan berkesan	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*

Terlibat dalam pembelajaran sepanjang hayat untuk membolehkan kemajuan kerjaya.	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
PEO3: Mempunyai kemahiran berkomunikasi dengan berkesan, mengurus maklumat dengan baik dan bekerjasama dengan kumpulan berasaskan kerja serta tanggungjawab sosial.	
Menunjukkan kemahiran komunikasi lisan yang berkesan Menunjukkan kemahiran komunikasi bertulis yang berkesan	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
Menunjukkan keupayaan untuk meningkatkan kemahiran pengurusan maklumat di tempat kerja	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
Menunjukkan kemahiran sosial yang penting di tempat kerja.	o *1 Sangat Lemah* o *2 Lemah* o *3 Sederhana* o *4 Baik* o *5 Sangat Baik*
Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah:	

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Lampiran 2C

TEMPLAT INSTRUMEN PENILAIAN PEO PROGRAM MQA BAGI MAJIKAN

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO) BAGI MAJIKAN ALUMNI NYATAKAN NAMA PROGRAM SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY FOR ALUMNI EMPLOYER OF STATE THE NAME OF THE PROGRAMME FILL IN THE NAME OF THE INSTITUTION

***Templat ini disediakan dalam dwibahasa. Namun demikian, pengkaji boleh memilih untuk menggunakan sama ada Bahasa Melayu/ Bahasa Inggeris/ dwibahasa.**

Majikan alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

To our respected polytechnic/community college alumni employer,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic And Community College Education.

Thank you.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 3 bahagian: i) demografi ii) kepentingan pernyataan PEO menurut majikan iii) persepsi majikan terhadap pencapaian PEO alumni. Data yang diperolehi dari soal selidik ini amat diperlukan untuk audit pematuhan MQA04 program.

1.0 INTRODUCTION

This survey has 3 parts: i) demography ii) importance of PEO statements according to employers iii) employers' perception of alumni PEO achievement. The data obtained from this survey is essential for the MQA04 Compliance Audit of the programmes.

2.0 OBJEKTIF KAJIAN

Kajian ini dijalankan untuk mendapatkan persepsi majikan tentang pengetahuan dan kemahiran alumni politeknik yang diaplikasikan oleh mereka di tempat kerja berdasarkan pernyataan PEO program yang pernah mereka ambil.

2.0 OBJECTIVE OF SURVEY

To obtain employers' perception of alumni's knowledge and skills applied at the workplace based on the PEO statements of the programmes undertaken by them previously.

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)
Ini adalah pernyataan leas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para alumni, 3 - 5 tahun selepas tamat pengajian.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the alumni should achieve, within 3 - 5 years of graduation.

BAHAGIAN I
DEMOGRAFI
1. Nama Majikan
2. Email
3. No. Telefon
4. Jantina:
   - Lelaki
   - Perempuan

PART I
DEMOGRAPHY
1. Name
2. Email
3. Phone No.:
4. Gender
   - Male
   - Female

KETERANGAN PEKERJAAN MAJIKAN

5. Sektor Bekerja Semasa (senarai turun - Kerajaan / Swasta / GLC / Bekerja Sendiri)
6. Jawatan
7. Nama dan Alamat Syarikat

WORK INFORMATION

5. Current Working Sector (drop down list - Government/ Non Gov/ GLC/ Self Employed)
6. Job Position
7. Company Name and Address

BAHAGIAN 2: KEPENTINGAN PERNYATAAN PEO MENURUT MAJIKAN

Sebagai majikan alumni nyatakan nama program, sila nilaikan pernyataan PEO bagi program tersebut mengikut skala berikut:

1 Tidak Penting
2 Kurang Penting
3 Sederhana Penting
4 Penting
5 Sangat Penting

PART 2: *IMPORTANCE OF PEO STATEMENTS ACCORDING TO EMPLOYER*

As an employer for the alumni of the fill in the name of the programme, please rate these PEO statements according to the following scale:

1 Not Important
2 Less Important
3 Moderately Important
4 Important
5 Very Important

Programme Educational Objectives **Senaraikan semua PEO program di baris di bawah** **List out all the Program's PEO in the row below**	**Kepentingan Pernyataan/ Importance of Statement** **1 2 3 4 5**

PEO 1 Isikan PEO Program	o 1 Tidak Penting o 2 Kurang Penting o 3 Sederhana Penting o 4 Penting o 5 Sangat Penting
PEO 2 Isikan PEO Program	o 1 Not Important o 2 Less Important o 3 Moderately Important o 4 Important o 5 Very Important

BAHAGIAN 3: PERSEPSI MAJIKAN ALUMNI TERHADAP PENCAPAIAN *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)
Sebagai majikan, mohon nyatakan persepsi anda terhadap pencapaian alumni nama program pengajian mengikut skala berikut: 1 Sangat Lemah 2 Lemah 3 Sederhana 4 Baik 5 Sangat Baik
PART 3: EMPLOYER'S PERCEPTION OF ALUMNI'S PROGRAMME EDUCATIONAL OBJECTIVES (PEO) ACHIEVEMENT
As an employer, please provide your perceived achievement of the alumni name of programme, according to the following scale: *1 Very Weak* *2 Weak* *3 Moderate* *4 Good* *5 Very Good*

Programme Educational Objectives (PEO)	**Pencapaian Alumni/ *Alumni Achievement* 1 2 3 4 5**
PEO1: Isikan PEO Program	

Isikan indikator LD MQA/Cluster/Indikator PEO yang telah dibangunkan sendiri	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
PEO1: *Fill in the PEO*	
Fill in the LD MQA/Cluster/PEO Indicator constructed	o 1 Very Weak o 2 Weak o 3 Moderate o 4 Good o 5 Very Good
Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah: *If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:*	

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

Lampiran 2D

CONTOH INSTRUMEN PENILAIAN PEO PROGRAM MQA BAGI MAJIKAN

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO) BAGI MAJIKAN ALUMNI NYATAKAN NAMA PROGRAM SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY FOR ALUMNI EMPLOYER OF STATE THE NAME OF THE PROGRAMME FILL IN THE NAME OF THE INSTITUTION

Majikan alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 3 bahagian: i) demografi ii) kepentingan pernyataan PEO menurut majikan iii) persepsi majikan terhadap pencapaian PEO alumni. Data yang diperolehi dari soal selidik ini amat diperlukan untuk audit pematuhan MQA04 program.

2.0 OBJEKTIF KAJIAN

Kajian ini dijalankan untuk mendapatkan persepsi majikan tentang pengetahuan dan kemahiran alumni politeknik yang diaplikasikan oleh mereka di tempat kerja berdasarkan pernyataan PEO program yang pernah mereka ambil di nyatakan nama institusi.

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)

Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

BAHAGIAN I: DEMOGRAFI

1. Nama Majikan: *_____
2. Email: *_____
3. No. Telefon: *_____
4. Jantina: *
   - ◯ Lelaki
   - ◯ Perempuan

KETERANGAN PEKERJAAN

5. Sektor Bekerja Semasa
   Tanda di satu oval sahaja
   - ◯ Kerajaan
   - ◯ Swasta
   - ◯ GLC
   - ◯ Bekerja Sendiri
6. Jawatan: _____
7. Nama dan Alamat Syarikat:
   _____
   _____

BAHAGIAN 2: KEPENTINGAN PERNYATAAN PEO MENURUT MAJIKAN

Sebagai majikan alumni bagi nyatakan nama program, sila nilaikan pernyataan PEO bagi program tersebut mengikut skala berikut:

1 Tidak Penting
2 Kurang Penting
3 Sederhana Penting
4 Penting
5 Sangat Penting

OBJEKTIF PENDIDIKAN PROGRAM / *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)	**Kepentingan Pernyataan** **1 2 3 4 5**
PEO 1 Menghasilkan tenaga kerja dan usahawan yang berpengetahuan dan berkemahiran selari dengan keperluan semasa dan hasrat Negara	○ 1 Tidak Penting ○ 2 Kurang Penting ○ 3 Sederhana Penting ○ 4 Penting ○ 5 Sangat Penting

PEO 2 Menunjukkan kebolehan penyelesaian masalah secara inovatif, kreatif dan kerja berpasukan melalui pendekatan pembelajaran sepanjang hayat	○ 1 Tidak Penting ○ 2 Kurang Penting ○ 3 Sederhana Penting ○ 4 Penting ○ 5 Sangat Penting
PEO 3 Mempunyai kemahiran berkomunikasi dengan berkesan, mengurus maklumat dengan baik dan bekerjasama dengan kumpulan berasaskan kerja serta tanggungjawab sosial.	○ 1 Tidak Penting ○ 2 Kurang Penting ○ 3 Sederhana Penting ○ 4 Penting ○ 5 Sangat Penting

BAHAGIAN 3: PERSEPSI MAJIKAN ALUMNI TERHADAP PENCAPAIAN *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)

Sebagai majikan alumni bagi nyatakan nama program pengajian kolej komuniti, dan merujuk kepada kerjaya sekarang, mohon nyatakan persepsi anda terhadap pencapaian alumni nyatakan nama program pengajian kolej komuniti mengikut skala berikut:

1 Sangat Lemah
2 Lemah
3 Sederhana
4 Baik
5 Sangat Baik

OBJEKTIF PENDIDIKAN PROGRAM / *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)	**Pencapaian Alumni** **1 2 3 4 5**
PEO1: Menghasilkan tenaga kerja dan usahawan yang berpengetahuan dan berkemahiran selari dengan keperluan semasa dan hasrat Negara	
Memiliki kemahiran keusahawanan	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
Memiliki kecekapan dalam pengetahuan disiplin asas selaras dengan keperluan industri	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
Berkebolehan secara teknikal dalam bidang disiplin	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik

PEO2: Menunjukkan kebolehan penyelesaian masalah secara inovatif, kreatif dan kerja berpasukan melalui pendekatan pembelajaran sepanjang hayat	
Mampu menyelesaikan masalah dalam pelbagai situasi, secara inovatif, kreatif dan beretika melalui pendekatan lestari	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
Keupayaan untuk bekerja dalam kumpulan dengan berkesan	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
Terlibat dalam pembelajaran sepanjang hayat untuk membolehkan kemajuan kerjaya.	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
PEO3: Mempunyai kemahiran berkomunikasi dengan berkesan, mengurus maklumat dengan baik dan bekerjasama dengan kumpulan berasaskan kerja serta tanggungjawab sosial.	
Menunjukkan kemahiran komunikasi lisan yang berkesan Menunjukkan kemahiran komunikasi bertulis yang berkesan	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
Menunjukkan keupayaan untuk meningkatkan kemahiran pengurusan maklumat di tempat kerja	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
Menunjukkan kemahiran sosial yang penting di tempat kerja.	o 1 Sangat Lemah o 2 Lemah o 3 Sederhana o 4 Baik o 5 Sangat Baik
Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah:	

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

Lampiran 2E

LAPORAN KAJIAN PENCAPAIAN
***PROGRAMME EDUCATONAL OBJECTIVES* (PEO)**
NYATAKAN NAMA PROGRAM
SILA ISIKAN NAMA INSTITUSI

1.0 PENGENALAN

Bahagian ini memfokuskan kepada analisa pencapaian keseluruhan kajian PEO yang melibatkan perbincangan tentang profil demografi responden dan dapatan daripada analisis deskriptif.

Kajian Pencapaian PEO ini dilaksanakan berdasarkan PEO bagi program XXXX seperti berikut:

PEO 1: Pengetahuan dan kecekapan teknikal dalam bidang perbankan dan kewangan Islam dan dapat menyesuaikan diri dengan kemajuan dan cabaran teknologi baru dalam bidang perbankan dan kewangan Islam.
PEO 1: *Knowledge and technically competent in Islamic banking and finance discipline and able to adapt themselves with new technological advancement and challenges in Islamic banking and finance fields.*

PEO 2: Berkesan dalam komunikasi dan dapat mempersiapkan mereka dengan kemahiran sosial, sifat kepemimpinan dan bersedia bertanggungjawab terhadap negara dan masyarakat yang sedang membangun.
PEO 2: *Effective on communication and able to prepares them with social skills, leadership qualities and willing to be responsible towards developing country and community.*

PEO 3: Mampu menyelesaikan masalah perbankan dan kewangan Islam secara inovatif, kreatif dan beretika untuk melindungi organisasi daripada ancaman keselamatan dalaman dan luaran.
PEO 3: *Capable to solve Islamic banking and finance problems innovatively, creatively and ethically to secure organizations against internal and external security threats.*

PEO 4: Mampu menunjukkan kemahiran keusahawanan dan menyedari keperluan pembelajaran sepanjang hayat untuk peningkatan kerjaya.
PEO 4: *Able to demonstrate entrepreneurship skills and recognize the need of lifelong learning for successful career advancement.*

2.0 ANALISIS KAJIAN

i. DEMOGRAFI RESPONDEN

Maklumat demografi akan dibahagikan kepada maklumat alumni dan majikan. Maklumat demografi alumni merangkumi tahun tamat pengajian, status pekerjaan, adakah alumni bekerja dalam bidang, pendapatan tahunan, pengalaman bekerja, jenis syarikat, jenis sektor, bilangan staf dan julat pendapatan bulanan. Maklumat ini diringkaskan di dalam Jadual 1 di bawah. Seramai 262 orang alumni telah menjawab kajiselidik yang telah dibangunkan dan majoriti alumni telah menamatkan pengajian pada tahun 2017. Dapatan kajian jua menunjukkan hanya seorang alumniyang masih tidak bekerja, manakala 255 alumni telahpun bekerja. Selain itu, 182 alumni memperoleh pendapatan tahunan kurang dari RM20,000. Kajian ini juga mendapati rata-rata alumni, iaitu diwakili oleh 220 orang alumni bekerja di sektor swasta.

Jadual 1 Taburan Demografi Alumni

Perkara	Bilangan	Peratus
Tahun Tamat Pengajian		
• 2014	37	14.1
• 2015	38	14.5
• 2016	61	23.3
• 2017	72	27.5
• 2018	54	20.6
• **Jumlah**	**262**	**100.0**
Status Pekerjaan		
• Bekerja	255	97.3
• Menyambung Pengajian	6	2.3
• Tidak Bekerja	1	0.4
• **Jumlah**	**262**	**100.0**
Adakah Anda Bekerja dalam Bidang?		
• Ya	120	45.8
• Tidak	142	54.2
• **Jumlah**	**262**	**100.0**

Pendapatan Tahunan		
• Kurang dari RM20,000	182	69.5
• RM20,000 ke RM35,000	68	26.0
• RM35,000 ke RM50,000	10	3.8
• *Missing*	2	0.8
• **Jumlah**	**262**	**100.0**
Pengalaman Bekerja		
• Kurang dari setahun	55	21.0
• 1 hingga 3 tahun	144	55.0
• Lebih dari 3 tahun	63	24.0
• **Jumlah**	**262**	**100.0**
Jenis Syarikat		
• Sektor Kerajaan	31	11.8
• Sektor Swasta	220	84.0
• Bekerja Sendiri	11	4.2
• **Jumlah**	**262**	**100.0**
Jenis Sektor		
• Perbankan	8	3.1
• Kewangan Islam	5	1.9
• Takaful	12	4.6
• Pelaburan / Unit Amanah	6	2.3
• Perakaunan	14	5.3
• Lain-lain	217	82.8
• **Jumlah**	**262**	**100.0**
Bilangan Staf		
• Kurang dari 5 pekerja	36	13.7
• 5 hingga 19 pekerja	98	37.4
• 20 hingga 50 pekerja	73	27.9
• 51 hingga 150 pekerja	29	11.1
• 151 hingga 500 pekerja	9	3.4
• Lebih dari 500 pekerja	17	6.5
• **Jumlah**	**262**	**100.0**
Julat Pendapatan Bulanan		
• Kurang dari RM2000	144	55.0
• RM2001 hingga RM3000	102	38.9
• Lebih dari RM3000	16	6.1
• **Jumlah**	**262**	**100.0**

Maklumat demografi majikan dalam Jadual 2 merangkumi jenis syarikat, jenis sektor dan bilangan staf. Seramai 250 responden dalam kalangan majikan telah menjawab kajiselidik ini. Kebanyakan majikan beroperasi dalam sektor pelbagai, yang mewakili 209 majikan. 113 majikan mempunyai bilangan pekerja 5 hingga 19 orang, manakala bilangan terendah menunjukkan majikan yang mempunyai bilangan staf antara 151 hingga 500 orang pekerja, iaitu 6 majikan.

Jadual 2 Taburan Demografi Majikan

Perkara	Bilangan	Peratus
Jenis Syarikat		
• Sektor Kerajaan	32	12.8
• Sektor Swasta	218	87.2
• **Jumlah**	**250**	**100.0**
Jenis Sektor		
• Perbankan	7	2.8
• Kewangan Islam	6	2.4
• Takaful	12	4.8
• Pelaburan / Unit Amanah	6	2.4
• Perakaunan	10	4.0
• Lain-lain	209	83.6
• **Jumlah**	**250**	**100.0**
Bilangan Staf		
• Kurang dari 5 pekerja	20	8.0
• 5 hingga 19 pekerja	113	45.2
• 20 hingga 50 pekerja	81	32.4
• 51 hingga 150 pekerja	20	8.0
• 151 hingga 500 pekerja	6	2.4
• Lebih dari 500 pekerja	10	4.0
• **Jumlah**	**250**	**100.0**
Julat Pendapatan Bulanan		
• Kurang dari RM2,000	102	40.8
• RM2,001 ke RM3,000	115	46.0
• Lebih dari RM3,000	33	13.2
• **Jumlah**	**250**	**100.0**

ii. DAPATAN ANALISIS KUANTITATIF DAN PERBINCANGAN

Dapatan Analisis Deskriptif

Data-data yang diperoleh dari kajiselidik telah dianalisa dan interpretasi skor min dapatan analisa ditafsir berdasarkan Jadual 3. Jadual ini menerangkan secara keseluruhan corak data yang diperoleh daripada kajiselidik yang telah dikeluarkan. Selain itu, analisa kajian ini dibuat berdasarkan item-item yang dibangunkan bagi empat *Programme Educational Objective (PEO).*

Jadual 3 Interpretasi Skor Min

Skor Min	Interpretasi Skor Min
1.00 – 2.33	Rendah
2.34 – 3.66	Sederhana
3.67 – 5.00	Tinggi

Jadual 4 Skor Min PEO 1

No.	Item	Min	
		Alumni	Majikan
1.	Graduan mampu mencari dan mengaplikasi pengetahuan bidang perbankan kepada keadaan kompetatif yang berubah-ubah.	4.34	4.48
2.	Graduan mampu menggunapakai pengetahuan bidang perbankan dalam memberi perkhidmatan.	4.28	4.44
3.	Graduan mampu mengaplikasi pengetahuan bidang perbankan yang dipelajari dari pengalaman.	4.27	4.48
4.	Graduan dapat memproses untuk memperoleh pengetahuan mengenai produk/perkhidmatan baru dalam industri kami.	4.35	4.47
5.	Graduan mampu menyelesaikan tugasan yang diberi dalam bidang mereka.	4.41	4.53
	Purata Min	**4.33**	**4.48**

Jadual 4 menunjukkan skor min PEO1 bagi alumni dan majikan. Berdasarkan jadual ini, kedua-dua pihak alumni dan majikan secara keseluruhannya menunjukkan skor min tinggi bagi PEO 1 pada nilai min 4.33 dan 4.48. Kesemua item juga menunjukkan nilai skor min tinggi bagi kedua-dua alumni dan majikan. Item 5 menunjukkan skor min tertinggi bagi alumni dan majikan. Sebaliknya item 3 mencatatkan nilai skor min terendah bagi alumni pada nilai 4.27 dan item 2 menunjukkan nilai terendah bagi majikan pada nilai 4.44.

Jadual 5 Skor Min PEO 2

No.	Item	Min	
		Alumni	Majikan
1.	Graduan mempunyai kemahiran komunikasi lisan yang berkesan.	4.53	4.46
2.	Graduan mempunyai pengalaman yang efektif dalam aktiviti berikut. (contoh: penulisan laporan / pembentangan / menjadi panel / penceramah untuk forum).	4.36	4.43
3.	Graduan boleh bekerja dalam kumpulan atau pasukan di tempat kerja.	4.58	4.53
4.	Graduan mampu mengetuai kumpulan atau pasukan di tempat kerja.	4.46	4.48
	Purata Min	**4.48**	**4.48**

Jadual 5 menunjukkan skor min bagi PEO 2. Purata min bagi kedua-dua alumni dan majikan menunjukkan skor min tinggi pada nilai yang sama, iaitu 4.48. Item 3 menunjukkan nilai min paling tinggi bagi alumni dan majikan pada nilai masing-masing 4.58 dan 4.53. Manakala item 2 menunjukkan nilai min terendah iaitu masing-masing pada nilai 4.36 bagi alumni dan 4.43 bagi majikan.

Jadual 6 Skor Min PEO 3

No.	Item	Min	
		Alumni	Majikan
1.	Graduan sedar akan ancaman dalaman dan luaran terhadap sektor/organisasi perbankan Islam.	4.37	4.42
2.	Graduan terlibat secara langsung dengan membuat keputusan dalam organisasi.	4.22	4.44
3.	Graduan dapat mencipta seberapa banyak kemungkinan penyelesaian masalah.	4.32	4.46
4.	Graduan dapat membandingkan setiap kemungkinan penyelesaian untuk mencari jalan penyelesaian yang terbaik.	4.34	4.48
5.	Graduan dapat menilai penyelesaian bagi sesuatu masalah.	4.40	4.50
	Purata Min	**4.33**	**4.46**

Jadual 6 menunjukkan nilai skor min bagi PEO 3. Purata min bagi alumni dan majikan masing- masing pada 4.33 dan 4.46, iaitu pada nilai yang tinggi. Item 5 menunjukkan nilai skor min tertinggi bagi kedua-dua alumni dan majikan pada 4.40 dan 4.50. Item 2 pula mencatatkan skor min terendah bagi alumni, manakala item 1 mencatatkan skor min terendah bagi majikan.

Jadual 7 Skor Min PEO 4

No.	Item	Min	
		Alumni	Majikan
1.	Graduan suka belajar untuk kebaikannya.	4.55	4.56
2.	Graduan cuba mengaitkan pembelajaran akademik dengan isu/masalah praktikal.	4.56	4.52
3.	Graduan proaktif dalam menambah ilmu pengetahuan dan kemahiran untuk kemajuan kerjaya.	4.53	4.53
4.	Graduan memiliki potensi dan kemahiran dalam keusahawanan.	4.46	4.49
5.	Graduan mempunyai kepentingan untuk mengenalpasti, meneroka dan mengembangkan peluang perniagaan dan pekerjaan.	4.53	4.54
	Purata Min	**4.53**	**4.53**

Merujuk kepada Jadual 7, secara keseluruhannya purata min alumni dan majikan bagi PEO 4 adalah tinggi, masing-masing pada 4.53. Item 2 menunjukkan skor min tertinggi bagi alumni pada nilai 4.56. Manakala item 1 pula menunjukkan skor min tertinggi bagi majikan pada nilai 4.56. Item 4 pula menunjukkan nilai skor terendah bagi kedua-dua alumni dan majikan, masing-masing pada nilai 4.46 dan 4.49.

3.0 KESIMPULAN

Dapatan data kajian pengukuran pencapaian PEO program pengajian di politeknik/kolej komuniti menunjukkan kesemua objektif kajian tercapai dengan tahap pencapaian pengukuran pencapaian objektif program (PEO) adalah tinggi. Justeru, hal ini menunjukkan bahawa Bahagian Kurikulum, JPPKK dan politeknik/kolej komuniti telah memberi penekanan utama dalam keseimbangan penerapan dan penilaian aspek-aspek kemahiran dan kurikulum dalam menawarkan perkhidmatan pendidikan tinggi kepada para graduan program XXXX. Lantaran itu, dapat dilihat bahawa dapatan data kajian ini amat penting kerana graduan merupakan salah satu pihak berkepentingan (*stakeholder*) yang berhak memperoleh pengetahuan, kemahiran teknikal dan kemahiran insaniah yang merupakan nilai tambah kepada seseorang pelajar semasa melanjutkan pengajian di politeknik/kolej komuniti.

Lampiran 3A

TEMPLAT INSTRUMEN PENETAPAN KPI PEO TTAC & ETAC BAGI MAJIKAN (SKALA LIKERT)

SOAL-SELIDIK PENGESAHAN DAN PENETAPAN PERATUS (%) KPI OBJEKTIF PEMBELAJARAN PROGRAM (PEO)

NYATAKAN NAMA PROGRAM
SILA ISIKAN NAMA INSTITUSI

VERIFICATION OF PROGRAMME EDUCATIONAL OBJECTIVE (PEO) AND KPI PERCENTAGE (%) SETTING FOR PEO SURVEY

STATE THE NAME OF THE PROGRAMME
FILL IN THE NAME OF THE INSTITUTION

*Templat ini disediakan dalam dwibahasa. Namun demikian, pengkaji boleh memilih untuk menggunakan sama ada Bahasa Melayu/ Bahasa Inggeris/ dwibahasa.

Tuan/puan yang dihormati,

Terima kasih kami ucapkan atas penyertaan tuan/puan dalam kaji selidik ini yang bertujuan untuk menetapkan peratus KPI PEO bagi program pengajian politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).
Sekian, terima kasih.

Ladies and gentleman,

We are grateful for your participation in this survey which is conducted to determine percentage of PEO's KPI for programmes in polytechnic/community college.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic and Community College Education.
Thank you.

1.0 PENGENALAN
Soal selidik ini terbahagi kepada 3 bahagian:
A) demografi B) verifikasi dan penetapan PEO C) lain-lain.

1.0 INTRODUCTION
This survey has 3 parts:
A) demography B) verification of PEO and KPI setting for PEO C) others.

2.0 OBJEKTIF KAJIAN
Untuk mendapatkan pengesahan terhadap pernyataan PEO dan menetapkan peratus (%) KPI PEO berdasarkan pernyataan PEO.

2.0 OBJECTIVE OF SURVEY
To obtain verification of PEO and KPI percentage setting for PEO based on the PEO statements.

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)
Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)
These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

SECTION A: DEMOGRAPHIC

1. Name:

2. Email:

3. Telephone Number:

4. Company:

5. Type of Organization:
Mark only one oval.

- Private
- Multi-National
- Other: _____

6. Your Position:

7. Your Company's Sector:
Mark only one oval.

- Food Technology
- Halal
- Biotechnology
- Landscape / Horticulture
- Chemical Technology / Fat and Oil
- Agrotechnology
- Aquaculture
- Other: _____

8. How do you know about Polytechnic or Community College?
Mark only one oval.

- I am Polytechnic/Community College Alumni
- From Industry
- Social Media
- Other: _____

SECTION B: VERIFICATION OF PROGRAMME EDUCATIONAL OBJECTIVE (PEO) AND KPI PERCENTAGE (%) SETTING FOR PEO SURVEY

A Program Educational Objectives (PEO) is specific goals consistent with the mission and vision of the Department of Polytechnic and Community Colleges, are responsive to the expressed interest of programme stakeholders, and describe the expected achievements of graduates in their career and professional life a few years after graduation. Below are the new PEOs for the (fill in programme's name) in the community college. Your views are sought to verify the suitability of the PEO's.

Please evaluate and tick in the box provided:

Assessment Level:

1- *Strongly Disagree*/ Sangat Tidak Setuju
2- *Disagree*/ Tidak Setuju
3- *Agree*/ Setuju
4- *Strongly Agree*/ Sangat Setuju

1. PEO1: Berpengetahuan dalam bidang yang dipelajari bersesuaian dengan keperluan industri.

	1	2	3	4	5	
Strongly Disagree	☐	☐	☐	☐	☐	***Strongly Agree***

2. Based on this PEO statement, what are the KPI (%) that should be achieved by graduates for this program.
   Please choose one suitable answer

10%	20%	30%	40%	50%
☐	☐	☐	☐	☐

3. PEO 2: Mempamerkan kemahiran teknikal, kemahiran teknologi digital dan menunjukkan kemahiran kuantitatif dalam bidang pemprosesan dan kawalan mutu makanan.

	1	**2**	**3**	**4**	**5**	
Strongly Disagree	☐	☐	☐	☐	☐	***Strongly Agree***

4. Based on this PEO statement, what are the KPI (%) that should be achieved by graduates for this program.
Please choose one suitable answer

10%	**20%**	**30%**	**40%**	**50%**
☐	☐	☐	☐	☐

5. PEO 3: Mempamerkan kemahiran komunikasi dan kemahiran interpersonal serta ciri kepimpinan di dalam kumpulan yang terdiri daripada pelbagai lapisan masyarakat dan budaya dalam memperkasa pembelajaran sepanjang hayat.

	1	**2**	**3**	**4**	**5**	
Strongly Disagree	☐	☐	☐	☐	☐	***Strongly Agree***

6. Based on this PEO statement, what are the KPI (%) that should be achieved by graduates for this program

10%	**20%**	**30%**	**40%**	**50%**
☐	☐	☐	☐	☐

7. PEO 4: Membudayakan pembangunan kendiri, pemikiran keusahawan serta mamatuhi etika kerja dan profesionalisme dalam komuniti dan pihak berkepentingan.

	1	**2**	**3**	**4**	**5**	
Strongly Disagree	◯	◯	◯	◯	◯	***Strongly Agree***

8. Based on this PEO statement, what are the KPI (%) that should be achieved by graduates for this program.
Please choose one suitable answer

10%	**20%**	**30%**	**40%**	**50%**
◯	◯	◯	◯	◯

SECTION C: OTHERS

9. List the top 5 skills that community colleges graduates should have in your company or organization.

---

10. What should a community colleges graduate be capable of after 3-5 years of graduating or working?

---

11. In order to improve the quality of our community colleges graduates, in what areas are you willing to collaborate with the community colleges?

Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah: *If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:*

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

Lampiran 3B

LAPORAN KAJIAN PENETAPAN KPI OBJEKTIF PROGRAM (OP) / *PROGRAMME EDUCATIONAL OBJECTIVE (PEO)* DARIPADA PEMEGANG TARUH SIJIL XX

Soal selidik ini dibuat bagi mendapatkan penetapan KPI OP/PEO daripada pemegang taruh terhadap program Sijil XX. Pemegang taruh memainkan peranan penting terhadap OP/PEO program kerana menentukan hala tuju graduan dalam jangka masa 3 -5 tahun.

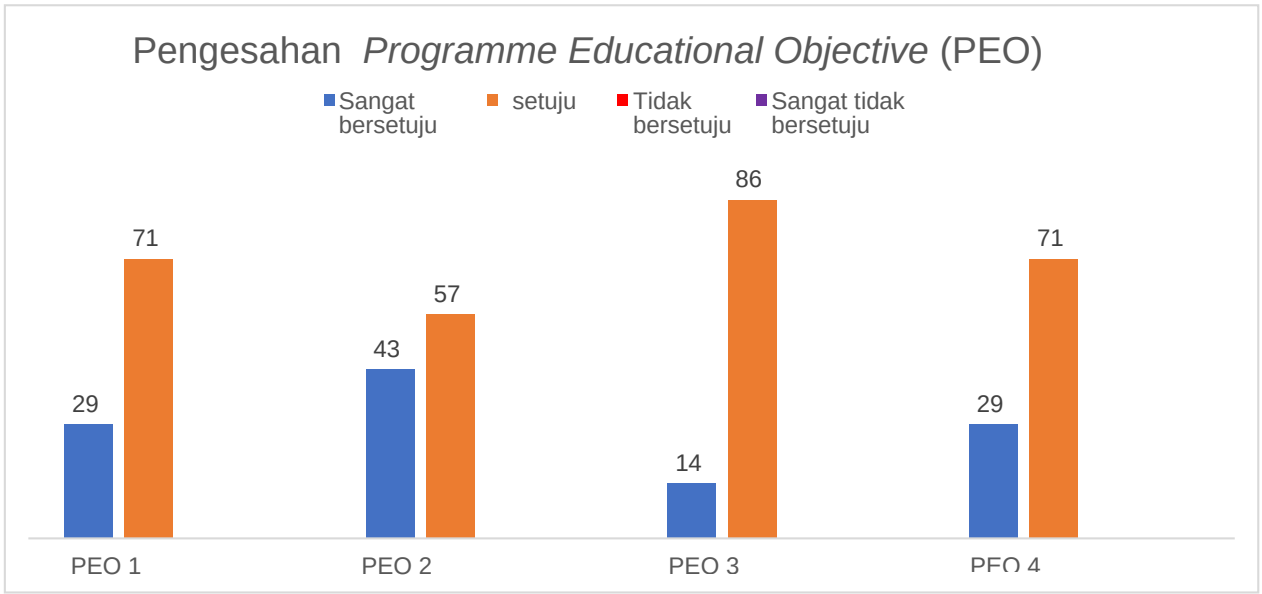
BAHAGIAN A: DEMOGRAFI

1. Bilangan industri menjawab: 7

2. Jenis organisasi

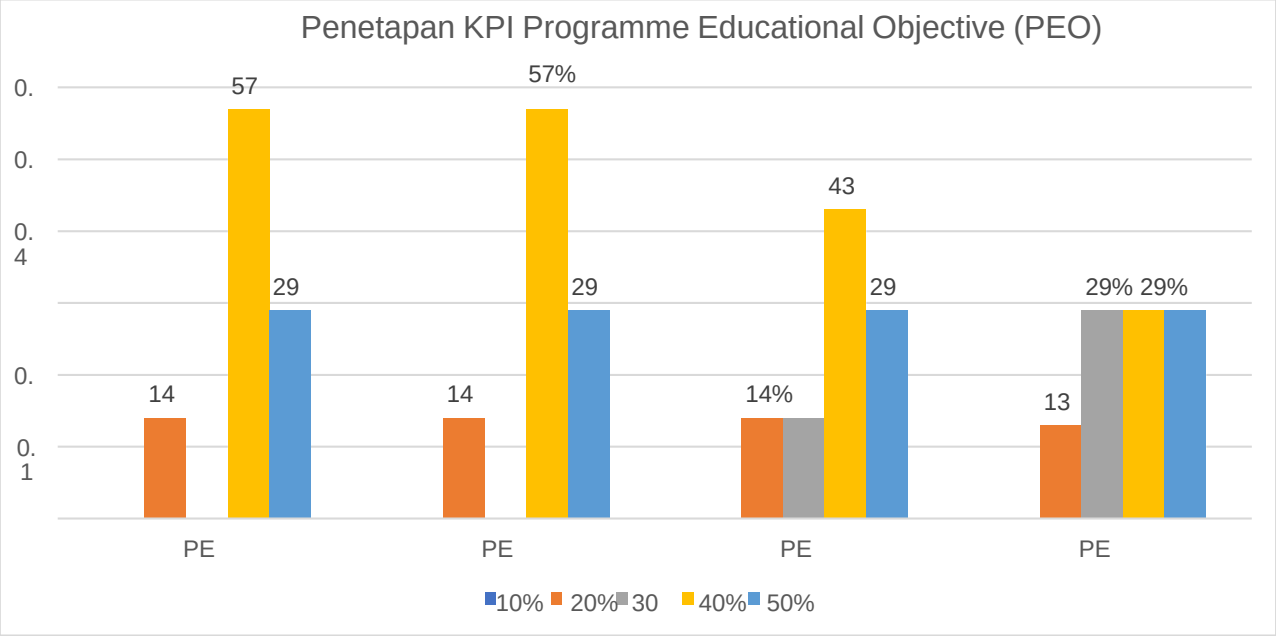
Bil	Syarikat	Sektor	Kod
1	Marrybrown	*Food and Beverages*	**A**
2	Sabah Sea Produce Sdn Bhd	*Seafood Peocessing*	**B**
3	Glades Guppy Packaging (M) Sdn Bhd	*Packaging*	**C**
4	Zbc bakery Sdn Bhd	*Cakes and Bakery*	**D**
5	Petitchef Enterprise	*Cakes and Bakery*	**E**
6	Lembaga Pertubuhan Peladang	*Agriculture*	**F**
7	Cynergy Solutions & Services	*Consulting Services*	**G**

BAHAGIAN B: PENGESAHAN OBJEKTIF PROGRAM (OP)/ *PROGRAMME EDUCATIONAL OBJECTIVE* (PEO)



Bil	Objektif Program (OP) / *Programme Educational Objective (PEO)*	OP/PEO	Sangat Bersetuju	Setuju	Tidak Bersetuju	Sangat Tidak Bersetuju
1	Menghasilkan pengamal pemprosesan makanan yang mengaplikasikan pengetahuan dan kemahiran menyelesaikan masalah dalam bidang pemprosesan dan kawalan mutu makanan.	OP/ PEO 1	29%	71%		
2	Menghasilkan pengamal pemprosesan makanan yang mempamerkan kemahiran teknikal, kemahiran teknologi digital dan menunjukkan kemahiran kuantitatif dalam bidang pemprosesan dan kawalan mutu makanan.	OP/ PEO 2	43%	57%		
3	Menghasilkan pengamal pemprosesan makanan yang mempamerkan kemahiran komunikasi dan kemahiran interpersonal serta ciri kepimpinan di dalam kumpulan yang terdiri daripada pelbagai lapisan masyarakat dan budaya dalam memperkasa pembelajaran sepanjang hayat.	OP/ PEO 3	14%	86%		
4	Menghasilkan pengamal pemprosesan makanan yang membudayakan pembangunan kendiri, pemikiran keusahawan serta mamatuhi etika kerja dan profesionalisme dalam komuniti dan pihak berkepentingan.	OP/ PEO 4	29%	71%		

BAHAGIAN B: PENETAPAN KPI OBJEKTIF PROGRAM (OP) / *PROGRAMME EDUCATIONAL OBJECTIVE (PEO)*



Susulan kajiselidik ini, Mesyuarat Penasihat Kurikulum yang dihadiri oleh pihak industri telah bersetuju untuk menetapkan KPI PEO adalah seperti berikut:

PEO	PERATUSAN KPI
PEO 1	40%
PEO 2	40%
PEO 3	40%
PEO 4	40%

Bil	Objektif Program (OP) / *Programme Educational Objective (PEO)*	OP/PEO	10%	20%	30%	40%	50%
1	Menghasilkan pengamal pemprosesan makanan yang mengaplikasikan pengetahuan dan kemahiran menyelesaikan masalah dalam bidang pemprosesan dan kawalan mutu makanan.	OP/PEO 1		14%		57%	29%
2	Menghasilkan pengamal pemprosesan makanan yang mempamerkan kemahiran teknikal, kemahiran teknologi digital dan menunjukkan kemahiran kuantitatif dalam bidang pemprosesan dan kawalan mutu makanan.	OP/PEO 2		14%		57%	29%
3	Menghasilkan pengamal pemprosesan makanan yang mempamerkan kemahiran komunikasi dan kemahiran interpersonal serta ciri kepimpinan di dalam kumpulan yang terdiri daripada pelbagai lapisan masyarakat dan budaya dalam memperkasa pembelajaran sepanjang hayat.	OP/PEO 1		14%	14%	43%	29%
4	Menghasilkan pengamal pemprosesan makanan yang membudayakan pembangunan kendiri, pemikiran keusahawan serta mamatuhi etika kerja dan profesionalisme dalam komuniti dan pihak berkepentingan.	OP/PEO 4		13%	29%	29%	29%

BAHAGIAN C: KEMAHIRAN PELAJAR YANG DIPERLUKAN DI INDUSTRI

1. *Have knowledge of the basics of HACCP*
2. *Fast learner*
3. *Have a knowledge of the basics of food handlers.*
4. *Good chemical handling, understand product hygiene, & good coordination skills.*
5. *Leadership skill*
6. *Proficient in operating Microsoft Office.*

BAHAGIAN C: KEUPAYAAN / KEBOLEHAN YANG BOLEH DICAPAI OLEH PELAJAR SELEPAS 3-5 TAHUN BREGRADUAT.

1. *Leading a team*
2. *They should continue their studies to the diploma level because the industry now desperately needs better quality graduates in a company.*
3. *Comprehensive understanding in the area of working. Graduate shall be able to stand out among colleagues, show good responsibility able to come up with new ideas for improvement*
4. *Entrepreneur or achieve higher level in the company organization*
5. *Be able to doing their own business.*

BAHAGIAN C: BIDANG YANG BOLEH KOLABORASI BERSAMA INDUSTRI

1. Program Latihan Industri
2. Perkongsian pengetahuan dan pengalaman
3. Kolaborasi projek
4. Analisis dan penyelidikan
5. Latihan

KESIMPULAN

Berdasarkan rumusan di atas, penetapan KPI yang dicadangkan adalah seperti dibawah dan kemahiran yang terdapat dalam PEO program bertepatan dengan kemahiran yang diperlukan di industri.

PEO	PERATUSAN KPI
PEO 1	40%
PEO 2	40%
PEO 3	40%
PEO 4	40%

Lampiran 3C

TEMPLAT INSTRUMEN PENILAIAN PEO PROGRAM ETAC (DICHOTOMOUS & SKALA LIKERT)

PILIHAN PERTAMA: DICHOTOMOUS

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO) UNTUK ALUMNI NYATAKAN NAMA PROGRAM SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY FOR ALUMNI OF STATE THE NAME OF THE PROGRAMME FILL IN THE NAME OF THE INSTITUTION

*Templat ini disediakan dalam dwibahasa. Namun demikian, pengkaji boleh memilih untuk menggunakan sama ada Bahasa Melayu/ Bahasa Inggeris/ dwibahasa.

Alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

To our respected polytechnic/community college alumni,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic and Community College Education.

Thank you.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 3 bahagian:
A) demografi B) maklumat pekerjaan C) persepsi alumni terhadap pencapaian PEO masing-masing.

1.0 INTRODUCTION

This survey has 3 parts:
A) demography B) employment information C) perceived alumni achievement of PEO.

2.0 OBJEKTIF KAJIAN

Untuk mendapatkan persepsi alumni tentang pengetahuan dan kemahiran yang diaplikasikan di tempat kerja berdasarkan pernyataan PEO

2.0 OBJECTIVE OF SURVEY

To obtain perceived alumni knowledge and skills applied in the workplace based on the PEO statements

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)

Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

BAHAGIAN A: DEMOGRAFI

1. Nama
2. Emel
3. No. Telefon
4. Jantina:
    - Lelaki
    - Perempuan

5. Umur
   - 20-24
   - 25-29
   - 30-34
   - 35-39
   - 40-44
   - 45-49
   - 50 dan ke atas

6. Bangsa
   - Malay
   - India
   - Cina
   - Lain-lain

PART A: DEMOGRAPHY

1. Name
2. Email
3. Telephone Number:
4. Gender
   - Male
   - Female

5. Age
   - 20-24
   - 25-29
   - 30-34
   - 35-39
   - 40-44
   - 45-49
   - 50 dan ke atas

6. Race
   - Malay
   - India
   - Cina
   - Others

MAKLUMAT PENGAJIAN ALUMNI DI KOLEJ KOMUNITI

5. Institusi Akademik (*dropdown* – Politeknik / Kolej Komuniti)
6. Nama Program
7. Tahun Tamat Pengajian (*dropdown* - 2014-2018)

ALUMNI'S COMMUNITY COLLEGE EDUCATION INFORMATION

5. Academic Institution (dropdown - Polytechnic / Community College)
6. Program Name
7. Year of Graduation (dropdown - 2014-2018)

BAHAGIAN B: Maklumat Pekerjaan/ *Employment information*

Maklumat Pekerjaan - Rujuk Contoh Instrumen ETAC di Lampiran 3D dan 3F

Mengandungi:

1) Nama syarikat atau organisasi
2) Jawatan terkini
3) Pendapatan bulanan

BAHAGIAN C: PENCAPAIAN PEO/ *PEO ATTAINMENT*

PEO 1: Isikan PEO Program

Isikan *Variable Measured*

Isikan item descriptor

PEO2: Isikan PEO Program

Isikan *Variable Measured*

Isikan item descriptor

PEO3: Isikan PEO Program **Isikan *Variable Measured*** *Isikan item descriptor*
PEO4: Isikan PEO Program **Isikan *Variable Measured*** *Isikan item descriptor*
Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah: *If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:*

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

PILIHAN KEDUA: SOALAN BERBENTUK SKALA LIKERT/
LIKERT'S SCALE QUESTION

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO)
UNTUK ALUMNI NYATAKAN NAMA PROGRAM
SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY
FOR ALUMNI OF STATE THE NAME OF THE PROGRAMME
FILL IN THE NAME OF THE INSTITUTION

*Templat ini disediakan dalam dwibahasa. Namun demikian, pengkaji boleh memilih untuk menggunakan sama ada Bahasa Melayu/ Bahasa Inggeris/ dwibahasa.

Alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

To our respected polytechnic/community college alumni,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic and Community College Education.

Thank you.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 2 bahagian:

A) demografi B) persepsi alumni terhadap pencapaian PEO masing-masing.

1.0 INTRODUCTION

This survey has 2 parts:

A) demography B) perceived alumni achievement of PEO.

2.0 OBJEKTIF KAJIAN

Untuk mendapatkan persepsi alumni tentang pengetahuan dan kemahiran yang diaplikasikan di tempat kerja berdasarkan pernyataan PEO

2.0 OBJECTIVE OF SURVEY

To obtain perceived alumni knowledge and skills applied in the workplace based on the PEO statements

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)

Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

BAHAGIAN A: DEMOGRAFI/ MAKLUMAT LATAR BELAKANG

ARAHAN: Para graduan dimohon untuk melengkapkan BAHAGIAN A borang kaji selidik ini untuk memberikan maklum balas berkenaan pekerjaan daripada graduan politeknik. Maklum balas anda akan dipelihara sebagai sulit. Kajian ini dijalankan untuk menilai *Programme Educational Outcome* (PEO) untuk Program (Sila isikan nama program)

Nama: .....

Alamat Emel Graduan:.....

No telefon: ….....

No Matrik (Contoh : 14DKA15F1050):.....

Jantina

- Perempuan
- Lelaki

Status bekerja

- Bekerja
- Belum Bekerja

Pekerjaan mengikut bidang

- Ya
- Tidak

Jawatan

.....

Pengalaman Bekerja

- < 1 tahun
- 1-3 tahun
- 3 tahun

Nama Syarikat/ Firma

.....

Emel Syarikat/ Firma

.....

BAHAGIAN B: PERSEPSI ALUMNI TERHADAP PENCAPAIAN *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)

Sebagai alumni bagi nyatakan nama program pengajian kolej komuniti, dan merujuk kepada kerjaya sekarang, mohon nyatakan persepsi anda terhadap pencapaian PEO anda mengikut skala berikut:

Skala:
1 Sangat Lemah
2 Lemah
3 Sederhana
4 Baik
5 Sangat Baik

PART B: PERCEIVED ALUMNI ACHIEVEMENT OF PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

As an alumni of the fill in the name of the programme and with reference to your career now, please provide your perceived achievement of the following PEO, according to the following scale:

Scale:
1 Very weak
2 Weak
3 Moderate
4 Good
5 Very Good

PEO statement and questions Sejauh manakah anda?	**Pencapaian Alumni/ *Alumni Achievement***				
	1	**2**	**3**	**4**	**5**
PEO 1: State PEO 1					
1. Fill in the PEO indicator					
2. Fill in the PEO indicator					
3. Fill in the PEO indicator					

PEO 2: State PEO 2					
4. *Fill in the PEO indicator*					
5. Fill in the PEO indicator					
6. Fill in the PEO indicator					
PEO 3: State PEO 3					
7. Fill in the PEO indicator					
8. Fill in the PEO indicator					
9. Fill in the PEO indicator					

Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah:

If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

Lampiran 3D

CONTOH INSTRUMEN PENILAIAN PEO PROGRAM ETAC (DICHOTOMOUS)

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO) UNTUK ALUMNI NYATAKAN NAMA PROGRAM SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY FOR ALUMNI OF STATE THE NAME OF THE PROGRAMME FILL IN THE NAME OF THE INSTITUTION

To our respected polytechnic/community college alumni,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic and Community College Education.

Thank you.

1.0 INTRODUCTION

This survey has 3 parts:
A) demography B) employment information C) perceived alumni achievement of PEO.

2.0 OBJECTIVE OF SURVEY

To obtain perceived alumni knowledge and skills applied in the workplace based on the PEO statements

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

PART A: BACKGROUND INFORMATION

Instructions: Please complete the questions marked (*) and click on the options available

1. ***Name ****

2. ***Email ****

3. ***Telephone number ****

4. ***Year of graduation ** ***

Mark only one oval.

- 2018
- 2017
- 2016
- 2015
- 2014
- 2013

5. *Polytechnic* *

Mark only one oval.

- PTSS
- POLIMAS
- PTSB
- PSP
- PUO
- PSAS
- PSA
- PSIS
- PKB
- PKT
- PSMZA
- POLISAS
- PPD
- PMM
- PMK
- PIS
- PMJ
- PMU
- PKS
- PKK

6. *Programme* *

Mark only one oval.

- DEP
- DET
- DTK
- DJK
- DEE
- DEU
- DEO
- DEQ
- DEG

7. *Employment status* *

Mark only one oval.

- *employed (eg. working in a company etc.)*
- *self-employed (eg. online business, etc)*
- *further study*
- *unemployed*

PART B: Employment Information
Instructions: Please complete the questions marked (*) and click on the options available

8. Name of your company or organization:

_____

9. Current position

_____

10. Range of salary
Mark only one oval.

- ◯ Less than RM 2000
- ◯ Between RM 2001 - RM 3000
- ◯ More than RM 3000

PART C: *PERCEIVED ALUMNI ACHIEVEMENT OF PEO*

PEO 1: *Practicing technician in electrical engineering related field*

C1: KNOWLEDGE AND TECHNICAL SKILL
Instructions: Please complete the questions marked (*) and click on the options available

11. Are you working in electrical and /or electronic field? *
Mark only one oval.

- ◯ *Yes*
- ◯ *No*

12. If yes, select the sector below:
Mark only one oval.

- ◯ Engineering / Manufacturing
- ◯ Education
- ◯ Information Technology / Computing
- ◯ Sales and Marketing
- ◯ Transportation / Logistic
- ◯ Defense / Security
- ◯ Services
- ◯ Training / Consultation
- ◯ Other: _____

13. Starting position *

Mark only one oval.

- ◯ *Technician*
- ◯ *Assistant Engineer*
- ◯ *Supervisor*
- ◯ *Other:* _____

PEO2: ***Contributing to society with professional ethic and responsibilities***

C2: COMPETENCY, CORPORATE SOCIAL RESPONSIBILITY (CSR) & ETHIC

Instructions: Please complete the questions marked (*) and click on the options available

14. Are you a member of any professional body or regulatory body (e.g: BEM/ IEEE/ MySet/ CIDB) *

Mark only one oval.

- ◯ Yes
- ◯ No

15. Have you ever practiced safety and health at your workplace? (e.g: personal protective equipment (PPE) *

Mark only one oval.

- ◯ Yes
- ◯ No

16. Have you ever been involved in any community activities? (e.g: Committee member of any residential area, NGOs) *

Mark only one oval.

- ◯ Yes
- ◯ No

17. Have you attended any courses in industrial automation and be certified? *

DJK graduate only

Mark only one oval.

- ◯ *Yes*
- ◯ *No*
- ◯ *Not applicable*

PEO3: ***Engaging in enterprising activities that apply engineering knowledge and technical skills***

C3: ENTERPRISING, COMMUNICATION AND LEADERSHIP
Instructions: Please complete the questions marked (*) and click on the options available

18. Do you have any experience in any of these activities? (eg. report writing / presentation / being a panel / speaker for a forum / communication via email) *

Mark only one oval.

- ◯ Yes
- ◯ No

19. Have you ever worked in group or team at your workplace/during your further studies? *

Mark only one oval.

- ◯ Yes
- ◯ No

20. Have you ever led a team or group at your workplace/during your further studies? (eg: demonstrate procedure / give instructions to colleague) *

Mark only one oval.

- ◯ *Yes*
- ◯ *No*

21. Are you involved in any form of business (including online/ part time)? *

Mark only one oval.

- ◯ *Yes*
- ◯ *No*

PEO4: ***Engaging in activities to enhance knowledge for successful career advancement***

C4: CAREER ADVANCEMENT

Instructions: Please complete the questions marked (*) and click on the options available

22. Have you ever involved in the research or development of any products/ services/system/technical project? *

Mark only one oval.

- ◯ *Yes*
- ◯ *No*

23. What is your achievement thus far? *

You can choose more than one answer.
Check all that apply.

- ☐ Salary increment
- ☐ Own business
- ☐ Promoted to higher post
- ☐ Further studies
- ☐ Professional Certification
- ☐ Other: _____

24. Currently, are you furthering your study to a higher level than Diploma? *

Mark only one oval.

- ◯ Yes
- ◯ No

If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:

Thank you for spending your time to complete this questionnaire.

Lampiran 3E

LAPORAN KAJIAN PENCAPAIAN
PROGRAMME EDUCATONAL OBJECTIVES (PEO)
NYATAKAN NAMA PROGRAM
SILA ISIKAN NAMA INSTITUSI

1.0 INTRODUCTION

The Engineering Technology Accreditation Council (ETAC) is a professional body responsible for all engineering programs in Malaysia, the offering institution is required to implement the Outcome-Based Education or the OBE system. The OBE is an educational process which is based on trying to achieve certain specified outcomes in terms of individual student learning. Thus, having decided what are the key things students should understand and be able to do or the qualities they should develop, both structures and curricula are designed to achieve those capabilities or qualities. The designing process involves restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than accumulation of course credits.

In general, the OBE assessment includes three types of outcomes/objectives:

i. The Course Learning Outcome (CLO) - being assessed during semester
ii. The Programme Learning Outcome (PLO) - being assessed at the end of their four-year study and
iii. The Program Educational Objectives (PEO) - being assessed after 3-5 years of their graduation date

The PEO are specific goals consistent with the mission and vision of the expressed interest of programme stakeholders describing expected achievements of graduates in their career and professional life after graduation. Criteria of good PEOs are such as distinctive, specific, measurable, achievable, result oriented, and having a time frame.

(Isikan nama institusi) Vision

To be a towering TVET institution globally.

(Isikan nama institusi) Mission

i. Producing quality, holistic and well-balanced TVET graduates with entrepreneurshipin order to fulfil the needs of the nation.
ii. Developing and sustaining smart partnerships with relevant parties locally andinternationally.
iii. To benefit society through education, research, and innovation.

1.1 The overview of Programme Educational Objectives (PEOs)

There are five (5) programmes offered at Department of Electrical Engineering (DEE), (Isikan nama institusi) namely, (Isikan nama program yang terlibat di institusi cth: Diploma in wwww - W, Diploma in xxxx - X, Diploma in yyy - Y, Diploma in zzzz – Z. The objectives of a programme should produce balanced TVET graduates that are set across four (4) Programme Educational Objectives (PEOs) as indicated in Table 1.1.

Table 1. 1 Programme Educational Objectives (PEO)

PEO1	Practicing Technician in Electrical Engineering Related Field
PEO2	Contributing to society with professional ethics and responsibilities
PEO3	Engaging in enterprising activities that apply engineering knowledge and technical skills
PEO4	Engaging in activities to enhance knowledge for successful career advancement

1.2 Objective of Study

To carry out this study, several objectives have been identified as below.

i. To identify the frequency ability of practicing technician in electrical engineering related field among graduates (PEO1).
ii. To identify the frequency ability of contributing to society with professional ethicand responsibilities among graduates (PEO2).
iii. To identify the frequency ability of engaging in enterprising activities that apply engineering knowledge and technical skills among graduates (PEO3).
iv. To identify the frequency ability of engaging in activities to enhance knowledgefor successful career advancement among graduates (PEO4).

2.0 DATA COLLECTION METHOD

The findings of this study are to outline the answers to the research questions, which are to determine whether students achieve all the PEOs. To answer the question of the study, the reviewers used Dichotomous question or Close-ended question to answer the PEO1-PEO4 to explain the respondent's work in the field of engineering, questionnaire on professional ethics, enterprising activities that apply engineering knowledge and successful career advancement. Data analysis from Analysis Programme Educational Objective (PEO) (Pilot Test) (2019) as a pilot test result is carried out through the frequency distribution process which is to show frequency and percentage which is used as a key performance indicator (KPI) for the achievement of PEO 2021. The data obtained is analysed based on the achievement of each PEO. One of all items in a PEO that reaches 'Yes' will be counted as the PEO is achieved. In addition, interview analysis was also conducted on the industry in support of research findings and improvement recommendations.

2.1 Study Design

For this study, the evaluation instruments were designed based on the objectives of the study as well as answering the research questions. The set of valuation instruments was divided intothree parts i.e., Part A, B, and C. Part A is a section of respondents' demographic information containing only ten items divided into two categories, namely, background information and employment information.

2.1.1 PEO1: Practicing Technician in Electrical Engineering Related Field

PEO1 is an instrument in Part C i.e., knowledge and technical skills, this section includes twoquestion items as stated below:

1. Are you working in the electrical and /or electronic field?
2. If yes, select the sector below:

   Engineering / Manufacturing / Education / Information Technology / Computing / Salesand Marketing / Transportation / Logistic / Defence / Security / Services / Training / Consultation / Other
3. Starting Position
   Technician / Assistant Engineer / Supervisor

For Question 2, only respondents who answered 'Yes' will be considered to determine the percentage working in the field of (Isikan bidang kajian yang dilaksanakan cth: Electrical and Electronics).

2.1.2 PEO2: Contributing to society with professional ethics and responsibilities

PEO2 is a Part C2 instrument. Part C2 contains statements regarding competency, corporate social responsibility (CSR) and ethics. This part in total contains three items as described below:

1. Are you a member of any professional body or regulatory body (e.g: BEM/ IEEE/ MySet/ CIDB)
2. Have you ever practiced safety and health at your workplace? (e.g: personal protective equipment (PPE)
3. Have you ever been involved in any community activities? (e.g: Committee member ofany residential area, NGOs)

The achievement of PEO2 only considers the percentage of respondents who answered 'Yes' and 'No' to see the actual achievement percentage for the PEO2.

2.1.3 PEO3: Engaging in enterprising activities that apply engineering knowledge and technical skills

Part C3 is an instrument in the analysis of PEO 3. This part is about entrepreneurship, communication and leadership, comprises the following four question items:

1. Are you involved in any form of business (including online/ part time)?
2. Do you have any experience in any of these activities? (eg. report writing/ presentation/ being a panel/ speaker for a forum/ communication via email).
3. Have you ever worked in a group or team at your workplace/during your further studies?
4. Have you ever led a team or group at your workplace/during your further studies? (eg:demonstrate procedure / give instructions to colleague)

Answers to non-working responders in Questions 1 and 2 need to be categorized into Not Applicable (NA) as the instrument of the question does not address the role of the respondent.The achievement of PEO3 does not need to take into account the percentage of NA, and only takes into account the percentage of respondents who answered ‘Yes’ and ‘No’ to see the actual percentage of achievement for PEO3.

2.1.4 PEO4: Engaging in activities to enhance knowledge for successful career advancement

PEO4 is an instrument in Part C4 which is Career Advancement. Analysis of respondent data based on three elements to refer to the career improvement of graduate’s careers for working, pursuing education and entrepreneurs. This section covers three question items as listed below:

1. What is your achievement thus far?
2. Have you ever been involved in the research or development of any products/ services/ system/ technical project?
3. Currently, are you furthering your study to a higher level than Diploma?

3.0 RESULTS AND ANALYSIS DATA

This PEO review analysis study was developed based on two analytical methods, the first of which is data from the results of questionnaires for graduates of the electrical engineering department who graduated in (Isikan graduan pelajar yang terlibat. Cth: batch 2016 and 2017). The survey was prepared by (Isikan nama Jabatan terlibat/ Institusi) and was opened for responses in late 2020. Meanwhile, the second analysis data is the result of interviews by industry advisers for each program appointed by the department that was conducted by (Isikan nama Jabatan terlibat/ institusi).

This study targets the collection of data to measure the proximity of graduates to the Program Objective (OP) / Program Educational Objective (PEO). The range of mean marks used as a measure is as follows:

Range of Min	Interpretation of mean scores
1.00 – 1.89	Very Low
1.90 – 2.69	Low
2.70 – 3.49	Moderate
3.50 – 4.29	High
4.30 – 5.00	Very High

Source: Zaihan & Hilmun (2016)

3.1 Analysis of PEO of Questionnaire Method

Up to 2019, there were about 1329 total graduates since the performance of the PEOs will onlybe counted for graduates with 3 to 5 years of working experience after graduation, thus data from the students that graduated in 2016 and 2017 are considered for the evaluation of the PEO's achievement. In total, there are about 779 graduates or alumni who are expected to have working experience in the engineering field (Unit Peperiksaan (Isikan nama Institusi), 2019). Nonetheless, based on the data, only 200 respondents out of 779 graduates responded to the PEO's survey form.

In addition, Table 3.1 shows the overall distribution of respondents by gender for four programmes in X.

Table 3. 1 Total respondent by gender

Programme	Male	Female	Total respondents	Total graduates
W	69	13	82	379
X	21	29	50	190
Y	20	13	33	172
Z	21	14	35	38
Total			**200**	**779**

3.1.1 PEO1: Practicing Technician in Electrical Engineering Related Field

PEO1 is a practicing technician in electrical engineering related field. PEO1 describes a technician who works in any industry with a job function in electrical or electronic discipline. Based on the collection data shown in Table 3.2, the achievement of the PEOs were based on the key performance indicator of 2016 and 2017 of JKE graduates.

Table 3. 2 Percentage achievement of PEO1 for four programs

PEO CURRICULUM JUNE 2019	Analysis PEO	Achievement (%)							
		W		X		Y		Z	
		T	A	T	A	T	A	T	A
PEO1 Practicing Technician in Electrical Engineering Related Field	Working in electrical and/or electronic field	**>50%**	**68%**	**>50%**	**84%**	**>50%**	**33%**	**>50%**	**48%**
	Working in other fields		16%		8%		30%		26%
	Further studies or unemployed		16%		8%		37%		26%

***T – Target, A – Achievement**

Overall, the percentage achievement for W and X programmes has met the indicator target more than 50%. In fact, about 68% W graduates and 84% from X graduates have been involved with work in the electrical or electronic field, while others are working in other fields, further study and unemployed. The results for the Y and Z programmes did not reach their target, which was 33% and 48%, respectively. This is due to more graduates from Y and Z programmes having opportunities for further study to higher levels and work not in the field, so, this indicates the percentage of PEO1 to be achieved is low. The results indicate the strength of PEO1, in which the programme has successfully produced professional workforces, capable and competently working in the field.

3.1.2 PEO2: Contributing to society with professional ethics and responsibilities

PEO2 is a contributing to society with professional ethics and responsibilities. PEO2 describes the graduate's involvement in community activities which includes engineering and non-engineering work related to society, health and safety. During the activities, graduates instill awareness of the safety and health culture and suggest solutions pertaining to the environment and sustainability to the community. In performing the activities, the graduates adhere to professional ethics and responsibilities by following rules and regulations of the field. Table 3.3 shows the result indicates the strength of PEO2, in which all programmes have successfullyperformed the appropriate ethical responsibility.

Table 3. 3 Percentage achievement of PEO2 for four programmes

PEO CURRICULUM JUNE 2019	Analysis PEO	Achievement (%)							
		W		X		Y		Z	
		T	A	T	A	T	A	T	A
PEO2 Contributing to society with professional ethics and responsibilities	Contributing to society with professional ethics and responsibilities	>50%	100%	>50%	100%	>50%	82%	>50%	97%
	Not involved and contributed to society		0%		0%		18%		3%

***T – Target, A – Achievement**

The finding also indicates only 18% and 3% of the graduates from Y and Z programmes were not involved and contributed to society. Indeed, the graduates recognized the importance of sharing their responsibility through engagement with the community, with more than 80% of batch 2016 and 2017 alumni from all programmes having contributed to society with professional ethics and responsibilities. The result shows that W and X programmes recorded 100% of graduates achieving PEO2. Overall, the percentage achievement PEO2 has met the indicator target more than the expectation.

3.1.3 PEO3: Engaging in enterprising activities that apply engineering knowledge andtechnical skills

PEO3 is engaging in enterprising activities that apply engineering knowledge and technical skills. PEO3 describes the enterprising activities which require effective communication and contribution as a team member. Enterprising activities involved business in engineering, research and development (R&D) and technical projects. Enterprising activities can be online or offline business. It also can be pursued either full time or part time basis. Summary of the current graduate's employment involved in entrepreneurship and R&D activities respective to PEO3 is tabulated in Table 3.4.

Table 3. 4 Percentage achievement of PEO3 for four programmes

PEO CURRICULUM JUNE 2019	Analysis PEO	Achievement (%)							
		W		X		Y		Z	
		T	A	T	A	T	A	T	A
PEO3 Engaging in enterprising activities that apply engineering knowledge and technical skills	Involved in entrepreneurial / R & D activities	>30%	79%	>30%	58%	>30%	52%	>30%	71%
	Not involved in entrepreneurship / R & D activities		21%		40%		33%		20%
	Did not answer because of unemployment status		0%		2%		15%		9%

***T – Target, A – Achievement**

The results for the W, X, Y, and Z programmes, respectively, showed approximately 79%, 58%, 52%, and 71%, of graduates engaged in business opportunities and R&D activities. In terms of PEO3, the graduates have successfully participated in entrepreneurship activities that apply engineering knowledge and technical skills and show that they do not just work without engaging in any activity. Overall, PEO3 successfully achieved more than 30% achievement target.

3.1.4 PEO4: Engaging in activities to enhance knowledge for successful career advancement

PEO4 is an activity to enhance knowledge for successful career advancement. PEO4 describes the future achievement of the graduates. The graduates have the opportunities to further their studies to a higher level such as advanced diploma, degree, master or PhD. Graduates can also upgrade their knowledge by attaining professional certification. For career advancementcriteria, the graduates are expected to hold senior positions such as senior technician, project manager consultant and supervisor. As presented in Table 3.5, the result indicated percentage achievement of PEO4 for four programmes is more than 80% achievement.

Table 3.5 Percentage achievement of PEO4 for four programmes

PEO CURRICULUM JUNE 2019	Analysis PEO	Achievement (%)							
		W		X		Y		Z	
		T	A	T	A	T	A	T	A
PEO4 Engaging in activities to enhance knowledge for successful career advancement	Further study, self-employed, holding a senior position post and salary increment, involve in technical project or involve in R&D and upgrade technical knowledge	>30%	100%	>30%	98%	>30%	85%	>30%	91%
	Not achieved		0%		2%		15%		9%

***T – Target, A – Achievement**

Based on collected data, 85% of graduates from Y programme achieve PEO4, which is either further study, self-employed, holding a senior position post and salary increment, involved in technical projects or involved in R&D and upgrading technical knowledge. Indeed, the graduates recognized the importance of engaging in activities to enhance knowledge for successful career advancement when averaged above 91-100% from W, X, and Z programmes indicated that they are satisfactorily achieved by the batch 2016 and 2017 alumni within 3 years of graduating date. According to the data collected, the majority of working graduates receive a salary increment after three years of employment, while the rest get a promotion and get a better job.

4.0 DISCUSSION AND CONCLUSION

A survey of PEO (PEO1-PEO4) achievements for polytechnic programs offered at polytechnics was provided to graduates who have completed in 2016 and 2017. This data was taken in 2020 by graduates of the XX, (Isikan nama institusi) for the (Isikan nama program) W, X, Y and Z programs. The results of the analysis were compared to the department's KPI determined from the pilot test against the graduates in the June 2019 session. For verification, data triangulation is performed in conjunction with the industry advisory panel for each program to obtain the PEO related industry feedback.

The analysis found that PEO1 - practicing technician in the (Isikan nama bidang program) related field meets department KPIs of more than 50% except for XXX 33% and XXX 48% programs, due to the percentage of graduates who continue their studies and who work not in the field. All respondents agreed and supported the 50% setting for PEO1 achievement.

Through the analysis of PEO2 - contributing to society with professional ethics and responsibilities found that the entire program had reached a departmental KPI percentage of over 50%. High percentage contributions to all four programs indicate that graduates are contributing to society with professional ethics and responsibilities. Respondents also suggested that in order to further strengthen the preparation of graduates to the world of industry, they should be given exposure to the form or format of industry reports as the initial preparation of students in preparing reports, especially in English reports. Additionally, graduates should have information about the professional body path and the opportunity to obtain a professional certificate through their respective fields.

PEO3 - engaging in enterprising activities that apply engineering knowledge and technical skills shows that the department's KPI setting is only 30% due to the characteristics of this PEO3 more to involve graduates in entrepreneurial or R&D activities in the industry. Analytical data shows that all programs have reached that percentage target.

Engaging in activities to enhance knowledge for successful career advancement of PEO4 shows that the data analysis results have met the department's KPI requirements of over 30%. The industry is in dire need of graduates who have best communication skills between students and other industry networking such as contractor, consultant, and client as added value to them in promotion. In addition, the importance of good work ethic and proper procedure should be applied to the student. They also need to be interested in the latest technology and installation.

5.0 CONCLUSION

It is hoped that this report for W, Y, X and Z programmes, Politeknik/ Kolej Komuniti (sila isikan nama institusi) in 2016 and 2017 (sila isikan batch graduan) will contribute towards improving quality in education and training in Polytechnic/ Community College Malaysia as well as strengthening the planning of polytechnic/ community college studies programmes in the future.

6.0 REFERENCES

Jabatan Pengajian Politeknik. (2013). *Manual Pembangunan Kurikulum Program Pengajian Politeknik.* Putrajaya.

Analysis Programme Educational Objective (PEO) *(Pilot Test).* (2019). Department of Electrical Engineering. Politeknik Port Dickson.

Jumlah Pelajar PPD Mengikut Semester, Jabatan dan Program. (2019). Unit Peperiksaan (Rekod& Pensijilan). Politeknik Port Dickson.

Lampiran 3F

CONTOH INSTRUMEN PENILAIAN PEO PROGRAM ETAC (SKALA LIKERT)

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO)
UNTUK ALUMNI NYATAKAN NAMA PROGRAM
SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY
FOR ALUMNI OF STATE THE NAME OF THE PROGRAMME
FILL IN THE NAME OF THE INSTITUTION

Alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 2 bahagian:
A) demografi B) persepsi alumni terhadap pencapaian PEO masing-masing.

2.0 OBJEKTIF KAJIAN

Untuk mendapatkan persepsi alumni tentang pengetahuan dan kemahiran yang diaplikasikan di tempat kerja berdasarkan pernyataan PEO

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)

Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

BAHAGIAN A: MAKLUMAT LATAR BELAKANG

Nama
.....

Alamat Emel Graduan
.....

No. Telefon
.....

No. Matrik (Contoh : 14DKA15F1050)
.....

Jantina
- ◯ Perempuan
- ◯ Lelaki

Status Bekerja
- ◯ Bekerja
- ◯ Belum Bekerja

Pekerjaan mengikut bidang
- ◯ Ya
- ◯ Tidak

Jawatan

.....

Pengalaman Bekerja
- ◯ < 1 tahun
- ◯ 1-3 tahun
- ◯ > 3 tahun

Nama Syarikat/ Firma

.....

Emel Syarikat/ Firma

.....

BAHAGIAN B: PERSEPSI ALUMNI TERHADAP PENCAPAIAN *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)

Sebagai alumni bagi nyatakan nama program pengajian kolej komuniti, dan merujuk kepada kerjaya sekarang, mohon nyatakan persepsi anda terhadap pencapaian PEO anda mengikut skala berikut:

Skala:
1 Sangat Lemah
2 Lemah
3 Sederhana
4 Baik
5 Sangat Baik

Disertakan penyataan PEO seperti berikut: (Sila gantikan dengan PEO program masing-masing)

PEO 1: Mengintegrasikan prinsip kejuruteraan awam dan mengembangkan pemikiran kritikal kepada penyelesaian masalah dalam kerja-kerja rekabentuk dan teknikal yang cekap dalam bidang kejuruteraan.

PEO 2: Mempamerkan kemahiran praktikal dan komunikasi dengan berkesan dalam persekitaran kerja global.

PEO 3: Mempunyai kapasiti untuk melaksanakan pembelajaran sepanjang hayat, tanggungjawab sosial dan keusahawanan.

PEO 4: Bina bakat kepimpinan dan kemahiran kerja berpasukan, sikap yang betul dan etika profesional

Sejauh manakah anda?

1. Berpengetahuan dalam bidang yang dipelajari bersesuaian dengan keperluan industri. [PEO 1]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	◯	◯	◯	◯	◯	***Sangat Baik***

2. Berkemahiran dalam bidang yang dipelajari bersesuaian dengan keperluan industri. [PEO 2]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	◯	◯	◯	◯	◯	***Sangat Baik***

3. Beretika dalam menyelesaikan masalah yang melibatkan kemahiran dalam bidang yang dipelajari. [PEO 4]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	◯	◯	◯	◯	◯	***Sangat Baik***

4. Peka dan mampu menjalankan tanggungjawab sosial dengan menggunakan kemahiran dalam bidang. [PEO 3]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	◯	◯	◯	◯	◯	***Sangat Baik***

5. Mampu dalam menyelesaikan masalah yang melibatkan kemahiran dalam bidang yang dipelajari. [PEO 1]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	◯	◯	◯	◯	◯	***Sangat Baik***

6. Berkomunikasi dengan berkesan di persekitaran perindustrian. [PEO 1]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	☐	☐	☐	☐	☐	***Sangat Baik***

7. Memimpin dalam kerja yang bercirikan pasukan di persekitaran perindustrian. [PEO 4]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	☐	☐	☐	☐	☐	***Sangat Baik***

8. Mengaplikasikan kemahiran keusahawanan di dalam alam pekerjaan. [PEO 3]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	☐	☐	☐	☐	☐	***Sangat Baik***

9. Bersedia untuk menerima kursus lanjutan bagi meningkatkan pengetahuan(pembelajaran sepanjang hayat). [PEO 3]

	1	**2**	**3**	**4**	**5**	
Sangat Lemah	☐	☐	☐	☐	☐	***Sangat Baik***

Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah:

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

Lampiran 3G

LAPORAN KAJIAN PENGUKURAN PENCAPAIAN OBJEKTIF PROGRAM UNTUK PROGRAM XXXX DI POLITEKNIK/KOLEJ KOMUNITI

1.0 PENGENALAN

Bahagian ini memfokuskan kepada analisa pencapaian keseluruhan kajian PEO yang melibatkan perbincangan tentang profil demografi responden dan dapatan daripada analisis deskriptif.

Kajian Pencapaian PEO ini dilaksanakan berdasarkan PEO bagi program XXXX bagi kohort Jun 2017 seperti berikut:

PEO 1: Mengintegrasikan prinsip kejuruteraan awam dan mengembangkan pemikiran kritikal kepada penyelesaian masalah dalam kerja-kerja rekabentuk dan teknikal yang cekap dalam bidang kejuruteraan.

PEO 2: Mempamerkan kemahiran praktikal dan komunikasi dengan berkesan dalam persekitaran kerja global.

PEO 3: Mempunyai kapasiti untuk melaksanakan pembelajaran sepanjang hayat, tanggungjawab sosial dan keusahawanan.

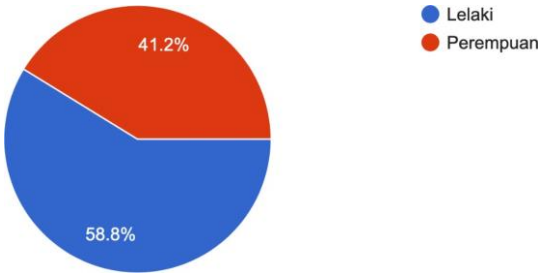
PEO 4: Bina bakat kepimpinan dan kemahiran kerja berpasukan, sikap yang betul dan etika profesional

2.0 ANALISIS KAJIAN

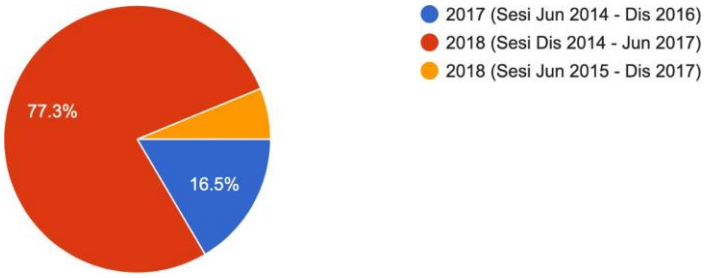
BAHAGIAN A: DEMOGRAFI

Soal selidik ini telah dijawab oleh 97 responden bagi graduan XXXX Jun 2017.

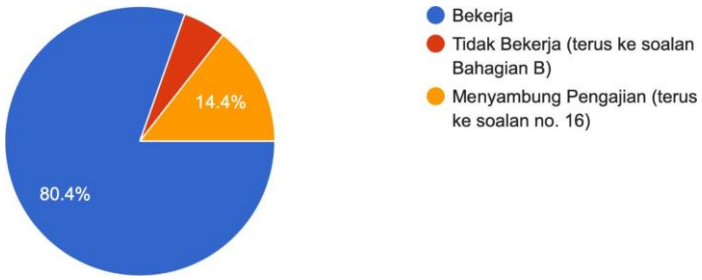
1. Gender / Jantina:



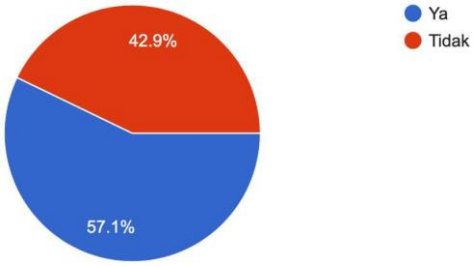
2. Tahun Graduasi:



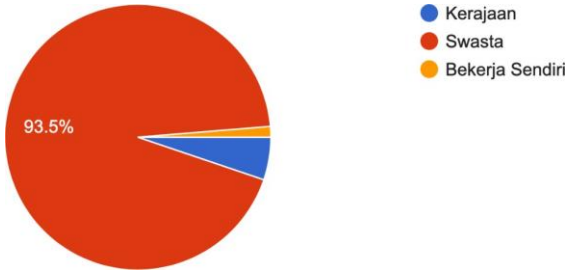
3. Status Bekerja:



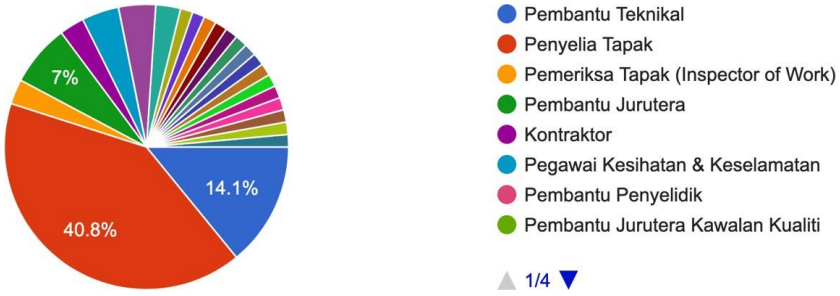
4. Bekerja mengikut bidang (Kejuruteraan Awam):

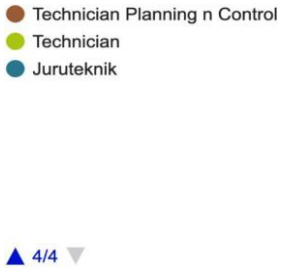


5. Sektor:

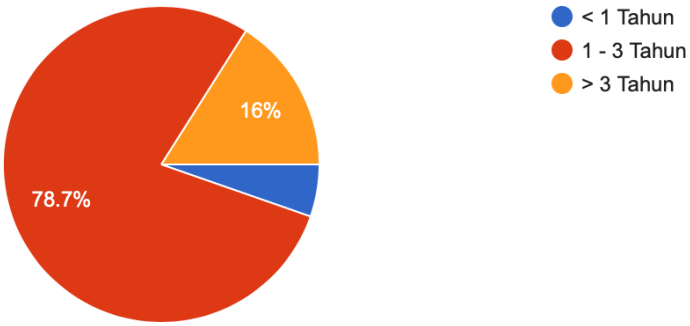


6. Jawatan:

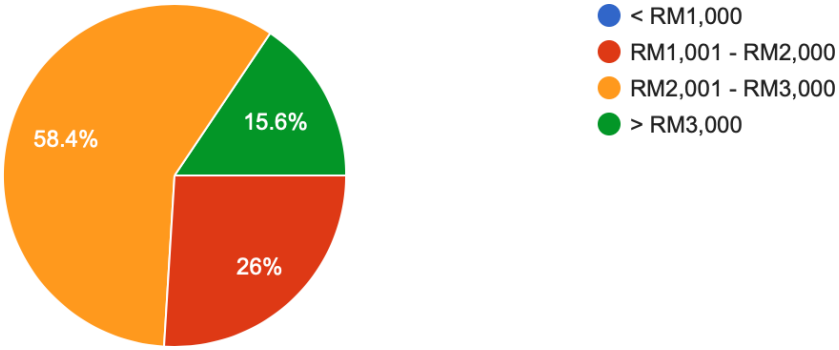




7. Tempoh Bekerja:



8. Pendapatan:



DAPATAN ANALISIS KUANTITATIF DAN PERBINCANGAN

Instrumen kajian

Instrumen yang digunakan dalam kajian ini merupakan satu set soal selidik yang telah dibangunkan dengan melibatkan beberapa orang pegawai daripada politeknik, kolej komuniti dan universiti awam. Pemurnian item soal selidik telah dilakukan untuk memastikan kesahan instrumen dalam mengukur apa yang ingin diukur dalam kajian ini. Instrumen kajian ini diukur dengan menggunakan skala *Likert*. Skala *Likert* yang digunakan ialah:

1 Sangat Lemah
2 Lemah
3 Sederhana
4 Baik
5 Sangat Baik

Instrumen kajian ini telah diedarkan kepada responden dengan menggunakan aplikasi *Google Forms* untuk memudahkan proses pengumpulan data.

Definisi sasaran

KPI kajian ini menyasarkan pengumpulan data untuk mengukur tahap pencapaian graduan terhadap Objektif Program (OP) / *Programme Educational Objectives* (PEO). Julat markat min yang digunakan sebagai pengukur adalah seperti berikut:

Julat min	Interpretasi skor min
1.00 – 1.89	Sangat rendah
1.90 – 2.69	Rendah
2.70 – 3.49	Sederhana
3.50 – 4.29	Tinggi
4.30 – 5.00	Sangat tinggi

Sumber: Zaihan & Hilmun (2016)

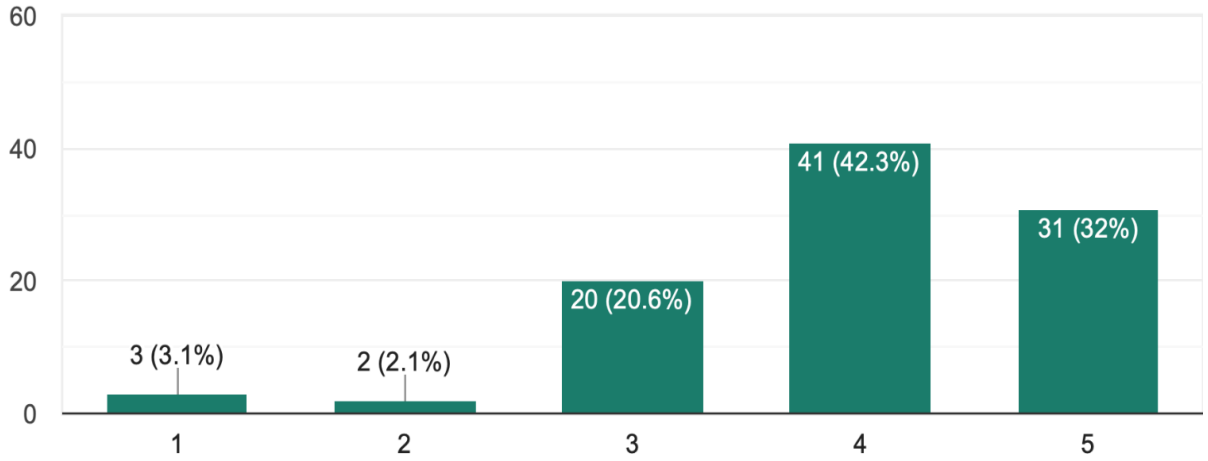
BAHAGIAN B: PENCAPAIAN PEO

PEO 1 - Integrate civil engineering principles and develop critical thinking to solve problem in design works and technically competent in engineering fields. *(Mengintegrasikan prinsip kejuruteraan awam dan mengembangkan pemikiran kritikal kepada penyelesaian masalah dalam kerja-kerja rekabentuk dan teknikal yang cekap dalam bidang kejuruteraan.)*

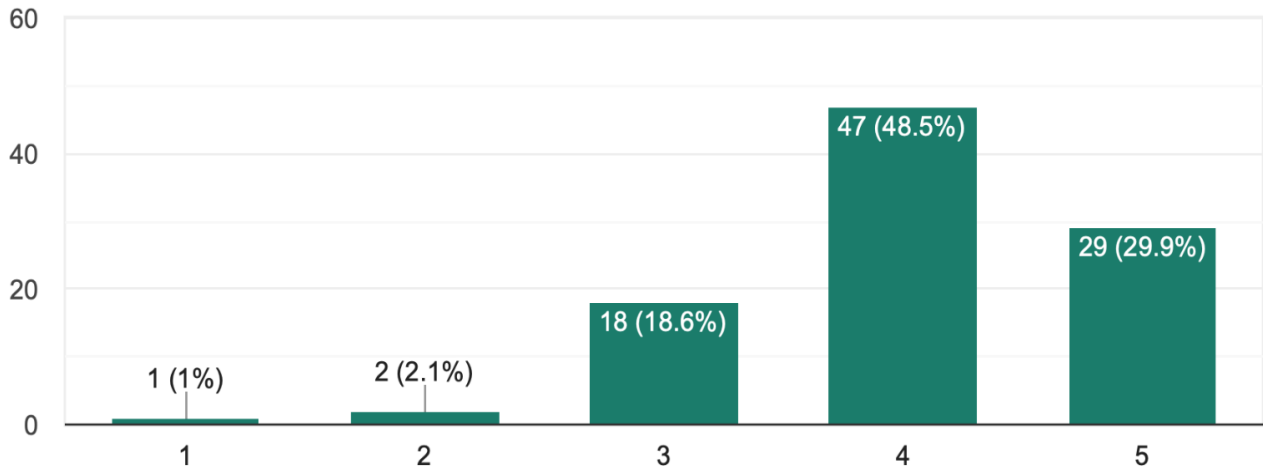
Analisis Soalan 1 dan Soalan 5:

	Maklumbalas daripada responden					
	Skor 5	**Skor 4**	**Skor 3**	**Skor 2**	**Skor 1**	**Skor MIN**
S1. Berpengetahuan dalam bidang yang dipelajari bersesuaian dengan keperluan industri.	**31**	**41**	**20**	**2**	**3**	**3.78**
	32%	**42.3%**	**20.6%**	**2.1%**	**3.1%**	
S5. Mampu dalam menyelesaikan masalah yang melibatkan kemahiran dalam bidang yang dipelajari.	**29**	**47**	**18**	**2**	**1**	**3.81**
	29.9%	**48.5%**	**18.6%**	**2.1%**	**1%**	

S1. Berpengetahuan dalam bidang yang dipelajari bersesuaian dengan keperluan industri



S5. Mampu dalam menyelesaikan masalah yang melibatkan kemahiran dalam bidang yang dipelajari



Dapatan kepada PEO 1

Secara keseluruhannya, pencapaian PEO 1 mencapai tahap yang tinggi iaitu skor min sebanyak 3.78 dan 3.81

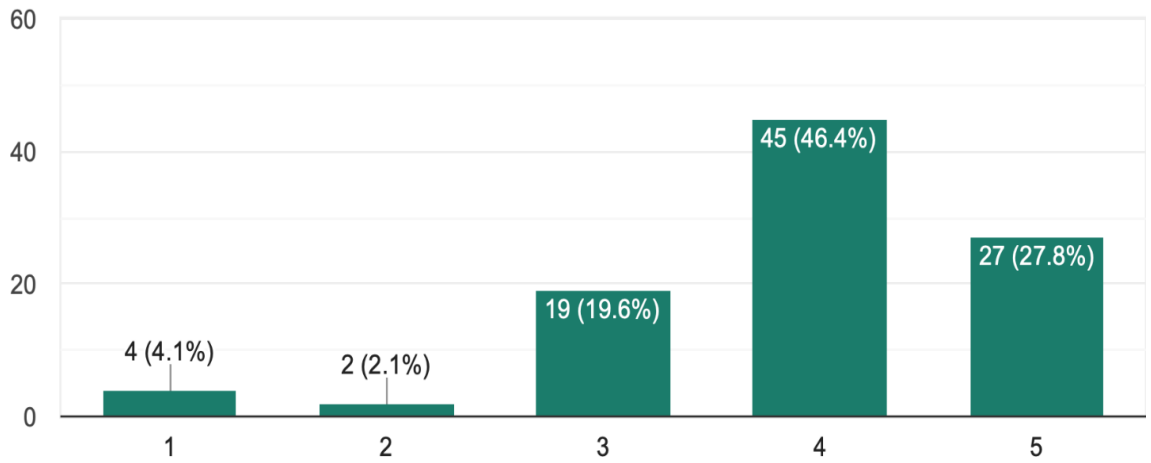
Dapatan menunjukkan graduan (Isikan nama institusi) bersetuju Program XXXX dapat melahirkan pekerja yang mampu mengintergrasikan prinsip kejuruteraan awam dan mengembangkan pemikiran kritikal kepada penyelesaian masalah dalam kerja-kerja reka bentuk dan teknikal yang cekap dalam bidang kejuruteraan.

PEO 2 –Display practical skills and communicate effectively in global work environment.
(Mempamerkan kemahiran praktikal dan komunikasi dengan berkesan dalam persekitaran kerja global.)

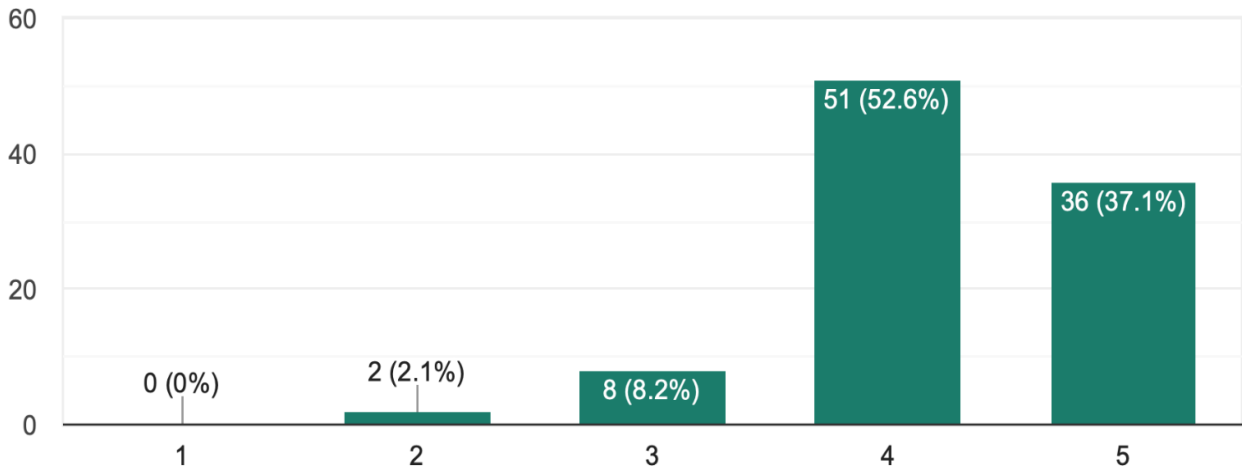
Analisis Soalan 2 dan Soalan 6:

	Maklumbalas daripada responden					
	Skor 5	**Skor 4**	**Skor 3**	**Skor 2**	**Skor 1**	**Skor MIN**
S2. Berkemahiran dalam bidang yang dipelajari bersesuaian dengan keperluan industri.	**27**	**45**	**19**	**2**	**4**	**3.76**
	27.8%	**46.4%**	**19.6%**	**2.1%**	**4.1%**	
S6. Berkomunikasi dengan berkesan di persekitaran perindustrian.	**36**	**51**	**8**	**2**	**0**	**3.99**
	37.1%	**52.6%**	**8.2%**	**2.1%**	**0%**	

S2. Berkemahiran dalam bidang yang dipelajari bersesuaian dengan keperluan industri



S6. Berkomunikasi dengan berkesan di persekitaran perindustrian



Dapatan kepada PEO 2

Secara keseluruhannya, pencapaian PEO 2 mencapai tahap yang tinggi iaitu skor min sebanyak 3.76 dan 3.99

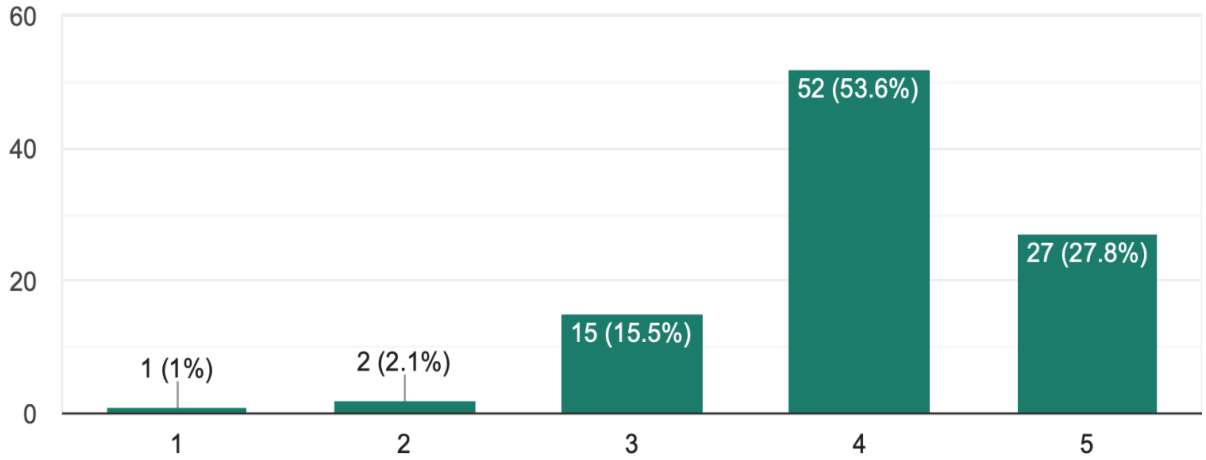
Dapatan menunjukkan graduan (isikan nama institusi) bersetuju Program XXXX berjaya melahirkan pekerja yang dapat mempamerkan kemahiran praktikal dan komunikasi dengan berkesan dalam persekitaran kerja global.

PEO 3 - Possess in lifelong learning, social responsibilities and entrepreneurship.
(Mempunyai pembelajaran sepanjang hayat, tanggungjawab sosial dan keusahawanan.)

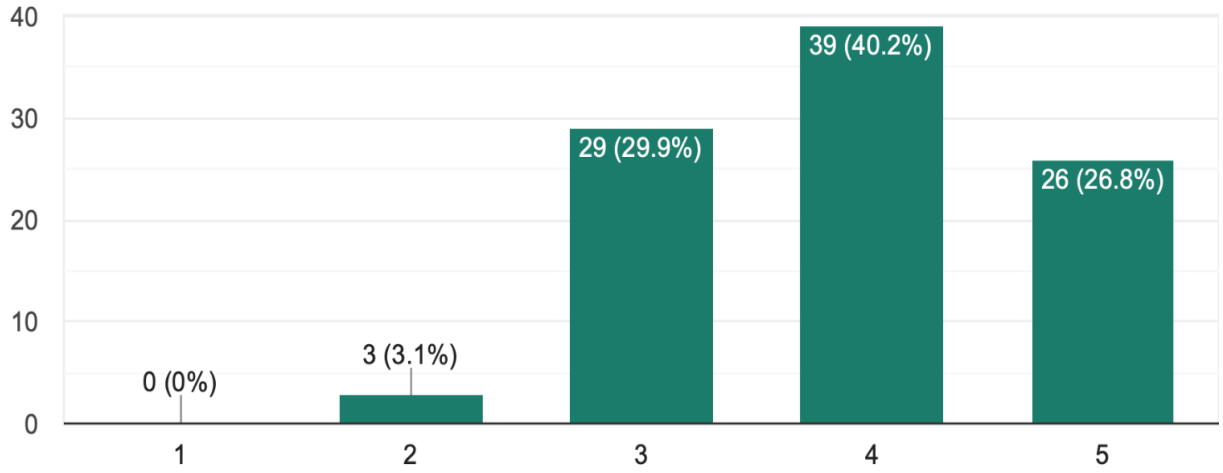
Analisis Soalan 4, Soalan 8 dan Soalan 9:

	Maklumbalas daripada responden					
	Skor 5	**Skor 4**	**Skor 3**	**Skor 2**	**Skor 1**	**Skor MIN**
S4. Peka dan mampu menjalankan tanggungjawab sosial dengan menggunakan kemahiran dalam bidang.	**27**	**52**	**15**	**2**	**1**	**3.84**
	27.8%	**53.6%**	**15.5%**	**2.1%**	**1%**	
S8. Mengaplikasikan kemahiran keusahawanan di dalam alam pekerjaan.	**26**	**39**	**29**	**3**	**0**	**3.87**
	26.8%	**40.2%**	**29.9%**	**3.1%**	**0%**	
S9. Bersedia untuk menerima kursus lanjutan bagi meningkatkan pengetahuan (pembelajaran sepanjang hayat)	**40**	**42**	**12**	**1**	**2**	**4.00**
	41.2%	**43.3%**	**12.4%**	**1%**	**2.1%**	

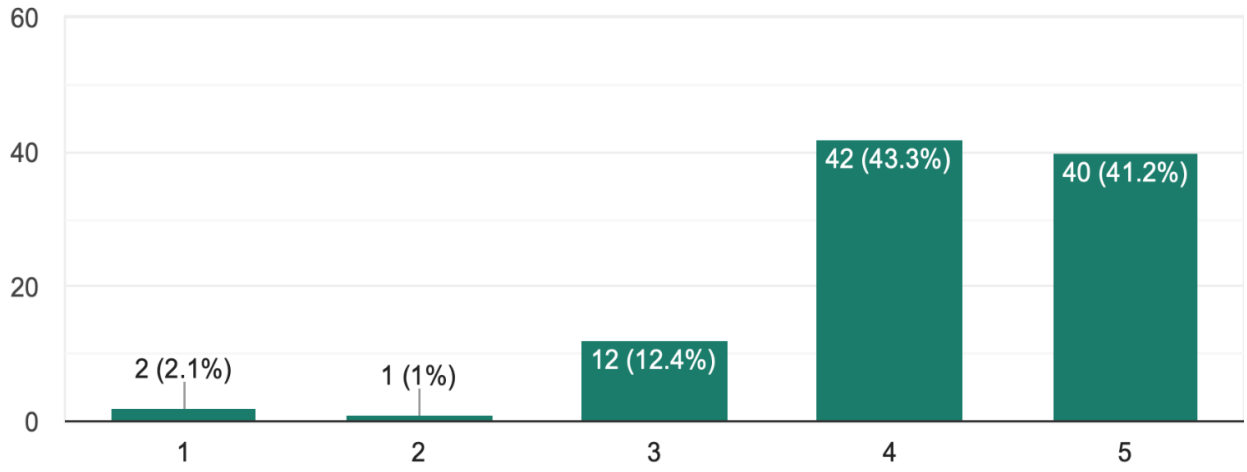
S4. Peka dalam menyelesaikan masalah yang melibatkan kemahiran dalam bidang yangdipelajari



S8. Mengaplikasikan kemahiran keusahawanan di dalam alam pekerjaan.



S9. Bersedia untuk menerima kursus lanjutan untuk meningkatkan pengetahuan (pembelajaran sepanjang hayat).



Dapatan kepada PEO 3

Secara keseluruhannya, pencapaian PEO 3 mencapai tahap yang tinggi iaitu skor min sebanyak 3.84, 3.87 dan 4.00

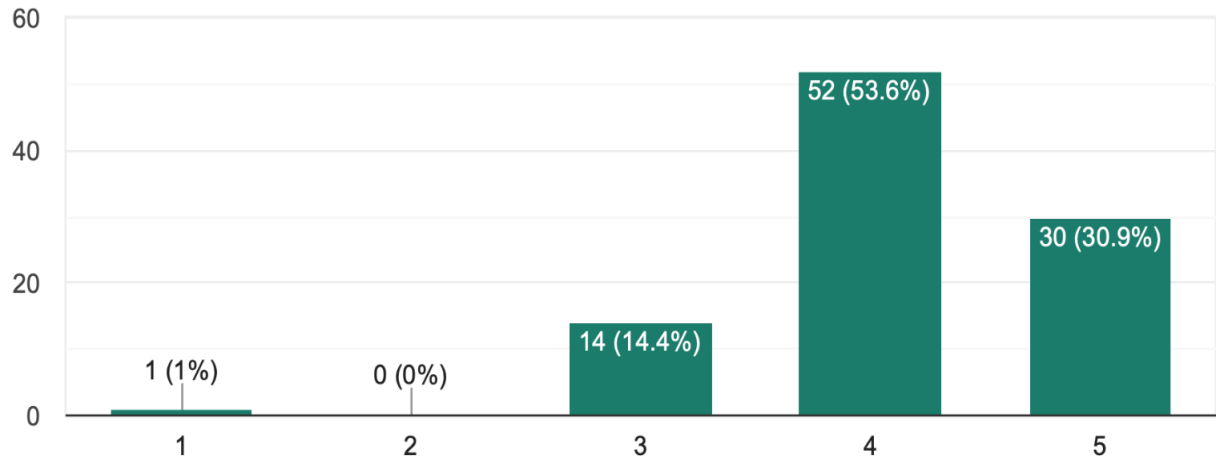
Dapatan menunjukkan graduan (isikan nama institusi) bersetuju Program XXXX mampu melahirkan pekerja yang mempunyai kemahuan untuk meneruskan pembelajaran sepanjang hayat, tanggungjawab sosial dan keusahawanan.

PEO 4 - Build leadership and teamwork skills, right attitude and professional ethics
(Bina bakat kepimpinan dan kemahiran kerja berpasukan, sikap yang betul dan etika profesional)

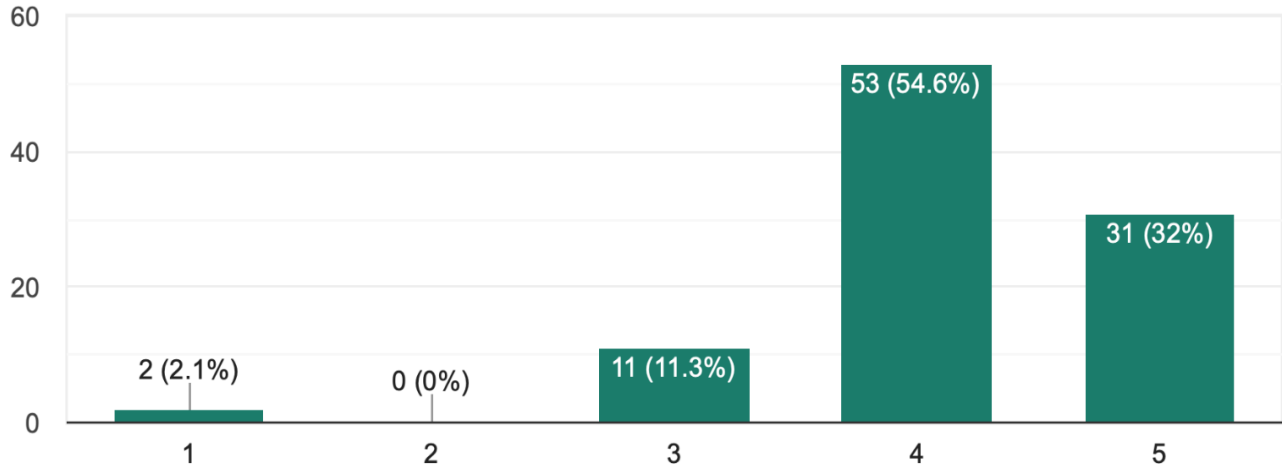
Analisis Soalan 3 dan Soalan 7:

	Maklumbalas daripada responden					
	Skor 5	**Skor 4**	**Skor 3**	**Skor 2**	**Skor 1**	**Skor MIN**
S3. Beretika dalam menyelesaikan masalah yang melibatkan kemahiran dalam bidang yang dipelajari.	**30**	**52**	**14**	**0**	**1**	**3.80**
	30.9%	**53.6%**	**14.4%**	**0%**	**1%**	
S7. Memimpin dalam kerja yang bercirikan pasukan di persekitaran perindustrian.	**31**	**53**	**11**	**0**	**2**	**3.93**
	32%	**54.6%**	**11.3%**	**0%**	**2.1%**	

S3. Beretika dalam menyelesaikan masalah yang melibatkan kemahiran dalam bidang yangdipelajari.



S7. Memimpin dalam kerja yang bercirikan pasukan di persekitaran perindustrian.



Dapatan kepada PEO 4

Secara keseluruhannya, pencapaian PEO 4 mencapai tahap yang tinggi iaitu skor min sebanyak 3.80 dan 3.93

Dapatan menunjukkan graduan (isikan nama institusi) bersetuju Program XXXX berjaya melahirkan pekerja yang mampu membina bakat kepimpinan dan kemahiran kerja berpasukan, sikap yang betul dan etika profesional.

RUMUSAN KESELURUHAN ANALISIS PEO

ANALISIS SOALAN SOAL SELIDIK		ANALISIS PEO	
SOALAN	**PERATUS SKOR 4&5(%)**	**PEO**	**SKOR MIN**
S1	74.3	PEO1	3.78
S5	78.4		3.81
S2	74.2	PEO2	3.76
S6	89.7		3.99
S4	81.4	PEO3	3.84
S8	67.0		3.87
S9	84.5		4.00
S3	84.5	PEO4	3.80
S7	86.6		3.93

3.0 KESIMPULAN

Dapatan data kajian penilaian pencapaian PEO program pengajian XXXX di politeknik/kolej komuniti menunjukkan kesemua objektif kajian tercapai dengan tahap penilaian pencapaian objektif program (PEO) adalah tinggi. Justeru, hal ini menunjukkan bahawa Bahagian Kurikulum, JPPKK dan politeknik/kolej komuniti telah memberi penekanan utama dalam keseimbangan penerapan dan penilaian aspek-aspek kemahiran dan kurikulum dalam menawarkan perkhidmatan pendidikan tinggi kepada para graduan XXXX bagi kohort Jun 2017. Lantaran itu, dapat dilihat bahawa dapatan data kajian ini amat penting kerana graduan merupakan salah satu pihak berkepentingan (*stakeholder*) yang berhak memperoleh pengetahuan, kemahiran teknikal dan kemahiran insaniah yang merupakan nilai tambah kepada seseorang pelajar semasa melanjutkan pengajian di politeknik/kolej komuniti.

Lampiran 4A

TEMPLAT INSTRUMEN PENILAIAN PEO PROGRAM TTAC (DICHOTOMOUS & SKALA LIKERT)

PILIHAN PERTAMA: *DICHOTOMOUS QUESTION*

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO) UNTUK ALUMNI NYATAKAN NAMA PROGRAM SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY FOR ALUMNI OF STATE THE NAME OF THE PROGRAMME FILL IN THE NAME OF THE INSTITUTION

***Templat ini disediakan dalam dwibahasa. Namun demikian, pengkaji boleh memilih untuk menggunakan sama ada Bahasa Melayu/ Bahasa Inggeris/ dwibahasa.**

Alumni politeknik/kolej komuniti yang dihormati,

Terima kasih kami ucapkan atas penyertaan anda dalam Kaji Selidik Penilaian Objektif Pendidikan Program (PEO) yang bertujuan menilai keberhasilan Pendidikan Berasaskan Hasil (OBE) serta kemenjadian graduan/alumni politeknik/kolej komuniti.

Soal selidik ini hanya mengambil masa 10 minit untuk dijawab. Kesemua maklumat yang diberikan adalah sulit.

Dapatan kajian ini akan digunakan untuk menambahbaik kualiti program pengajian di Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT).

Sekian, terima kasih.

To our respected polytechnic/community college alumni,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic And Community College Education.

Thank you.

1.0 PENGENALAN

Soal selidik ini terbahagi kepada 3 bahagian: A*)* Demografi B) Maklumat Pekerjaan C) Pencapaian PEO.

1.0 INTRODUCTION

This survey has 3 parts: A) Demography B) Employment information C) PEO Attainment.

2.0 OBJEKTIF KAJIAN

Untuk mendapatkan persepsi alumni tentang pengetahuan dan kemahiran yang diaplikasikan di tempat kerja berdasarkan pernyataan PEO

2.0 OBJECTIVE OF SURVEY

To obtain perceived alumni knowledge and skills applied in the workplace based on the PEO statements

3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)

Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

BAHAGIAN A: DEMOGRAFI

1.Nama
2.Emel
3.No. Telefon
4.Jantina:

- Lelaki
- Perempuan

5.Umur

- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50 dan ke atas

6.Bangsa

- Malay
- India
- Cina
- Lain-lain

7. Institusi Akademik (*dropdown* – Politeknik / Kolej Komuniti)

8. Nama Program
9. Tahun Tamat Pengajian (*dropdown* - 2014-2018)

PART A: DEMOGRAPHY

1.Name
2.Email
3.Telephone Number:
4.Gender

- Male
- Female

5.Age

- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50 dan ke atas

6.Race

- Malay
- India
- Cina
- Others

7. Academic Institution (dropdown - Polytechnic / Community College)
8. Program Name
9. Year of Graduation (dropdown - 2014-2018)

BAHAGIAN B: MAKLUMAT PEKERJAAN

10. Nama syarikat atau organisasi: ……

11. Jawatan terkini: ……..

12. Pengalaman Bekerja

- ◯ < 1 tahun
- ◯ 1-3 tahun
- ◯ 3 tahun

13. Pendapatan bulanan

- ◯ Di bawah RM 2000
- ◯ Di antara RM2001 hingga RM 3000
- ◯ Lebih daripada RM 3000

PART B: *EMPLOYMENT INFORMATION*

10. Name of Company or organization: ……..

11. Current position: ……..

12.Range of salary

- ○ *Less than RM 2000*
- ○ *RM2001 - RM 3000*
- ○ *More than RM 3000*

BAHAGIAN C: PENCAPAIAN PEO/ PART C: *PEO ATTAINMENT*

PEO 1: **Isikan PEO Program**

Isikan *Variable Measured*

Isikan item descriptor

PEO2: **Isikan PEO Program**

Isikan item descriptor

PEO3: **Isikan PEO Program**

Isikan *Variable Measured*

Isikan item descriptor

PEO4: **Isikan PEO Program** **Isikan *Variable Measured*** *Isikan item descriptor*
Jika tuan/ puan mempunyai sebarang cadangan berkaitan penambahbaikan Objektif Program Pengajian (PEO), tuan/ puan boleh mengemukakan cadangan tersebut melalui saluran yang disediakan di bawah: *If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:*

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

PILIHAN KEDUA: SOALAN BERBENTUK SKALA LIKERT/
LIKERT'S SCALE QUESTION

SOAL-SELIDIK OBJEKTIF PEMBELAJARAN PROGRAM (PEO)
UNTUK ALUMNI NYATAKAN NAMA PROGRAM
SILA ISIKAN NAMA INSTITUSI

PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY
FOR ALUMNI OF STATE THE NAME OF THE PROGRAMME
FILL IN THE NAME OF THE INSTITUTION

***Templat ini disediakan dalam dwibahasa. Namun demikian, pengkaji boleh memilih untuk menggunakan sama ada Bahasa Melayu/ Bahasa Inggeris/ dwibahasa.**

Alumni politeknik/kolej komuniti yang dihormati,

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Thank you.

1.0 PENGENALAN
Soal selidik ini terbahagi kepada 3 bahagian: A*)* Demografi/ Maklumat Latar Belakang
B) Maklumat Pekerjaan C) Pencapaian PEO.

1.0 INTRODUCTION
This survey has 3 parts: A) Demography/ Background information B) Employment Information C) PEO Attainment.

2.0 OBJEKTIF KAJIAN
Untuk mendapatkan persepsi alumni tentang pengetahuan dan kemahiran yang diaplikasikan di tempat kerja berdasarkan pernyataan PEO

2.0 OBJECTIVE OF SURVEY
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3.0 OBJEKTIF PENDIDIKAN PROGRAM (PEO)
Ini adalah pernyataan luas yang menerangkan tentang kerjaya dan pencapaian profesional yang sepatutnya dicapai oleh para graduan, 3 - 5 tahun selepas tamat pengajian.

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)
These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

BAHAGIAN A: DEMOGRAFI
1.Nama
2.Emel
3.No. Telefon
4.Jantina:

- Lelaki
- Perempuan

5.Umur

- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50 dan ke atas

6.Bangsa

- Malay
- India
- Cina
- Lain-lain

7. Institusi Akademik (*dropdown* – Politeknik / Kolej Komuniti)
8. Nama Program
9. Tahun Tamat Pengajian (*dropdown* - 2014-2018)

PART A: DEMOGRAPHY
1.Name
2.Email
3.Telephone Number:
4.Gender

- Male
- Female

5.Age

- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50 dan ke atas

6.Race

- Malay
- India
- Cina
- Others

7. Academic Institution (dropdown - Polytechnic / Community College)
8. Program Name
9. Year of Graduation (dropdown - 2014-2018)

BAHAGIAN B: MAKLUMAT PEKERJAAN

10. Nama syarikat atau organisasi: ……

11. Jawatan terkini: ……..

12. Pengalaman Bekerja

- ◯ < 1 tahun
- ◯ 1-3 tahun
- ◯ 3 tahun

14. Pendapatan bulanan

- ◯ Di bawah RM 2000
- ◯ Di antara RM2001 hingga RM 3000
- ◯ Lebih daripada RM 3000

PART B: *EMPLOYMENT INFORMATION*

10. Name of Company or organization: ……

11. Current position: ……..

1. Range of salary

- ◯ *Less than RM 2000*
- ◯ *RM2001 - RM 3000*
- ◯ *More than RM 3000*

BAHAGIAN C: PERSEPSI ALUMNI TERHADAP PENCAPAIAN *PROGRAMME EDUCATIONAL OBJECTIVES* (PEO)

Sebagai alumni bagi nyatakan nama program pengajian kolej komuniti, dan merujuk kepada kerjaya sekarang, mohon nyatakan persepsi anda terhadap pencapaian PEO anda mengikut skala berikut:

Skala:
1 Sangat Lemah
2 Lemah
3 Sederhana
4 Baik
5 Sangat Baik

SECTION C: PERCEIVED ALUMNI ACHIEVEMENT OF PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

As an alumni of the fill in the name of the programme and with reference to your career now, please provide your perceived achievement of the following PEO, according to the following scale:

Scale:
1 Very weak
2 Weak
3 Moderate
4 Good
5 Very Good

PEO statement and questions	**Pencapaian Alumni/ *Alumni Achievement***				
	1	**2**	**3**	**4**	**5**
PEO 1: State PEO 1					
1. Fill in the PEO indicator					
2. . Fill in the PEO indicator					
3. Fill in the PEO indicator					
PEO 2: State PEO 2					
4. Fill in the PEO indicator					
5. Fill in the PEO indicator					
6. Fill in the PEO indicator					

PEO 3: State PEO 3					
7. Fill in the PEO indicator					
8. Fill in the PEO indicator					
9. Fill in the PEO indicator					

Terima kasih kerana meluangkan masa untuk menjawab soal selidik ini.

Thank you for spending your time to complete this questionnaire.

Lampiran 4B

CONTOH INSTRUMEN PENILAIAN PEO PROGRAM TTAC (DICHOTOMOUS)

DIPLOMA PROGRAMMES BY POLYTECHNIC/ COMMUNITY COLLEGES PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY FOR ALUMNI OF POLYTECHNIC/ COMMUNITY COLLEGES

To our respected polytechnic/community college alumni,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic and Community College Education.

Thank you.

1.0 INTRODUCTION

This survey has 3 parts: A) Demography B) Employment information C) PEO Attainment.

2.0 OBJECTIVE OF SURVEY

To obtain perceived alumni knowledge and skills applied in the workplace based on the PEO statements

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

PART A: DEMOGRAPHY

1. Name: *_____
2. Email: *_____

3. Phone No.: *_____

4. Gender: *
   - ◯ Male
   - ◯ Female

ALUMNI'S POLYTECHNIC EDUCATION INFORMATION

5. Academic Institution

Mark only one oval.

- ◯ PTSS
- ◯ POLIMAS
- ◯ PTSB
- ◯ PSP
- ◯ PUO
- ◯ PSAS
- ◯ PSA
- ◯ PSIS
- ◯ PKB
- ◯ PKT
- ◯ PSMZA
- ◯ POLISAS
- ◯ PPD
- ◯ PMM
- ◯ PMK
- ◯ PIS
- ◯ PMJ
- ◯ PMU
- ◯ PKS
- ◯ PKK

6. *Programme Name*

Mark only one oval.

- ◯ XXX
- ◯ XXX

7. *Year of Graduation*

Mark only one oval.

- ◯ 2018
- ◯ 2017
- ◯ 2016
- ◯ 2015
- ◯ 2014
- ◯ 2013

ALUMNI'S FURTHER EDUCATION INFORMATION

8. *Further Education*
   - ◯ *Bachelor Degree*
   - ◯ *Master Degree*
   - ◯ *PhD*

9. *Academic Institution:* _____
10. *Program Name:* _____
11. *Year of graduation:* _____

PART B: WORK INFORMATION

12. Work status: *
Mark only one oval.
- ◯ employed
- ◯ self-employed (eg. online business, etc)
- ◯ further study
- ◯ unemployed

13. *Current Working Sector*: *
- ◯ *Government*
- ◯ *Private*
- ◯ *GLC*
- ◯ *Self Employed*

*14. Job Title (based on MASCO):** _____

15. Company Name and Address: *
_____
_____

16. Position: * _____
17. Salary: *
Mark only one oval.
- ◯ *RM1000 and below*
- ◯ *RM1001 - RM2000*
- ◯ *RM2001 - RM3000*
- ◯ *RM3001 - RM4000*
- ◯ *RM4001 - RM5000*
- ◯ *RM5001 and above*

18. *Name, Email dan Employer Address for contact:*
……

PART C: ALUMNI ACHIEVEMENT OF PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

C1: Technician in related field of study

PEO 1: *apply fundamental knowledge, understanding and technical skills of aquaculture to provide solution for aquaculture issues and challenges*

1. Are you working in a related technology field?

- ◯ *Yes*
- ◯ *No*

2. If yes, select the sector below: (Drop down choices)

- ◯ *Technology/ Engineering*
- ◯ *Education*
- ◯ *Information Technology/Computing*
- ◯ *Sales and marketing*
- ◯ *Transportation/ Logistic*
- ◯ *Defence/ Security*
- ◯ *Services*
- ◯ *Training/ Consultation*
- ◯ *Other: _____*

3. Starting position (Dropdown choices)

- ◯ *Technician*
- ◯ *Assistant Engineer*
- ◯ *Supervisor*
- ◯ *Other:_____*

_____

C2: Contributions to society

PEO2: *integrate values, attitudes, professionalism and social skills in engaging with society and stakeholders*

1. Are you a member of any professional body or regulatory body?

- ◯ *Yes*
- ◯ *No*

2. Have you ever practiced safety and health at your workplace? (e.g: personal protective equipment (PPE)?

- ◯ *Yes*
- ◯ *No*

3. Have you ever been involved in any community activities? (e.g: Committee member of any residential area, NGOs)

- ◯ *Yes*
- ◯ *No*

4. Have you attended any courses in technology and been certified?

- ◯ *Yes*
- ◯ *No*

C3: Enterprising, Communication and Leadership

PEO3: *adopts the roles of a leader and a team member, and communicates effectively provides scientific creative solutions for aquaculture problems*

1. *Are you involved in any form of business (including online/ part time/ full time)?*
   - ◯ *Yes*
   - ◯ *No*
2. *Do you have any experience in any of these activities? (eg. report writing / presentation / being a panel / speaker for a forum / communication via email)*
   - ◯ *Yes*
   - ◯ *No*
3. *Have you ever worked in group or team at your workplace/during your further studies?*
   - ◯ *Yes*
   - ◯ *No*
2. *Have you ever led a team or group at your workplace/during your further studies? (eg:demonstrate procedure / give instructions to colleague)*
   - ◯ *Yes*
   - ◯ *No*
3. *Are you interested to get involve in entrepreneurship?*
   - ◯ *Yes*
   - ◯ *No*
4. *5. If yes, what kind of business do you plan to join/ develop?*
   ……

C4: Career Advancement

PEO4: *engaged in activities to embark entrepreneurial skills for career advancement and innovatively assist to manage resources and information*

1. *Have* you *ever been involved in the research or development of any products/services/system/technical project? (Yes/No)*
   - ◯ *Ya*
   - ◯ *Tidak*

2. What is your achievement thus far?
Check all that apply.
- ☐ *Salary increment*
- ☐ *Own business*
- ☐ *Promoted to higher post*
- ☐ *Further studies*
- ☐ *Professional certification*
- ☐ *Other: _____*

3. Currently, are you furthering your study to a higher level than Diploma?
- ☐ *Yes*
- ☐ *No*

4.If yes, which institution are you currently studying at?
……..

5. *Do you have any professional certification related to your study?*
- ☐ *Yes*
- ☐ *No*

Thank you for spending your time to complete this questionnaire.

Lampiran 4C

LAPORAN KAJIAN PENCAPAIAN PEO PROGRAM

PEO ACHIEVEMENT REVIEW REPORT

1.0 Introduction

OBE is an educational process which is based on trying to achieve certain specified outcomes in terms of individual student learning. Thus, having decided what are the key things students should understand and be able to do or the qualities they should develop, both structures and curricula are designed to achieve those capabilities or qualities. The designing process involves restructuring of curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than accumulation of course credits.

In general, the OBE assessment includes three types of outcomes/objectives:

i. The Course Learning Outcome (CLO) - being assessed during semester
ii. The Programme Learning Outcome (PLO) - being assessed at the end of their four-year study and
iii. The Program Educational Objectives (PEO) - being assessed after 3-5 years of their graduation date.

The PEO are specific goals consistent with the mission and vision of the expressed interest of programme stakeholders describing expected achievements of graduates in their career and professional life after graduation. Criteria of good PEOs are such as distinctive, specific, measurable, achievable, result oriented, and having a time frame.

(Isikan nama institusi) Vision

To be a towering TVET institution globally.

(Isikan nama institusi) Mission

i. Producing quality, holistic and well-balanced TVET graduates with entrepreneurship in order to fulfil the needs of the nation.
ii. Developing and sustaining smart partnerships with relevant parties locally and internationally.
iii. To benefit society through education, research, and innovation.

1.2 Significance of Study

The PEO statement is more detailed, and it includes the department's vision and mission, as well as all eight MQF domains and seven MOHE GSA components. Figure 1.1 shows the flowchart of PEO development and review. PEO was created by a Curriculum Drafting Committee that was formed based on feedback from all stakeholders involved in meeting their needs. To satisfy their needs and desires, PEOs must make progress in an organised manner with the participation of stakeholders. Revised PEOs are also needed in relation to JPPKK's overall vision and mission, as well as its specific programme (Jabatan Pengajian Politeknik, 2013).

1.3 Objective of Study

To carry out this study, several objectives have been identified as below.

i. Addressing curriculum feedback requirements in terms of improving PEO program achievement.
ii. Discuss how to calculate the percentage of PEO achievement targets
iii. Discusses programme improvement and planning in terms of enhancing PEO, PLO, Graduate Employability, and Graduate on Time accomplishment for their respective programme.

2.0 DATA COLLECTION METHOD

This section describes the research methodologies and procedures used for the study carried out, as well as discussions on the design of the study, the development of interview questions and data analysis. The findings of this study are to outline the answers to the research questions, which are to determine whether students achieve all the PEOs. To answer the question of the study, the reviewers used Dichotomous question or Close-ended question to answer the PEO1-PEO4 Data analysis from Analysis Programme Educational Objective (PEO) (Pilot Test) (2019) as a pilot test result is carried out through the frequency distribution process which is to show frequency and percentage which is used as a key performance indicator (KPI) for the this study. The data obtained is analysed based on the achievement of each PEO. Each items that is answered ‘Yes’ will be counted as the PEO is achieved.

2.1 Study Design

For this study, the evaluation instruments were designed based on the objectives of the study as well as answering the research questions. The set of valuation instruments was divided into three parts i.e., Part A, B, and C. Part A is a section of respondents' demographic information containing only ten items divided into two categories, namely, background information and employment information. Methods of data analysis and interpretation for each PEO and PLO can be referenced in Table 2.1.

Table 2. 1
PEO mapping matrix table and study instruments

PEO 2019	PART	ITEM	METHODS OF ANALYSIS
PEO1	PART C1	3	Nominal data (frequency)- % only
PEO2	PART C2	4	Nominal data (frequency)- % only
PEO3	PART C3	5	Nominal data (frequency)- % only
PEO4	PART C4	4	Nominal data (frequency)- % only

2.0 RESULTS AND ANALYSIS DATA

This PEO review analysis study was developed based on two analytical methods, the first of which is data from the results of questionnaires for graduates of the electrical engineering department who graduated in (Isikan graduan pelajar yang terlibat. Cth: batch 2016 and 2017). The survey was prepared by (Isikan nama Jabatan terlibat/ Institusi) and was opened for responses in late 2020. Meanwhile, the second analysis data is the result of interviews by industry advisers for each program appointed by the department that was conducted by (Isikan nama Jabatan terlibat/ institusi).

2.1 Analysis of PEO of Questionnaire Method

Up to 2019, there were about 1329 total graduates Since the performance of the PEOs will only be counted for graduates with 3 to 5 years of working experience after graduation, thus data from the students that graduated in 2016 and 2017 are considered for the evaluation of the PEO's achievement. In total, there are about 779 graduates or alumni who are expected to have working experience in the engineering field (Unit Peperiksaaan (Isikan nama Institusi), 2019). Nonetheless, based on the data, only 200 respondents out of 779 graduates responded to the PEO's survey form. Table 3.1 shows the overall distribution of respondents by gender for f programme XXX.

Table 3. 1 Total respondent by gender

Programme	Male	Female	Total respondents	Total graduates
XXX	20	13	33	172

2.1.1 PEO1: *Technician in related field of study*

PEO 1: apply fundamental knowledge, understanding and technical skills of aquaculture to provide solution for aquaculture issues and challenges.

Based on the collection data shown in Table 3.2, the achievement of the PEOs were based on the key performance indicator of 2016 and 2017 of XXX graduates.

Table 3. 2 Percentage achievement of PEO1 for four programs

PEO CURRICULUM JUNE 2019	**Analysis PEO**	**Achievement (%)**	
		XXX	
		T	**A**
PEO1 apply fundamental knowledge, understanding and technical skills of aquaculture to provide solution for aquaculture issues and challenges	Working in the field of study	>50%	68%
	Working in other fields		16%
	Further studies or unemployed		16%

***T – Target, A – Achievement**

Overall, the percentage achievement for XXX programme has met the indicator target more than 50%. In fact, about 68% XXX graduates have been involved with work in the (isikan bidang) field, while others are working in other fields, further study and unemployed. The results indicate the strength of PEO1, in which the programme has successfully produced professional workforces, capable and competently working in the field.

2.1.2 PEO2: Contributions to society

PEO2: integrate values, attitudes, professionalism and social skills in engaging with society and stakeholders

Table 3.3 shows the result indicates the strength of PEO2, in which all programme have successfully performed the appropriate ethical responsibility.

Table 3. 3 Percentage achievement of PEO2 for four programme

PEO CURRICULUM JUNE 2019	**Analysis PEO**	Achievement (%)	
		XXX	
		T	A
PEO2: integrate values, attitudes, professionalism and social skills in engaging with society and stakeholders	*member of any professional body or regulatory body*	>50%	100%
	practiced safety and health at your workplace? (e.g: personal protective equipment (PPE)	>50%	100%
	involved in any community activities? (e.g: Committee member of any residential area, NGOs)	>50%	100%
	attended any courses in technology and been certified	>50%	100%

***T – Target, A – Achievement**

Indeed, the graduates recognized the importance of sharing their responsibility through engagement with the community, with more than 80% of batch 2016 and 2017 alumni from all programme having contributed to society with professional ethics and responsibilities. The result shows that XXX programme recorded 100% of graduates achieving PEO2. Overall, the percentage achievement PEO2 has met the indicator target more than the expectation.

2.1.3 PEO3: Enterprising, Communication and Leadership

PEO3: adopts the roles of a leader and a team member, and communicates effectively provides scientific creative solutions for aquaculture problems

Summary of the current graduate's employment involved in entrepreneurship and R&D activities respective to PEO3 is tabulated in Table 3.4.

Table 3. 4 Percentage achievement of PEO3 for four programme

PEO CURRICULUM JUNE 2019	**Analysis PEO**	**Achievement (%)**	
		XXX	
		T	**A**
PEO3 Engaging in enterprising activities that apply engineering knowledge and technical skills	*involved in any form of business (including online/ part time/ full time)*	>30%	79% 21%
	experience in any of these activities? (eg. report writing / presentation / being a panel / speaker for a forum / communication via email)		21%
	worked in group or team at your workplace/during your further studies		21%
	led a team or group at your workplace/during your further studies? (eg:demonstrate procedure / give instructions to colleague)		0%
	interested to get involve in entrepreneurship		

***T – Target, A – Achievement**

The results for the XXX programme, respectively, showed approximately 79%, 58%, 52%, and 71%, of graduates engaged in business opportunities and R&D activities. In terms of PEO3, the graduates have successfully participated in entrepreneurship activities that apply engineering knowledge and technical skills and show that they do not just work without engaging in any activity. Overall, PEO3 successfully achieved more than 30% achievement target

2.1.4 PEO4: Career Advancement

PEO4: engaged in activities to embark entrepreneurial skills for career advancement and innovatively assist to manage resources and information

As presented in Table 3.5, the result indicated percentage achievement of PEO4 for four programme is more than 80% achievement.

Table 3.5 Percentage achievement of PEO4 for four programme

PEO CURRICULUM JUNE 2019	**Analysis PEO**	**Achievement (%)**	
		XXX	
		T	**A**
PEO4 engaged in activities to embark entrepreneurial skills for career advancement and innovatively assist to manage resources and information	*involved in the research or development of any products/services/system/technical project*	>30%	100%
	Not achieved		0%
	furthering your study to a higher level than Diploma	>30%	100%
	professional certification related to your study	>30%	100%

***T – Target, A – Achievement**

Based on collected data, 85% of graduates from XXX programme achieve PEO4, which is either further study, self-employed, holding a senior position post and salary increment, involved in technical projects or involved in R&D and upgrading technical knowledge. Indeed, the graduates recognized the importance of engaging in activities to enhance knowledge for successful career advancement when averaged above 91-100% from programme XXX indicated that they are satisfactorily achieved by the batch 2016 and 2017 alumni within 3 years of graduating date. According to the data collected, the majority of working graduates receive a salary increment after three years of employment, while the rest get a promotion and get a better job.

4.0 DISCUSSION AND CONCLUSION

A survey of PEO (PEO1-PEO4) achievements for polytechnic programs offered at polytechnics was provided to graduates who have completed in 2016 and 2017. This data was taken in 2020 by graduates of XXX, (Isikan nama institusi) for the (Isikan nama program) The results of the analysis were compared to the department's KPI determined from the pilot test against the graduates in the June 2019 session.

The analysis found that PEO1 - practicing technician in the (Isikan nama bidang program) related field meets department KPIs of more than 50%.

Through the analysis of PEO2 - contributing to society with professional ethics and responsibilities found that the entire program had reached a departmental KPI percentage of over 50%. High percentage contributions to all four programs indicate that graduates are contributing to society with professional ethics and responsibilities. Respondents also suggested that in order to further strengthen the preparation of graduates to the world of industry, they should be given exposure to the form or format of industry reports as the initial preparation of students in preparing reports, especially in English reports. Additionally, graduates should have information about the professional body path and the opportunity to obtain a professional certificate through their respective fields.

PEO3 - engaging in enterprising activities that apply engineering knowledge and technical skills shows that the department's KPI setting is only 30% due to the characteristics of this PEO3 more to involve graduates in entrepreneurial or R&D activities in the industry. Analytical data shows that all programs have reached that percentage target.

Engaging in activities to enhance knowledge for successful career advancement of PEO4 shows that the data analysis results have met the department's KPI requirements of over 30%. The industry is in dire need of graduates who have best communication skills between students and other industry networking such as contractor, consultant, and client as added value to them in promotion. In addition, the importance of good work ethic and proper procedure should be applied to the student. They also need to be interested in the latest technology and installation.

5.0 REFERENCES

Jabatan Pengajian Politeknik. (2013). *Manual Pembangunan Kurikulum Program Pengajian Politeknik.* Putrajaya.

Jumlah Pelajar PPD Mengikut Semester, Jabatan dan Program. (2019). Unit Peperiksanaan (Rekod & Pensijilan). Politeknik Port Dickson.

Lampiran 4D

CONTOH INSTRUMEN KAJIAN PEO PROGRAM TTAC (SKALA LIKERT)

DIPLOMA PROGRAMMES BY POLYTECHNIC/ COMMUNITY COLLEGES
PROGRAMME EDUCATIONAL OBJECTIVE (PEO) SURVEY
FOR ALUMNI OF POLYTECHNIC/ COMMUNITY COLLEGES

To our respected polytechnic/community college alumni,

We are grateful for your participation in this Programme Educational Objective (PEO) Survey which is conducted to assess the success of the Outcome-Based Education (OBE) and the attainment of polytechnic/community college graduates.

This questionnaire will only take 10 minutes of your time. Please be assured that all information will be treated with the strictest confidentiality.

Findings from this survey will be used to improve the quality of the programmes in the Department of Polytechnic and Community College Education.

Thank you.

1.0 INTRODUCTION

This survey has 3 parts: A) Demography B) Employment information C) PEO Attainment

2.0 OBJECTIVE OF SURVEY

To obtain perceived alumni knowledge and skills applied in the workplace based on the PEO statements

3.0 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

These are broad statements that describe the career and professional achievements that the graduates should achieve, within 3 - 5 years of graduation.

PART A: DEMOGRAPHY

1. Name: *_____
2. Email: *_____
3. Phone No.: *_____

ALUMNI'S POLYTECHNIC EDUCATION INFORMATION

4. *Academic Institution*

Mark only one oval.

- ◯ PTSS
- ◯ POLIMAS
- ◯ PTSB
- ◯ PSP
- ◯ PUO
- ◯ PSAS
- ◯ PSA
- ◯ PSIS
- ◯ PKB
- ◯ PKT
- ◯ PSMZA
- ◯ POLISAS
- ◯ PPD
- ◯ PMM
- ◯ PMK
- ◯ PIS
- ◯ PMJ
- ◯ PMU
- ◯ PKS
- ◯ PKK

5. *Programme Name*

Mark only one oval.

- ◯ XXX
- ◯ XXX

6. *Year of Graduation*

Mark only one oval.

- ◯ 2018
- ◯ 2017
- ◯ 2016
- ◯ 2015
- ◯ 2014
- ◯ 2013

ALUMNI'S FURTHER EDUCATION INFORMATION

4. *Further Education*

- ◯ *Bachelor Degree,*

- *Master Degree,*
- *PhD*

5. *Academic Institution;* _____
6. *Program Name:*_____
7. *Year of graduation:*_____

PART B: WORK INFORMATION

12. Work status: *
Mark only one oval.
- employed (eg. working in a company etc.)
- self-employed (eg. online business, etc)
- further study
- unemployed

13. *Current Working Sector*: *
- *Government*
- *Private*
- *GLC*
- *Self Employed*

14. Job Title (based on MASCO): : *_____

15. Company Name and Address: : * ……..

……

16. Position: : * _____
17. Salary: *
Mark only one oval.
- *RM1000 and below*
- *RM1001 - RM2000*
- *RM2001 - RM3000*
- *RM3001 - RM4000*
- *RM4001 - RM5000*
- *RM5001 and above*

18. *Name, Email dan Employer Address for contact :*
……

PART C: PERCEIVED ALUMNI ACHIEVEMENT OF PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

As an alumni of the fill in the name of the programme and with reference to your career now, please provide your perceived achievement of the following PEO, according to the following scale:

Scale:
1 Very weak
2 Weak
3 Moderate
4 Good
5 Very Good

PEO statement and questions	***Alumni Achievement***				
	1	**2**	**3**	**4**	**5**
PEO 1: I am able to apply fundamental knowledge, understanding and technical skills of aquaculture to provide solution for aquaculture issues and challenges					
1. Apply basic knowledge of aquaculture farm production technology to the industry.					
2. Perform aquatic farming operation for aquaculture production.					
3. Perform good work ethics and moral behavior on handling the aquaculture facilities and system.					
PEO 2: I am able to integrate values, attitudes, professionalism and social skills in engaging with society and stakeholders					
4. Demonstrate responsibilities in the community.					
5. Display positive values and ethics in engaging with society					
6. Demonstrate accountable engagement with stateholders.					
PEO 3: I am able to adopts the roles of a leader and a team member, and communicates effectively provides scientific creative solutions for aquaculture problems					
7. Demonstrate effective communication as a leader or member of diverse teams.					

8. Display responsible leadership on analyzing aquaculture issues.					
9. Apply appropriate scientific approaches for aquaculture solutions.					
PEO 4: I am able to engage in activities to embark entrepreneurial skills for career advancement and innovatively assist to manage resources and information					
10. Demonstrate effective teamwork management in the aquaculture society.					
11. Perform lifelong learning skills for career enhancement					
12. Adopt entrepreneurial activities for self-skills development					
If you have any suggestion to change or modify any of the above listed Programme Educational Objectives, we are very grateful if you can propose it in the space provided below:					

Thank you for spending your time to complete this questionnaire.

Lampiran 4E

LAPORAN KAJIAN PENCAPAIAN OBJEKTIF PROGRAM (PEO) UNTUK PROGRAM XXXX DI POLITEKNIK/KOLEJ KOMUNITI

1.0 PENGENALAN

Kajian ini bertujuan untuk mengukur pencapaian Objektif Program (OP) / *Programme Educational Objectives* (PEO) untuk program XXXX di Politeknik/Kolej Komuniti. Kajian pengukuran pencapaian merupakan salah satu usaha untuk menjelaskan pelaksanaan penilaian PEO terkini. Di samping itu, melalui pelaporan dapatan kajian ini merupakan satu usaha penambahbaikan berterusan (CQI) dan pemantauan serta penyemakan program yang bersesuaian. Selain itu, dapatan data kajian ini akan mengukur pencapaian *Programme Educational Objective* (PEO) setelah 3 hingga 5 tahun pelajar bergraduat.

Seterusnya, melalui kajian ini pihak pengurusan dan akademik Politeknik/Kolej Komuniti akan melaksanakan penambahbaikan secara berkala atau membangunkan pelan penambahbaikan berasaskan prestasi berkaitan dengan sasaran dan kesesuaian pelan strategik atau pelan penambahbaikan dalam meningkatkan kualiti pendidikan tinggi.

Kajian pengukuran pencapaian objektif program (OP) atau *Programme Educational Objectives* (PEO) merupakan salah satu usaha Bahagian Kurikulum, Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) dan Kolej Komuniti untuk mencapai matlamat organisasi dalam menghasilkan graduan TVET yang diyakini dan menjadi rebutan majikan bagi menyumbang kepada pembangunan ekonomi negara seperti yang dinyatakan dalam objektif Teras 1 – Menghasilkan graduan TVET berkualiti dalam Pelan Strategik JPPKK 2018 – 2025. Penetapan KPI kajian ini adalah untuk mengukuhkan kerelevanan dan keresponsifan program pengajian XXXXX untuk memenuhi keperluan industri.

KPI **:** Tahap pencapaian graduan terhadap Objektif Program (OP) / *Programme Educational Objectives* (PEO)
Sasaran **:** 3.50
Tahap pencapaian: Tinggi

Definisi sasaran:

KPI kajian ini menyasarkan pengumpulan data untuk mengukur tahap pencapaian graduan terhadap Objektif Program (OP) / *Programme Educational Objectives* (PEO). Julat min yang digunakan sebagai pengukur adalah seperti berikut:

Julat min	Interpretasi skor min
1.00 – 1.89	Sangat rendah
1.90 – 2.69	Rendah
2.70 – 3.49	Sederhana
3.50 – 4.29	Tinggi
4.30 – 5.00	Sangat tinggi

Sumber: Zaihan & Hilmun (2016)

Responden **:** Respondan kajian setiap program adalah 10% graduan dari tahun 2016 hingga 2019

Sasaran tahap pencapaian PEO:

PEO 1	PEO 2	PEO 3
3.50	**3.50**	**3.50**

2.0 METODOLOGI

Reka bentuk kajian

Metodologi atau reka bentuk kajian pengukuran pencapaian PEO ini berbentuk tinjauan dengan mengambil pendekatan kuantitatif. Kaedah kuantitatif menggunakan analisis deskriptif kerana kajian ini dapat memperihal tentang sesuatu perkara dengan mengambil kira pelbagai aspek dan faktor yang perlu dinilai.

Sampel kajian

Responden atau sampel kajian ini terdiri daripada 32 orang graduan Politeknik/Kolej Komuniti untuk program XXXX yang telah tamat pengajian pada tahun 2016 sehingga 2019. Responden kajian ini ditentukan berdasarkan 10 peratus daripada keseluruhan populasi kajian. Teknik pensampelan rawak telah digunakan untuk memastikan responden kajian dapat mewakili populasi graduan di sesebuah kolej komuniti.

Instrumen kajian

Instrumen yang digunakan dalam kajian ini merupakan satu set soal selidik yang telah dibangunkan dengan melibatkan beberapa orang pakar daripada politeknik, kolej komuniti dan universiti awam. Pemurnian item soal selidik telah dilakukan untuk memastikan kesahan instrumen dalam mengukur apa yang ingin diukur dalam kajian ini. Instrumen kajian ini diukur dengan menggunakan skala *Likert*. Penggunaan skala *Likert* dipilih kerana mempunyai kebolehpercayaan dan kesahan yang tinggi (Chua, 2012). Skala *Likert* yang digunakan ialah:

1 Sangat Lemah
2 Lemah
3 Sederhana
4 Baik
5 Sangat Baik

Instrumen kajian ini telah diedarkan kepada responden dengan menggunakan aplikasi *Google Forms* untuk memudahkan proses pengumpulan data. Selanjutnya, dalam kajian ini, penentu nilai kebolehpercayaan intrumen kajian telah diperolehi melalui hasil data selepas soal selidik tersebut diberikan kepada responden. Suatu alat ukur itu boleh diterima pakai sekiranya nilai ketekalan dalaman yang diperoleh sekurang-kurangnya α=.50. Item-item yang bermutu dan signifikan sama ada secara keseluruhannya mahupun mengikut sub skala adalah item yang mempunyai nilai alpha (alpha if item deleted) kurang daripada nilai *standardized item alpha* (Sidek, 2005; Rozman & Ahmad Jazimin, 2016).

Berdasarkan Jadual 1, dapat dilihat di sini bahawa instrumen soal selidik ini mempunyai ketekalan dalaman yang baik kerana nilai *Alpha Cronbach* dalam mengukur tahap pencapaian objektif program (OP) program Diploma in Aquaculture di Politeknik/Kolej Komuniti dengan nilai α=.905.

Jadual 1

Nilai pekali kepercayaan Alpha Cronbach (α) n = 32

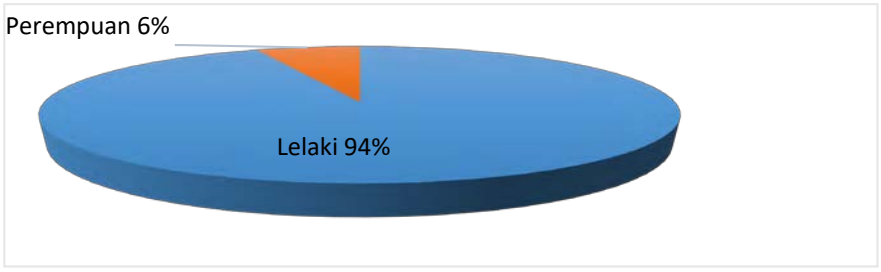
	Bilangan item	α
Objektif program (PEO)	9	.905

3.0 ANALISIS DAPATAN

A. Demografi dan maklumat latar belakang responden

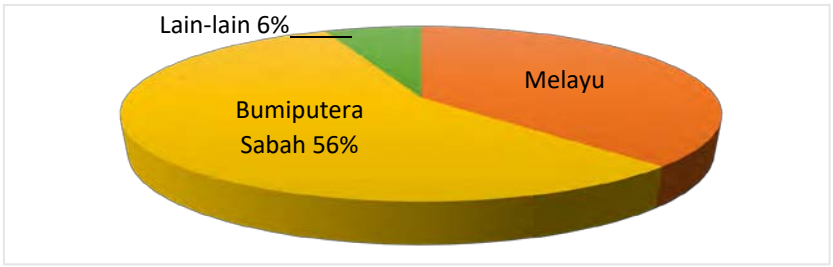
i. Jantina

Jantina	**Responden (*n*)**
Lelaki	30
Perempuan	2
Jumlah	**32**



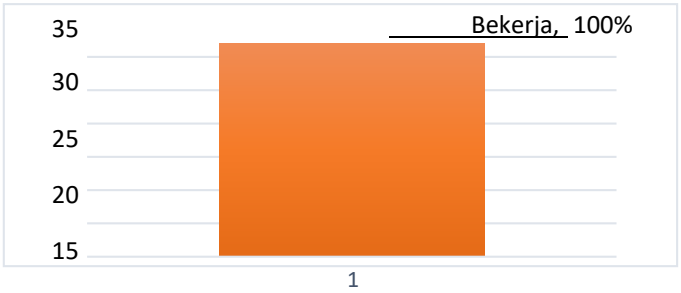
ii. Keturunan

Keturunan	**Responden (*n*)**
Melayu	12
Bumiputera Sabah	18
Lain-lain	2
Jumlah	**32**



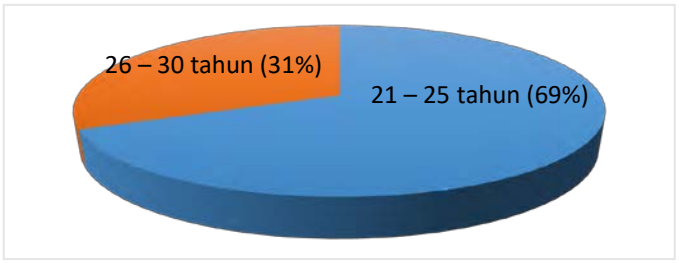
iii. Status bekerja

Status bekerja	Responden (*n*)
Bekerja	32
Jumlah	**32**



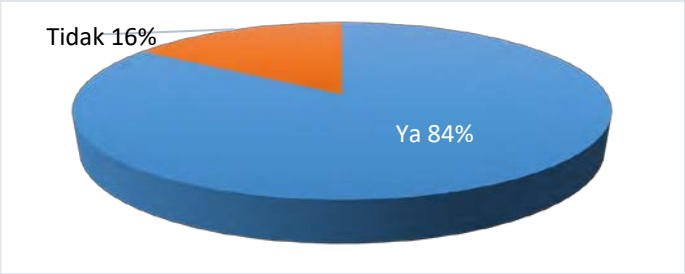
iv. Umur

Umur	Responden (*n*)
21 – 25 tahun	22
26 – 30 tahun	10
Jumlah	**32**



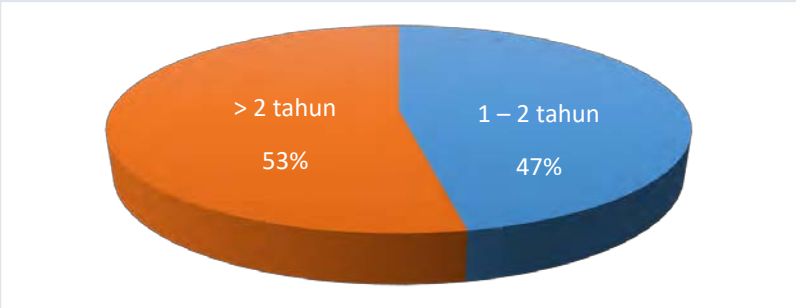
v. Bekerja mengikut bidang

Bekerja mengikut bidang	Responden (*n*)
Ya	27
Tidak	5
Jumlah	**32**



vi. Pengalaman bekerja

Tempoh pengalaman	Responden (*n*)
1 – 2 tahun	15
> 2 tahun	17
Jumlah	**32**



vii. Gaji

Purata gaji	Responden (*n*)
RM1,000.00 – RM2,000.00	24
> RM2,000.00	8
Jumlah	**32**

ANALISIS DATA

Analisis deskriptif

Analisis statistik deskriptif adalah statistik yang digunakan untuk menganalisis data dengan cara mendeskripsikan atau menggambarkan data yang telah terkumpul sebagaimana adanya tanpa bermaksud membuat kesimpulan yang berlaku untuk umum atau generalisasi. Data kajian dianalisis dengan menggunakan perisian statistik *Statistic Package for the Social Science* (SPSS v24.0). Melalui perisian SPSS ini, penyelidik mengaplikasi dapatan data bagi huraian dalam bentuk frekuensi, peratus serta min. Data yang diperoleh dianalisis menggunakan statistik deskriptif. Analisis markah min akan diinterpretasi merujuk Zaihan dan Hilmun (2016) seperti dalam Jadual 2.

Jadual 2
Interpretasi markah min

Julat min	Interpretasi markah min
1.00 – 1.89	Sangat rendah
1.90 – 2.69	Rendah
2.70 – 3.49	Sederhana
3.50 – 4.29	Tinggi
4.30 – 5.00	Sangat tinggi

Sumber: Zaihan & Hilmun (2016)

Objektif program (OP)

Kajian ini mempunyai empat objektif program (OP) atau *Programme Educational Objectives* (PEO) yang melibatkan:

The Diploma in YY should be able produce aquaculturist who are capable to:

PEO1: apply fundamental knowledge, understanding and technical skills of aquaculture to provide solution for aquaculture issues and challenges

PEO2: integrate values, attitudes, professionalism and social skills in engaging with society and stakeholders

PEO3: adopts the roles of a leader and a team member, and communicates effectively provides scientific creative solutions for aquaculture problems

PEO4: engaged in activities to embark entrepreneurial skills for career advancement and innovatively assist to manage resources and information

Tahap pencapaian OP / PEO 1

Dalam kajian ini, PEO 1 mempunyai tiga item soalan yang terkandung dalam instrumen kajian merangkumi pengetahuan teknikal dan kemahiran keusahawanan responden. Jadual 3 menunjukkan min dan sisihan piawai untuk PEO 1 yang melibatkan 32 orang responden.

Jadual 3

Min dan sisihan piawai PEO 1 (n = 32)

No. item	Penyataan item	Min	Sisihan piawai
S1	*Apply basic knowledge of aquaculture farm production technology to the industry.*	4.28	.683
S2	*Perform aquatic farming operation for aquaculture production.*	3.94	.716
S3	*Perform good work ethics and moral behavior on handling the aquaculture facilities and system.*	4.31	.644

Berdasarkan Jadual 3, item soalan untuk PEO 1 menunjukkan nilai min item soalan S1 iaitu 4.28 dengan sisihan piawai .683. Manakala dapatan data S2 menunjukkan min 3.94 dengan nilai sisihan piawai .716. Seterusnya, min untuk S3 adalah 4.31

dengan sisihan piawai .644. Dapatan data ini menunjukkan bahawa pencapaian responden dalam PEO 1 berada pada tahap yang tinggi.

Tahap pencapaian OP / PEO 2

Seterusnya, PEO 2 turut mempunyai tiga item soalan yang melibatkan kemahiran penyelesaian masalah dan pengurusan maklumat melalui pendekatan pembelajaran sepanjang hayat responden. Jadual 4 menunjukkan min dan sisihan piawai untuk PEO 2.

Jadual 4

Min dan sisihan piawai PEO 2 (n = 32)

No. item	Penyataan item	Min	Sisihan piawai
S4	*Demonstrate responsibilities in the community.*	4.34	.602
S5	*Display positive values and ethics in engaging with society.*	4.22	.659
S6	*Demonstrate accountable engagement with stateholders.*	4.16	.767

Min S4 dalam Jadual 4 menunjukkan nilai 4.34 dengan sisihan piawai .602. Selanjutnya, S5 menunjukkan nilai min 4.22 dengan sisihan piawai .659. Manakala dapatan data min S6 adalah 4.16 dan sisihan piawai .767. Data min ketiga-tiga item soalan ini menunjukkan responden mempunyai tahap pencapaian PEO 2 yang tinggi.

Tahap pencapaian OP / PEO 3

Selanjutnya, PEO 3 mempunyai tiga item soalan yang merangkumi kemahiran komunikasi responden melalui pendekatan etika kerja dan tanggungjawab sosial. Jadual 5 menunjukkan min dan sisihan piawai untuk PEO 3.

Jadual 5

Min dan sisihan piawai PEO 3 (n = 32)

No. item	Penyataan item	Min	Sisihan piawai
S7	*Demonstrate effective communication as a leader or member of diverse teams.*	4.13	.751
S8	*Display responsible leadership on analyzing aquaculture issues.*	4.19	.738
S9	*Apply appropriate scientific approaches for aquaculture solutions.*	4.31	.738

Berdasarkan Jadual 5, min S7 menunjukkan nilai 4.13 dengan sisihan piawai .751. Seterusnya, data min S8 ialah 4.19 dengan sisihan piawai .738. min S9 pula ialah 4.31 dan sisihan piawai .738. Dapatan data min turut menunjukkan pencapaian responden dalam PEO 3 adalah tinggi.

Tahap pencapaian OP / PEO 4

Selanjutnya, PEO 4 mempunyai tiga item soalan yang merangkumi kemahiran bekerja dalam kumpulan, kemahiran ilmu sepanjang hayat, kemahiran keusahawanan dan kemahiran peningkatan kerjaya responden. Jadual 5 menunjukkan min dan sisihan piawai untuk PEO 4.

Jadual 5

Min dan sisihan piawai PEO 4 (n = 32)

No. item	Penyataan item	Min	Sisihan piawai
S7	*Demonstrate effective teamwork management in the aquaculture society.*	4.13	.751
S8	*Perform lifelong learning skills for career enhancement*	4.19	.738
S9	*Adopt entrepreneurial activities for self-skills development*	4.31	.738

Berdasarkan Jadual 5, min S7 menunjukkan nilai 4.13 dengan sisihan piawai .751. Seterusnya, data min S8 ialah 4.19 dengan sisihan piawai .738. min S9 pula ialah 4.31 dan sisihan piawai .738. Dapatan data min turut menunjukkan pencapaian responden dalam PEO 3 adalah tinggi.

Tahap keseluruhan pencapaian OP / PEO

Analisis data untuk keseluruhan min untuk ketiga-tiga PEO dalam kajian ini menunjukkan tahap pencapaian responden terhadap PEO 1 hingga PEO 3 adalah tinggi.

Jadual 6

Min dan sisihan piawai keseluruhan (n = 32)

Objektif program (PEO)	Min	Sisihan piawai
PEO 1	4.17	.586
PEO 2	4.23	.523
PEO 3	4.20	.643
PEO 4	4.20	.643
Min keseluruhan	**4.21**	**.528**

Berdasarkan data dalam Jadual 6, dapat disimpulkan bahawa responden yang merupakan graduan program *XXXXX* Politeknik/Kolej Komuniti mempunyai tahap pencapaian objektif program yang tinggi dengan min keseluruhan 4.21 dan sisihan piawai .528. Justeru, dapatan analisis data ini telah mencapai KPI sasaran pengukuran pencapaian PEO kajian yang telah ditetapkan oleh Politeknik/Kolej Komuniti iaitu nilai min 3.50. Dapat dilihat di sini bahawa tahap pencapaian graduan program XXXXX di Politeknik/Kolej Komuniti terhadap Objektif Program (OP) / *Programme Educational Objectives* (PEO) adalah tinggi.

KESIMPULAN

Dapatan data kajian pengukuran pencapaian kesemua PEO program pengajian di Politeknik/Kolej Komuniti menunjukkan kesemua objektif kajian tercapai dengan min melebihi sasaran KPI 3.50 dengan tahap pencapaian pengukuran pencapaian objektif program (PEO) adalah tinggi. Justeru, hal ini menunjukkan bahawa Bahagian Kurikulum, JPPKK dan Politeknik/Kolej Komuniti telah memberi penekanan utama dalam keseimbangan penerapan dan penilaian aspek-aspek kemahiran dan kurikulum dalam menawarkan perkhidmatan pendidikan tinggi kepada para graduan program *XXXXX.* Lantaran itu, dapat dilihat bahawa dapatan data kajian ini amat penting kerana graduan merupakan salah satu pihak berkepentingan (*stakeholder*) yang berhak memperoleh pengetahuan, kemahiran teknikal dan kemahiran insaniah yang merupakan nilai tambah kepada seseorang pelajar semasa melanjutkan pengajian di kolej komuniti.

RUJUKAN

Chua, Y.P. (2012). *Mastering research methods*. Mcgraw-Hill Education, Shah Alam.

Rozman, S., & Ahmad Jazimin, J. (2016). Kesahan dan kebolehpercayaan soal selidik egogram analisis transaksional dalam kalangan pelajar sekolah menengah. *Jurnal PERKAMA*, (19), 67-82.

Zaihan, H. & Hilmun, M. (2016). Tahap efikasi dengan skor pemantauan pembelajaran dan pengajaran pensyarah di Politeknik Melaka. *Politeknik & Kolej Komuniti Journal of Social Sciences and Humanities*. 1(1), 71-80.

https://www.researchgate.net/publication/301731490_kesahan_dan_kebolehpercayaan_soal_selidik_egogram_analisis_transaksional_dalam_kalangan_pelajar_sekolah_menengah. Diperoleh pada 15 Mac 2021.

http://myjms.mohe.gov.my/index.php/PMJSSH/article/view/1208. Diperoleh pada 4 Februari 2021.

KEMENTERIAN PENGAJIAN TINGGI

GARIS PANDUAN PELAKSANAAN KAJIAN PENCAPAIAN PEO

EDISI 2021
NO ISBN: 978967904176

BAHAGIAN KURIKULUM (BK)
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI (JPPKK)
KEMENTERIAN PENGAJIAN TINGGI (KPT)

TERIMA
04 JUL 2024
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI
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Tel : 03-88919000
Faks : 03-88919056

Ruj. Kami : JPPKK.BK. 600-1/3/2 Jld.7 (5)
Tarikh : 02 Julai 2024

Timbalan Pengarah (Akademik)
Pegawai Kualiti
Ketua Program

Melalui:
Pengarah
(Seperti senarai edaran di Lampiran 1)

YBrs. Ts./Dr./ Tuan/ Puan,

SURAT PEKELILING KURIKULUM BIL. 4 TAHUN 2024 BAGI PELAKSANAAN KURIKULUM SESI I 2024/2025 PROGRAM PENGAJIAN PERINGKAT DIPLOMA POLITEKNIK KEMENTERIAN PENDIDIKAN TINGGI

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Mesyuarat Lembaga Kurikulum Kursus Pengajian dan Program Latihan di Politeknik (MLK) Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) Bil. 1/2024 bertarikh 6 Jun 2024 telah meluluskan empat puluh (40) program pengajian peringkat diploma politeknik bersama-sama dengan kursus-kursus Pengajian Am, Matematik, Sains, Komputer dan Matapelajaran Umum (MPU). Maklumat program yang terlibat adalah seperti di Lampiran 2.

3. Sehubungan dengan itu, penggunaan dokumen kurikulum bermula Sesi I 2024/2025 tersebut adalah seperti ketetapan berikut:

i. Pelajar baharu Semester 1 akan mengguna pakai dokumen kurikulum versi Baharu yang diluluskan ini bermula Sesi I 2024/2025.
ii. Pelajar kohort Semester 2 dan ke atas akan mengguna pakai dokumen kurikulum versi terdahulu yang berkuatkuasa sehingga tamat pengajian.

4. Justeru, **penggunaan dokumen kurikulum ini berkuatkuasa pada Sesi I 2024/2025**. Dokumen kurikulum tersebut akan dimuat naik secara berperingkat dan boleh dimuat turun melalui **laman portal CIDOS (http://portal.cidos.edu.my) mulai 5 Julai 2024.**

5. Sebagai dokumen terhad, maka tatacara pengendalian dokumen yang perlu dipatuhi adalah seperti tersebut:

i. Dokumen ini diklasifikasikan sebagai **DOKUMEN TERHAD/*RESTRICTED*** dan pengedarannya adalah terhad kepada tenaga pengajar di institusi sahaja. Edaran *softcopy* dan *hardcopy* adalah tidak dibenarkan kepada pihak luar.

ii. Edaran salinan *(softcopy atau hardcopy)* perlu disahkan oleh pegawai kualiti institusi.

iii Pegawai yang bertanggungjawab perlu memastikan proses kawalan dokumen dipatuhi dan mengikut sistem pengurusan kualiti institusi masing-masing.

6 Sebarang pertanyaan dan maklumat lanjut berkaitan perkara ini boleh diajukan kepada pegawai di Bahagian Kurikulum seperti berikut:

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ii.	Dr. Rohaniah binti Mohd Nor	rohaniah.mohdnor@mohe.gov.my	03-88919020
iii.	Dr. Zanatul Shima binti Aminuddin	zanatul.shima@mohe.gov.my	03-88919125

Perhatian dan kerjasama daripada pihak YBrs.Ts./Dr./tuan/puan berhubung perkara ini amat dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DR. ZAMZAM BIN MOHD WALID)
Pengarah
Bahagian Kurikulum
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Tinggi

s.k.:
1. Pengarah Bahagian Instruksional dan Pembelajaran Digital
2. Pengarah Bahagian Peperiksaan dan Penilaian
3. Pengarah Bahagian Governan dan Kecemerlangan

Jabatan Pendidikan Politeknik dan Kolej Komuniti

Lampiran 1

SENARAI EDARAN

BIL.	PROGRAM	MELALUI PENGARAH
1.	DIPLOMA KEJURUTERAAN ELEKTRIK (KECEKAPAN TENAGA)/ *DIPLOMA IN ELECTRICAL ENGINEERING (ENERGY EFFICIENCY)* (DEQ)	POLITEKNIK PORT DICKSON
2.	DIPLOMA KEJURUTERAAN ELEKTRIK/ *DIPLOMA IN ELECTRICAL ENGINEERING* (DET)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KOTA BHARU 3. POLITEKNIK PORT DICKSON 4. POLITEKNIK MERLIMAU 5. POLITEKNIK SULTAN AZLAN SHAH 6. POLITEKNIK TUANKU SULTANAH BAHIYAH 7. POLITEKNIK MERSING
3.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN ELEKTRONIK/ *DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING* (DEE)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK KOTA BHARU 5. POLITEKNIK KUCHING SARAWAK 6. POLITEKNIK KOTA KINABALU 7. POLITEKNIK IBRAHIM SULTAN 8. POLITEKNIK SEBERANG PERAI 9. POLITEKNIK KUALA TERENGGANU. 10. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 11. POLITEKNIK TUANKU SULTANAH BAHIYAH 12. POLITEKNIK MUKAH SARAWAK 13. POLITEKNIK MERSING
4.	DIPLOMA KEJURUTERAAN ELEKTRIK (TENAGA HIJAU)/ *DIPLOMA IN ELECTRICAL ENGINEERING (GREEN ENERGY)* (DEG)	POLITEKNIK PORT DICKSON

Lampiran 1

BIL.	PROGRAM	MELALUI PENGARAH
5.	DIPLOMA KEJURUTERAAN ELEKTRONIK(KOMUNIKASI)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMMUNICATION)* (DEP)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK KOTA BHARU 5. POLITEKNIK KUCHING SARAWAK 6. POLITEKNIK PORT DICKSON 7. POLITEKNIK KOTA KINABALU 8. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 9. POLITEKNIK IBRAHIM SULTAN 10. POLITEKNIK SEBERANG PERAI 11. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 12. POLITEKNIK MERLIMAU 13. POLITEKNIK SULTAN AZLAN SHAH 14. POLITEKNIK TUANKU SULTANAH BAHIYAH 15. POLITEKNIK SULTAN IDRIS SHAH 16. POLITEKNIK TUANKU SYED SIRAJUDDIN 17. POLITEKNIK MUKAH SARAWAK
6.	DIPLOMA KEJURUTERAAN ELEKTRONIK(PERUBATAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (MEDICAL)* (DEU)	POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
7.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KAWALAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (CONTROL)* (DJK)	1. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 2. POLITEKNIK IBRAHIM SULTAN 3. POLITEKNIK MELAKA

Lampiran 1

BIL.	PROGRAM	MELALUI PENGARAH
8.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KOMPUTER)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMPUTER)* (DTK)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK PORT DICKSON 4. POLITEKNIK KOTA KINABALU 5. POLITEKNIK SEBERANG PERAI 6. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 7. POLITEKNIK MERLIMAU 8. POLITEKNIK SULTAN AZLAN SHAH 9. POLITEKNIK TUANKU SULTANAH BAHIYAH 10. POLITEKNIK SULTAN IDRIS SHAH 11. POLITEKNIK TUANKU SYED SIRAJUDDIN
9.	DIPLOMA KEJURUTERAAN AWAM/ *DIPLOMA IN CIVIL ENGINEERING* (DKA)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK KOTA BHARU 5. POLITEKNIK KUCHING SARAWAK 6. POLITEKNIK PORT DICKSON 7. POLITEKNIK KOTA KINABALU 8. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 9. POLITEKNIK MELAKA 10. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 11. POLITEKNIK MERLIMAU 12. POLITEKNIK SULTAN AZLAN SHAH 13. POLITEKNIK TUANKU SULTANAH BAHIYAH 14. POLITEKNIK SULTAN IDRIS SHAH 15. POLITEKNIK MUKAH SARAWAK

Lampiran 1

BIL.	PROGRAM	INSTITUSI
10.	DIPLOMA UKUR BAHAN/ *DIPLOMA IN QUANTITY SURVEYING* (DUB)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KOTA BHARU 3. POLITEKNIK KOTA KINABALU 4. POLITEKNIK SULTAN AZLAN SHAH
11.	DIPLOMA KEJURUTERAAN ALAM SEKITAR/ *DIPLOMA IN ENVIRONMENTAL ENGINEERING* (DAS)	POLITEKNIK SULTAN IDRIS SHAH
12.	DIPLOMA KEJURUTERAAN PERKHIDMATAN BANGUNAN/ *DIPLOMA IN BUILDING SERVICES ENGINEERING* (DPB)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KUCHING SARAWAK 3. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 4. POLITEKNIK SULTAN AZLAN SHAH
13.	DIPLOMA SENIBINA/ *DIPLOMA IN ARCHITECTURE* (DSB)	1. POLITEKNIK UNGKU OMAR (POLITEKNIK PREMIER) 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 4. POLITEKNIK PORT DICKSON 5. POLITEKNIK MERLIMAU 6. POLITEKNIK SULTAN IDRIS SHAH
14.	DIPLOMA TEKNOLOGI BERASASKAN KAYU/ *DIPLOMA IN WOOD-BASEDTECHNOLOGY* (DBK)	1. POLITEKNIK KOTA KINABALU 2. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
15.	DIPLOMA PERANCANGAN BANDAR DAN WILAYAH/ *DIPLOMA IN TOWN AND REGIONAL PLANNING* (DPW)	POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH

Lampiran 1

BIL.	PROGRAM	INSTITUSI
16.	DIPLOMA GEOMATIK/ *DIPLOMA IN GEOMATIC* (DGU)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK KUCHING SARAWAK 4. POLITEKNIK MERLIMAU 5. POLITEKNIK TUANKU SULTANAH BAHIYAH
17.	DIPLOMA KEJURUTERAAN PENYENGGARAAN PESAWAT/ *DIPLOMA ENGINEERING IN AIRCRAFT MAINTENANCE* (DAM)	POLITEKNIK BANTING
18.	DIPLOMA KEJURUTERAAN MEKANIKAL/ *DIPLOMA IN MECHANICAL ENGINEERING* (DKM)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK KOTA BHARU 4. POLITEKNIK KUCHING SARAWAK 5. POLITEKNIK PORT DICKSON 6. POLITEKNIK KOTA KINABALU 7. POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH 8. POLITEKNIK IBRAHIM SULTAN 9. POLITEKNIK SEBERANG PERAI 10. POLITEKNIK MELAKA 11. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 12. POLITEKNIK MERLIMAU 13. POLITEKNIK SULTAN AZLAN SHAH 14. POLITEKNIK TUANKU SULTANAH BAHIYAH 15. POLITEKNIK TUANKU SYED SIRAJUDDIN 16. POLITEKNIK MUKAH SARAWAK 17. POLITEKNIK NILAI 18. POLITEKNIK BANTING

Lampiran 1

BIL.	PROGRAM	INSTITUSI
19.	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMASI)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMATION)* (DMA)	POLITEKNIK MUADZAM SHAH
20	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMOTIF)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE)* (DAD)	1. POLITEKNIK UNGKU OMAR (POLITEKNIK PREMIER) 2. POLITEKNIK SULTAN HAJI AHMAD SHAH 3. POLITEKNIK KOTA BHARU 4. POLITEKNIK KUCHING SARAWAK 5. POLITEKNIK PORT DICKSON 6. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 7. POLITEKNIK SULTAN AZLAN SHAH
21.	DIPLOMA KEJURUTERAAN MEKANIKAL (BAHAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MATERIAL)* (DMB)	POLITEKNIK IBRAHIM SULTAN
22.	DIPLOMA KEJURUTERAAN MEKANIKAL (PEMBUATAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)* (DTP)	1. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 2. POLITEKNIK KUCHING SARAWAK 3. POLITEKNIK PORT DICKSON 4. POLITEKNIK KOTA KINABALU 5. POLITEKNIK IBRAHIM SULTAN (POLITEKNIK PREMIER) 6. POLITEKNIK SEBERANG PERAI 7. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 8. POLITEKNIK MERLIMAU 9. POLITEKNIK SULTAN AZLAN SHAH 10. POLITEKNIK TUANKU SULTANAH BAHIYAH 11. POLITEKNIK MUADZAM SHAH 12. POLITEKNIK BANTING

Lampiran 1

BIL.	PROGRAM	INSTITUSI
23.	DIPLOMA KEJURUTERAAN MEKANIKAL (PENYAMANAN UDARA DAN PENYEJUKBEKUAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AIR CONDITIONING AND REFRIGERATION)* (DPU)	1. POLITEKNIK UNGKU OMAR 2. POLITEKNIK KUCHING SARAWAK
24.	DIPLOMA KEJURUTERAAN MEKANIKAL (PERTANIAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AGRICULTURAL)* (DPT)	POLITEKNIK KOTA BHARU
25.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PEMBUATAN AUTOMOTIF)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE MANUFACTURING DESIGN)* (DRA)	POLITEKNIK MUADZAM SHAH
26.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PRODUK)/ *DIPLOMA IN MECHANICAL ENGINEERING (PRODUCT DESIGN)* (DRP)	POLITEKNIK MUADZAM SHAH
27.	DIPLOMA KEJURUTERAAN MEKANIKAL (PETROKIMIA)/ *DIPLOMA IN MECHANICAL ENGINEERING (PETROCHEMICAL)* (DPC)	POLITEKNIK TUN SYED NASIR SYED ISMAIL

Lampiran 1

BIL.	PROGRAM	INSTITUSI
28.	DIPLOMA KEJURUTERAAN MEKATRONIK/ *DIPLOMA IN MECHATRONICS ENGINEERING* (DEM)	1. POLITEKNIK UNGKU OMAR (POLITEKNIK PREMIER) 2. POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH 3. POLITEKNIK KOTA BHARU 4. POLITEKNIK PORT DICKSON 5. POLITEKNIK KOTA KINABALU 6. POLITEKNIK IBRAHIM SULTAN (POLITEKNIK PREMIER) 7. POLITEKNIK SULTAN MIZAN ZAINAL ABIDIN 8. POLITEKNIK MERLIMAU 9. POLITEKNIK SULTAN AZLAN SHAH 10. POLITEKNIK TUANKU SULTANAH BAHIYAH 11. POLITEKNIK NILAI
29.	DIPLOMA KEJURUTERAAN PERKAPALAN/ *DIPLOMA IN MARINE ENGINEERING* (DKP)	POLITEKNIK UNGKU OMAR
30.	DIPLOMA KEJURUTERAAN PROSES (PETROKIMIA)/ *DIPLOMA IN PROCESS ENGINEERING (PETROCHEMICAL)* (DPE)	1. POLITEKNIK KUCHING SARAWAK 2. POLITEKNIK TUN SYED NASIR SYED ISMAIL
31.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN INSTRUMENTASI/ *DIPLOMA IN ELECTRICAL AND INSTRUMENTATION ENGINEERING* (DEI)	POLITEKNIK TUN SYED NASIR SYED ISMAIL
32.	DIPLOMA KEJURUTERAN KIMIA/ *DIPLOMA IN CHEMICAL ENGINEERING* (DCE)	POLITEKNIK TUN SYED NASIR SYED ISMAIL
33.	DIPLOMA SENIBINA KAPAL/ *DIPLOMA IN NAVAL ARCHITECTURE* (DNA)	POLITEKNIK BAGAN DATUK

Lampiran 1

BIL.	PROGRAM	INSTITUSI
34.	DIPLOMA TEKNOLOGI KEJURUTERAAN PEMBINAAN MARIN/ *DIPLOMA IN MARINE CONSTRUCTION ENGINEERING TECHNOLOGY* (DSC)	POLITEKNIK BAGAN DATUK
35.	DIPLOMA TEKNOLOGI KEJURUTERAAN ELEKTRIK MARIN/ *DIPLOMA IN MARINE ELECTRICAL ENGINEERING TECHNOLOGY* (DSE)	POLITEKNIK BAGAN DATUK
36.	DIPLOMA REKA BENTUK FESYEN/ *DIPLOMA IN FASHION DESIGN* (DRF)	POLITEKNIK IBRAHIM SULTAN
37.	DIPLOMA TEKNOLOGI MEDIA CETAK/ *DIPLOMA IN PRINT MEDIA TECHNOLOGY* (DMC)	POLITEKNIK MUADZAM SHAH
38.	DIPLOMA REKA BENTUK GRAFIK/ *DIPLOMA IN GRAPHIC DESIGN* (DRG)	1. POLITEKNIK IBRAHIM SULTAN 2. POLITEKNIK MUADZAM SHAH 3. POLITEKNIK BALIK PULAU
39.	DIPLOMA PERKHIDMATAN MAKANAN AMALAN HALAL/ *DIPLOMA IN FOODSERVICE HALAL PRACTICE* (DHF)	1. POLITEKNIK MERLIMAU 2. POLITEKNIK SULTAN IDRIS SHAH 3. POLITEKNIK TUANKU SYED SIRAJUDDIN 4. POLITEKNIK METRO KUANTAN
40.	DIPLOMA SENI KULINARI/ *DIPLOMA IN CULINARY ARTS* (DCC)	POLITEKNIK MERLIMAU

Lampiran 2

SENARAI PROGRAM

BIL.	PROGRAM/KURSUS	KOD PROGRAM
1.	DIPLOMA KEJURUTERAAN ELEKTRIK (KECEKAPAN TENAGA)/ *DIPLOMA IN ELECTRICAL ENGINEERING (ENERGY EFFICIENCY)*	DEQ
2.	DIPLOMA KEJURUTERAAN ELEKTRIK/ *DIPLOMA IN ELECTRICAL ENGINEERING*	DET
3.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN ELEKTRONIK/ *DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING*	DEE
4.	DIPLOMA KEJURUTERAAN ELEKTRIK (TENAGA HIJAU)/ *DIPLOMA IN ELECTRICAL ENGINEERING (GREEN ENERGY)*	DEG
5.	DIPLOMA KEJURUTERAAN ELEKTRONIK(KOMUNIKASI)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMMUNICATION)*	DEP
6.	DIPLOMA KEJURUTERAAN ELEKTRONIK(PERUBATAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (MEDICAL)*	DEU
7.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KAWALAN)/ *DIPLOMA IN ELECTRONIC ENGINEERING (CONTROL)*	DJK
8.	DIPLOMA KEJURUTERAAN ELEKTRONIK (KOMPUTER)/ *DIPLOMA IN ELECTRONIC ENGINEERING (COMPUTER)*	DTK
9.	DIPLOMA KEJURUTERAAN AWAM/ *DIPLOMA IN CIVIL ENGINEERING*	DKA
10.	DIPLOMA UKUR BAHAN/ *DIPLOMA IN QUANTITY SURVEYING*	DUB
11.	DIPLOMA KEJURUTERAAN ALAM SEKITAR/ *DIPLOMA IN ENVIRONMENTAL ENGINEERING*	DAS
12.	DIPLOMA KEJURUTERAAN PERKHIDMATAN BANGUNAN/ *DIPLOMA IN BUILDING SERVICES ENGINEERING*	DPB
13.	DIPLOMA SENIBINA/ *DIPLOMA IN ARCHITECTURE*	DSB

Lampiran 2

BIL.	PROGRAM/KURSUS	KOD PROGRAM
14.	DIPLOMA TEKNOLOGI BERASASKAN KAYU/ *DIPLOMA IN WOOD-BASEDTECHNOLOGY*	DBK
15.	DIPLOMA PERANCANGAN BANDAR DAN WILAYAH/ *DIPLOMA IN TOWN AND REGIONAL PLANNING*	DPW
16.	DIPLOMA GEOMATIK/ *DIPLOMA IN GEOMATIC*	DGU
17.	DIPLOMA KEJURUTERAAN PENYENGGARAAN PESAWAT/ *DIPLOMA ENGINEERING IN AIRCRAFT MAINTENANCE*	DAM
18.	DIPLOMA KEJURUTERAAN MEKANIKAL/ *DIPLOMA IN MECHANICAL ENGINEERING*	DKM
19.	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMASI)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMATION)*	DMA
20.	DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMOTIF)/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE)*	DMF
21.	DIPLOMA KEJURUTERAAN MEKANIKAL (BAHAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MATERIAL)*	DMB
22.	DIPLOMA KEJURUTERAAN MEKANIKAL (PEMBUATAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)*	DMP
23.	DIPLOMA KEJURUTERAAN MEKANIKAL (PENYAMANAN UDARA DAN PENYEJUKBEKUAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AIR CONDITIONING AND REFRIGERATION)*	DPU
24.	DIPLOMA KEJURUTERAAN MEKANIKAL (PERTANIAN)/ *DIPLOMA IN MECHANICAL ENGINEERING (AGRICULTURAL)*	DPT
25.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PEMBUATAN AUTOMOTIF/ *DIPLOMA IN MECHANICAL ENGINEERING (AUTOMOTIVE MANUFACTURING DESIGN)*	DRA
26.	DIPLOMA KEJURUTERAAN MEKANIKAL (REKABENTUK PRODUK)/ *DIPLOMA IN MECHANICAL ENGINEERING (PRODUCT DESIGN)*	DRP
27.	DIPLOMA KEJURUTERAAN MEKANIKAL (PETROKIMIA)/ *DIPLOMA IN MECHANICAL ENGINEERING (PETROCHEMICAL)*	DPC

Lampiran 2

BIL.	PROGRAM/KURSUS	KOD PROGRAM
28.	DIPLOMA KEJURUTERAAN MEKATRONIK/ *DIPLOMA IN MECHATRONICS ENGINEERING*	DEM
29.	DIPLOMA KEJURUTERAAN PERKAPALAN/ *DIPLOMA IN MARINE ENGINEERING*	DKP
30.	DIPLOMA KEJURUTERAAN PROSES (PETROKIMIA)/ *DIPLOMA IN PROCESS ENGINEERING (PETROCHEMICAL)*	DPE
31.	DIPLOMA KEJURUTERAAN ELEKTRIK DAN INSTRUMENTASI/ *DIPLOMA IN ELECTRICAL AND INSTRUMENTATION ENGINEERING*	DEI
32.	DIPLOMA KEJURUTERAN KIMIA/ *DIPLOMA IN CHEMICAL ENGINEERING*	DCE
33.	DIPLOMA SENIBINA KAPAL/ *DIPLOMA IN NAVAL ARCHITECTURE*	DNA
34.	DIPLOMA TEKNOLOGI KEJURUTERAAN PEMBINAAN MARIN/ *DIPLOMA IN MARINE CONSTRUCTION ENGINEERING TECHNOLOGY*	DSC
35.	DIPLOMA TEKNOLOGI KEJURUTERAAN ELEKTRIK MARIN/ *DIPLOMA IN MARINE ELECTRICAL ENGINEERING TECHNOLOGY*	DSE
36.	DIPLOMA REKA BENTUK FESYEN/ *DIPLOMA IN FASHION DESIGN*	DRF
37.	DIPLOMA TEKNOLOGI MEDIA CETAK/ *DIPLOMA IN PRINT MEDIA TECHNOLOGY*	DMC
38.	DIPLOMA REKA BENTUK GRAFIK/ *DIPLOMA IN GRAPHIC DESIGN*	DRG
39.	DIPLOMA PERKHIDMATAN MAKANAN AMALAN HALAL/ DIPLOMA IN FOODSERVICE HALAL PRACTICE	DHF
40.	DIPLOMA SENI KULINARI/ DIPLOMA IN CULINARY ARTS	DCC
41.	KURSUS PENGAJIAN UMUM DIPLOMA	-

MINIT CURAI MESYUARAT PROGRAM DKM
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PERKARA	Mesyuarat Penetapan KPI PEO Kurikulum Baharu	**TARIKH**	22/8/2025 SELASA
TEMPAT	Bilik Mesyuarat Jkm	**MASA**	8.30 PAGI

PENGERUSI:

MUHAMAD FAIZ BIN ABDULLAH
KETUA JABATAN

KEHADIRAN:

1. MOHD SHARIZAN BIN MOHD SHARIF - KPMA
2. MUHAMMAD HANIFF BIN SELAMAT - KPDMP
3. NURUS SADIQIN BINTI ABDUL RAZAK KHAN - KPKMK
4. NORSA'AIDAH BINTI SA'AID – K2
5. MOHD ZULKARNAEN BIN IBRAHIM – PEGAWAI KUALITI JABATAN

BIL	PERKARA	MAKLUMAN / TINDAKAN
1.	Bagi kurikulum 2024, penetapan KPI PEO boleh diambilkira daripada kurikulum 2019 sebagai penunjuk prestasi.	Semua Pensyarah
2.	Mesyuarat memutuskan bahawa cadangan KPI PEO kurikulum 2024 baharu bagi program DKM adalah seperti berikut : I. 45 % - Proficient with industry-relevant knowledge and skills in mechanical engineering field II. 35% - Engaging on lifelong and continuous learning to enhance knowledge and skills III. 35& - Acquire with entrepreneurial skills and mindset in the real working environment IV. 15% - Establish links with society and players in the industry	
3.	Cadangan KPI PEO ini akan dibentangkan di dalam mesyuarat Penasihat Industri (IAC) yang akan diadakan pada bulan November nanti.	

Disediakan Oleh :

MOHD SHARIZAN BIN MOHD SHARIF
Ketua Program Mekanikal Am
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

MOHD SHARIZAN BIN MOHD SHARIF
Ketua Program DKM

Disahkan Oleh :

MUHAMAD FAIZ BIN ABDULLAH
Ketua Jabatan Mekanikal

CURRICULUM DEVELOPEMENT COMMITTEE (CDC)

List of Curriculum Development Committee
Diploma in Mechanical Engineering
2024

BIL	NAMA PENGGUBAL	INSTITUSI
1	MUHD SHARIDAN B MOHD SHARIF	PSP
2	MUHAMMAD NAJIB BIN RAMLI	PSP
3	NUR RAFIQAH BINTI HJ.ROSLY	PMK
4	SITI KHALIJAH BINTI SHUIB	PMK
5	SHARUDIN BIN HASSAN	PSAS
6	ASRUL AFFENDI BIN AHMAD ROPAI	PSAS
7	ANISAH BINTI KAMARUDIN	PSAS
8	SARIMAH BINTI ATAN	PSAS
9	NOORHIDAYAH BINTI RAMLI	PSAS
10	ZAHARINA BINTI ABU HASSAN	PSAS
11	AIDA HARYATI BINTI MUDA	POLISAS
12	MASLIANA BINTI IDRIS	POLISAS
13	AZLI BIN OMAR	POLISAS
14	ROSPI BIN MAT HUSIN	POLISAS
15	MAD HAFIS BIN MOHAMED YUSOF	PPD
16	SHAIFATULNA'IM BT SHAMSUDDIN	PPD
17	MOHD ZAIRUNIZAM BIN UMAR	PTSS
18	NUR ISMALINA BINTI HARIS	PTSS
19	MOHD AZAMRI BIN KANDARI	PMM
20	HASNIAH BINTI ABDUL HADI	PMM
21	DR. MAZYAN BINTI YAHAYA	PNS
22	NOOR AZLINA BINTI AHMAD	PNS
23	MUHAMMAD BIN MUSTAPHA	PIS
24	MOHD NAIM BIN HAMID	PIS
25	MUHAMAD NOR BIN NODIN	PIS
26	Ts. AHMAD SOBRI BIN AHMAD HUDIN	PKK
27	MOHAMMAD FIRDAUS BIN MOHAMMED AZMI	PKK
28	MUHAMMAD ARIEEF BIN HUSSAIN	PUO
29	YEOH POH SEE	PUO
30	MOHD NAZRI BIN MOHD SABRI	PUO
31	AKMAL BIN ABDUL RAHMAN	PKB
32	BAHARIN BIN CHE AJID	PKB
33	DR HARTINY BIN KAHAR	PBS
34	ASIAH BINTI YUNOS	PBS
35	ISMAIL BIN LIAS	PBS
36	FADIL BIN AZIZ	PKS
37	LIYANA BINTI NORIZAN	PKS
38	NAZRATULHUDA BT AWANG @ HASHIM	PSA
39	MUHAMMAD FAIZ BIN ABDULLAH	PSA
40	MOHD ZULKARNAEN BIN MOHD IBRAHIM	PSA
41	NOORAZLAN B.MOHD SAMSUDDIN	PSA
42	NORLIDAWATI BINTI MOHAMAD	PSA
43	RASIDAH BINTI RASID	PSMZA

44	WAN MOHD RIZAIRIE BIN WAN MOHAMAD NOOR	PSMZA
45	IZHAR BIN AHMAD	PTSB
46	DR. CHEN WONG KEONG	PMU
47	MUHAMMAD NUR AZUAN BIN KAMARUDDIN	PMU

CURRICULUM ADVISORY COMMITTEE (CAC)

List of Curriculum Advisory Committee
Diploma in Mechanical Engineering Curriculum
Politeknik Sultan Salahuddin Abdul Aziz Shah
2024

No.	Name	Industry/Instituition	Position
1.	ENCIK AHMAD ZAIDI BIN MD. ZAIN	Agromind Solution Sdn. Bhd.	Pengarah
2.	ENCIK MOHD SHABUDDIN BIN MAT HASSAN	Indsys Engineering Sdn. Bhd.	Pengarah
3.	ENCIK MOHD ARBAIN B. MOHD YAHAYA	Pautan Legasi Sdn. Bhd.	Pengarah
4.	ENCIK MELVIN LIM CHUN HEAN	Gentle Automatic Solution Sdn. Bhd.	Pengarah Urusan
5.	ENCIK MOHD ASHRAF BIN MOHD IBRAHIM	Petronas Global Technical Solutions Sdn. Bhd.	Ketua Keselamatan Proses
6.	DR. THOUFEILI BIN TAUFEK	Feiran Technology Sdn. Bhd.	Pengarah
7.	Ts. NORSHAM BIN ISMAIL	Ideas Cad Technology Sdn. Bhd.	Pengarah Urusan

Diploma in Mechanical Engineering Curriculum
Jabatan Pengajian Politeknik dan Kolej Komutniti (JPPKK)
2024

Academic:

BIL.	NAMA	NAMA INSTITUSI / ORGANISASI
1	ASSOC. PROF. DR. AHMAD YASIR BIN MD SAID	UNIVERSITI KUALA LUMPUR, MALAYSIA FRANCE INSTITUTE (UniKL)
2	TS. DR. MOHD FADHLI BIN ZULKAFLI	UNIVERSITI TUN HUSSEIN ONN MALAYSIA (UTHM)
3	TS. DR. MOHD FAIZAL BIN SADALI	UNIVERSITI TEKNOLOGI PETRONAS (UTP)
4	SYED MOHD FAWWAZ BIN SYED MOHD RAMLI	UNIVERSITI KUALA LUMPUR, MALAYSIA FRANCE INSTITUTE (UniKL)

Industry:

BIL.	NAMA	NAMA INSTITUSI / ORGANISASI
1	WAN ZULKARIM BIN WAN NADZRI	LOTTE CHEMICAL SDN. BHD
2	DR. MOHAMAD KAMAL MOHAMAD DASUKI	MSQ ENGINEERING AND SOLUTION SDN. BHD.
3	MOHAMAD DAUD BIN OTHMAN	POS AVIATION
4	REHANFAIRUZ BIN MOHD JAMIL	MSQ ENGINEERING AND SOLUTION SDN BHD
5	IR. MOHD.SAIFUL RIZAM BIN MAT DALI	JABATAN KERJA RAYA MALAYSIA
6	MOHD AZMIZA BIN AHMAD	STAR ENERGY PETROLEUM SDN BHD
7	TS. NORSHAM BIN ISMAIL	IDEAS CAD TECHNOLOGY SDN BHD
8	MOHAMAD KHAIRULNIZAM BIN MOHD RUSLAN	ORS TECHNOLOGIES SDN BHD
9	MHD ACKMAL BIN MHD AMIR	AF MARITIM SDN.BHD.
10	MUHAMMAD AMIRUL BIN MOHD KHALID	NXP SEMICONDUCTORS
11	MUHAMMAD ALIF HADRI BIN MOHD MARZUQI	ZUMATEC ENGINEERING SDN. BHD.
12	ABD HALIM BIN YACOB	SIRIM BERHAD, PUSAT REKA BENTUK PEMBUNGKUSAN DAN KESELAMATAN
13	MUHAMAD SHAUFIQ HAFIZI MD ISA	JOHOR SHIPYARD AND ENGINEERING SDN. BHD
14	IR. ADRUIN SHAZAEN MOHD MUSTAFFA	ACNETIC NAVAL CONSULTANCY

15	NOR AZUARY BIN KAMSIN	PETRONAS GAS BERHAD (PETRONAS)
16	M SOLLEHUDDIN SABTU	PETRONAS GAS BERHAD (PETRONAS)
17	MUHAMMAD AIFA MAZLAN	PETRONAS GAS BERHAD (PETRONAS)
18	PROF. TS. DR. ROSNAH SHAMSUDIN	MALAYSIAN SOCIETY OF AGRICULTURAL AND FOOD ENGINEERS (MSAE)
19	HAIROLWIRA BIN HALIM	BINAWIRA ENGINEERING SDN. BHD
20	ANIS HAZIRAH BT RODZI	PERCETAKAN NASIONAL SDN. BHD
21	MOHD. FIRDAUS BIN MOHD. WAZIR	JABATAN KERJA RAYA (JKR)
22	MOHD ZAFRI BIN MOHD SALEH	MARA LINEAR SDN. BHD.
23	MUHAMMAD FAUZI BIN HAMZAH	VISUAL IN TECH SDN. BHD
24	MOHD ROZLAN BIN MOHD ALI HANAFIAH	HAMMER ENGINEERING SDN. BHD
25	M. BAHAR ABDUL RAHIM	MSQ ENGINEERING AND SOLUTION SDN. BHD.

SUB COMMITTEE 3P2K

List of Polytechnic and Community College Study Program Sub Committee (3P2K) 2024.

PROGRAM	AHLI JAWATANKUASA KECIL (*SUBCOMMITTEE)* PROGRAM PENGAJIAN POLITEKNIK DAN KOLEJ KOMUNITI (JK 3P2K)		MELALUI PENGARAH
DIPLOMA KEJURUTERAAN MEKANIKAL (DKM)	1.	Ts. Dr Hj. Zunuwanas bin Mohamad (K)	Politeknik Sultan Salahuddin Abdul Aziz Shah
	2.	Ts. Puan Nur Alyani binti Mohamed	Kolej Komuniti Seberang Jaya
	3.	Ts. Encik Hairi Haizri bin Che Amat	Politeknik Bagan Datuk
	4.	Puan Shafrine binti Mohamad Morshidi	Kolej Komuniti Kuching
DIPLOMA KEJURUTERAAN MEKANIKAL (AUTOMOTIF) (DAD)	1.	Dr. Suhaini binti Mat Daud (K)	Politeknik Sultan Abdul Halim Mu'adzam Shah
	2.	Ts. Hyril Farithz bin Ahmad	Politeknik Kuching Sarawak
	3.	Ts. Dr. Sharifah Aznee binti Said Ali @ Syed Ali	Politeknik Kota Kinabalu
DIPLOMA SENIBINA KAPAL (DNA)	1.	Puan Mazillah Azleen binti Mazlan (K)	Politeknik Sultan Salahuddin Abdul Aziz Shah
	2.	Puan Danizah binti Che Din	Politeknik Seberang Perai
	3.	Encik Zainordin Zhafran bin Zulkefli	Kolej Komuniti Gerik
	4.	Puan Siti Safuan binti Kamaruddin	Politeknik Sultan Mizan Zainal Abidin
	5.	Dr Akasyah bin Mohd Khathri	
DIPLOMA KEJURUTERAAN KAPAL (DKP	1.	Dr. Supa'at Bin Hj Zakaria@Jawahir (K)	Politeknik Ungku Omar
	2.	Ts. Haizal bin Mohd Hamzah	Politeknik Kuching Sarawak
	3.	Ts. Dr. Sylvia Ong Ai Ling	
	4.	Puan Suhana binti Sanatora	Kolej Komuniti Bandar Penawar
	5.	Puan Faraziah binti Hassan	Politeknik Nilai
	6.	Puan Fatimahwati binti Hamzah	Kolej Komuniti Kuala Langat

DIPLOMA KEJURUTERAAN	1	Ts. Encik Mohd Farid bin Rahat (K)	Politeknik Mersing

MEKANIKAL (LOJI) (DJL)	2.	Putri lrda binti Ab Rahman	Politeknik Sultan Azlan Shah
DIPLOMA KEJURUTERAAN MEKANIKAL (PLASTIK) (DMK)	1.	Siti Nadia binti Muhammad Samsuddin (K)	Politeknik Sultan Idris Shah
	2.	Ts. Puan Azimah binti Ismail	Politeknik Sultan Abdul Halim Mu'adzam Shah
DIPLOMA KEJURUTERAAN MEKANIKAL (BAHAN) (DMB)	1.	Puan Rosmawati binti Othman (K)	Politeknik Kata Kinabalu
	2.	Encik Wan Mohd Rizairie bin Wan Mohamad Noor	Politeknik Sultan Mizan Zainal Abidin
DIPLOMA KEJURUTERAAN KIMIA (DCE)	1.	Dr. Mazura binti Mansor (K)	Politeknik Nilai
	2.	Puan Nor Hakimah binti Ahmad Subri	Politeknik Kuching Sarawak
	3.	Puan Sharifah Noor Anita binti Syed Jaafar	Politeknik Muadzam Shah
DIPLOMA KEJURUTERAAN MEKANIKAL (PETROKIMIA) (DPC)	1.	Puan Munawira binti Saharani	Politeknik Ungku Omar
	2.	Puan Nur Lydia binti Othman	Politeknik Kuching Sarawak
	3.	Puan Nurzaliza binti Ghazali	Politeknik Sultan Abdul Halim Mu'adzam Shah
DIPLOMA KEJURUTERAAN PROSES (PETROKIMIA) (DPE)	1.	Puan Noor Azam bin Azmi (K)	Politeknik Sultan Haji Ahmad Shah
	2.	Puan Siti Safuan binti Kamaruddin	Politeknik Sultan Mizan Zainal Abidin
	3.	Puan Francisca Anak Kevin Akeu	Politeknik Kuching Sarawak
	4.	Encik Wong Tee Wei	Politeknik Mukah
DIPLOMA KEJURUTERAAN MEKATRONIK (DEM)	1.	Puan Danizah binti Che Din (K)	Politeknik Seberang Perai
	2.	Ts. Encik Mohd Amiruddin bin AB Aziz	Politeknik Sultan Haji Ahmad Shah
	3.	Encik Mohammad Hairy bin Kharauddin	Kolej Komuniti Masjid Tanah

DIPLOMA KEJURUTERAAN MEKANIKAL (PERTANIAN) (DPT)	1.	Puan Razimah binti Abdul Rahim (K)	Politeknik Port Dickson
	2.	Encik Imran Affandi bin Baki	Politeknik Sandakan
DIPLOMA KEJURUTERAAN	1.	Puan Suhaini binti Mat Daud (K)	Politeknik Sultan Abdul Halim Mu'adzam Shah

ELEKTRIK DAN INSTRUMENTASI (DEI)	2.	Ts. Encik Mohd Faizal bin Mustapha	Politeknik Kota Bharu
	3.	Puan Norhafiza binti Ahmad	Kolej Komuniti Bandar Penawar
ENGINEERING INDUSTRIAL TRAINING (DUT)	1.	Dr. Hjh. Nor Haniza binti Mohamad (K)	Politeknik Ibrahim Sultan
	2.	Ts. Encik Mohd Nizam bin Mohd Talib	Kolej Komuniti Kluang

POLYTECHNIC CURRICULUM BOARD (PCB)

List of Polytechnic Curriculum Board
2024

1. **Dr. Haji Mohd Zahari bin Ismail**
   Ketua Pengarah, Jabatan Pendidikan Politeknik dan Kolej Komuniti

2. **Prof. Emeritus Dato' Ts. Ir. Dr. Zainai bin Mohamed**
   Professor Emeritus
   Razak Faculty of Technology and Informatics
   Universiti Teknologi Malaysia (UTM)

3. **Prof. Dr. Pradeep Kumar Nair**
   Timbalan Naib Canselor
   Taylor's University

4. **Ts. Haji Muhamad Rumzi bin Mamat**
   Timbalan Ketua Pengarah (Perancangan)
   Jabatan Pendidikan Politeknik dan Kolej Komuniti

5. **Haji Kamaludin bin Daud**
   Timbalan Ketua Pengarah (Governan)
   Jabatan Pendidikan Politeknik dan Kolej Komuniti

6. **Encik Mohd Noor bin Shahudin**
   Pengarah Kanan (Akademik)
   Jabatan Pendidikan Politeknik dan Kolej Komuniti

7. **Dr. Haji Shamsuri bin Abdullah**
   Pengarah
   Politeknik Ungku Omar (PUO)

8. **Puan Roseliza binti Shaari**
   Pengarah
   Politeknik Seberang Perai (PSP)

9. **Ts. Khairul Anuar bin Ishak**
   Pengarah
   Politeknik METrO Tasek Gelugor (PMTG)

10. **Dr. Zamzam bin Mohd Walid**
    Pengarah Bahagian Kurikulum
    Merangkap Setiausaha MLK
    Jabatan Pendidikan Politeknik dan Kolej Komuniti

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

APPENDICES C2: PROGRAM LEARNING OUTCOMES

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)
DIPLOMA IN MECHANICAL ENGINEERING (DKM)

Final Examination Item Specification Table (FEIST)

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ10243 - WORKSHOP TECHNOLOGY
VERSI KURIKULUM	Version: 06062024_2_Effective: Session_II_2024/2025
NAMA PENYELARAS KURSUS	NURHASLIZA BINTI ROSLI
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology. (C3, PLO1)
CLO2 : Apply standard practice in operating mechanical tools and component. (C3, PLO7)
CLO3 : Demonstrate continuous learning and information management skills to complete assigned task. (A3, PLO11)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**							**JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**	**T7**		**C1**		**C2**		**C3****		**C4****		**C5****		**C6****		
	04.50	**03.00**	**03.00**	**03.00**	**06.00**	**06.00**	**03.00**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/							Q1	(a) SA	6	(b) SA	8											25
		/											(c) SQ	11									
CLO 1			/					Q2	(a) SA	6	(b) SA	7											25
				/									(c) SQ	12									
CLO 2					/			Q3	(a) SA	4	(b) SA	8	(c) SQ	13									25
CLO 2						/		Q4	(a) SA	6	(b) SA	8											25
							/						(c) SQ	11									
						JUMLAH MARKAH			C1	22	C2	31	C3	47	C4	0	C5	0	C6	0		100
						TABURAN DOMAIN KOGNITIF			C1 - C2			53%	C3 - C4			47%	C5-C6			0%		100%

Panduan pembangunan FEIST

i. Kombinasi 2 topik berturutan dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Setiap set pembinaan item peperiksaan akhir perlu disediakan cadangan formula

b) Sekurang-kurangnya 1 daripada item-item dalam lajur C3,C4,C5 dan C6 perlu dibina memenuhi DP1 dan mana-mana dari 2 DP yang lain (DP2-DP7)

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

d) PEMBINAAN ITEM PEPERIKSAAN AKHIR KOD KURSUS INI TIDAK MELIBATKAN POLITEKNIK PENYELARAS

Disediakan oleh:

NURHASLIZA BINTI ROSLI
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor
Penyelaras Kursus

Disemak oleh:

(NAMA)
Ketua Program
NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZARIS BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
(NAMA Jabatan Kejuruteraan Mekanikal
Penyelaras Jabatan

TERHAD

APPENDIX C2-4b

Course Item Specification Table (CIST)

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
COURSEWORK ITEM SPECIFICATION TABLE (CIST) FOR
COGNITIVE DOMAIN

Department : JABATAN KEJURUTERAAN MEKANIKAL	Course Code : DJJ 20063	Course Name: THERMODYNAMICS

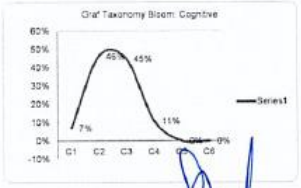
COURSE LEARNING OUTCOME (CLO)

Upon completion of this course, students should be able to:-

1. Explain fundamentals concept and properties of pure substances in thermodynamics (C2, PLO1)
2. Apply Laws of thermodynamics and it processes (C3, PLO1)
3. Organize appropriately experiments according to the Standard/Operating Procedures (P4, PLO5)
4.

ASSESSMENT TASKS	CLO			DK	DP	TOPIC	COGNITIVE LEVEL & MARKS DISTRIBUTION												Total marks (%)	CONSTRUCT (SS)	TYPES OF ITEM		
							C1		C2		C3		C4		C5		C6						
	CLO1	CLO2	CLO3				#	Marks	#	Marks	#	Marks	#	Marks	#	Marks	#	Marks			O	S	E
EOC 1	X			1 - 4	1,3,5	T2			3	16	1	14							30	2.1 Explain the properties of pure substances 2.2 Apply the state of steam using the properties of pure substances 2.3 Apply ideal gas model to pure substances			
EOC 2		X		1 - 4	1,3	T4					3	24	1	16					30	4.1 Explain the concept of the second law of thermodynamics. 4.2 Apply the concept of the second law of thermodynamics.			
QUIZ 1	X			1 - 4		T1			3	10									10	1.1 Explain the fundamental concepts of thermodynamics			
QUIZ 2		X		1 - 4	1,5	T2					1	9							20	2.1 Explain the properties of pure substances 2.2 Apply the state of steam using the properties of pure substances 2.3 Apply ideal gas model to pure substances			
				1 - 4	1, 3	T3			1	6	1	5								3.1 Relate the concept of the first law of thermodynamics. 3.2 Apply the concept of the first law of thermodynamics in closed system. 3.3 Apply the concept of the first law of thermodynamics in open system.			
TEST 1	X			1 - 4		T1			2	15									30	1.1 Explain the fundamental concepts of thermodynamics			
				1 - 4	1,3,5	T2			3	15										2.1 Explain the properties of pure substances 2.2 Apply the state of steam using the properties of pure substances 2.3 Apply ideal gas model to pure substances			
TEST 2		X		1 - 4	1, 3	T3	1	5	1	5	1	13							25	3.1 Relate the concept of the first law of thermodynamics. 3.2 Apply the concept of the first law of thermodynamics in closed system. 3.3 Apply the concept of the first law of thermodynamics in open system.			
						TOTAL :	1	5	13	67	7	65	1	16	0	0	0	0	145				
						% :		7%		46%		45%		11%		0%		0%	100%				

C1	7%
C2	46%
C3	45%
C4	11%
C5	0%
C6	0%



Prepared by :
(MOHD ZULKARNAEN BIN MOHD IBRAHIM)
Head of Department/Head of Course Lecturer
Date :

MOHD. ZULKARNAEN BIN MOHD. IBRAHIM
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

Verified by :
(MOHD SHARIZAN BIN MOHD SHARIF)
Head of Department/Head of Course Lecturer
Course Coordinator
Date :

MOHD SHARIZAN BIN MOHD SHARIF
Ketua Program Mekanikal Am
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

Course Outcome Review Report (CORR)

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
COURSE OUTCOME REVIEW REPORT (CORR)

1. COURSE INFORMATION

Programme	: DIPLOMA KEJURUTERAAN MEKANIKAL [DKM]
Class	: DKM3A, DKM3B, DKM3C, DKM3D, DKM3E, DKM4A, DKM5A, DKM6A,
Course Name	: DJJ30113 - MATERIAL SCIENCE AND ENGINEERING
Lecturer	: NORASIAH BINTI MUHAMMAD
Number Of Student	: 162
Date	: 2/1/2025

2. PERFORMANCE INDICATOR

		TARGET (%)	ACHIEVEMENT
1.	Student Performance : % achieving grade C and above.	70	93.8
2.	CLO achievement: >50% attainment for CLO's.	90	100.0
3.	PLO achievement: >50% attainment for PLO's.	90	100.0
4.	Student achieve > 80% - attendance	100	100
5.	< 30% difference between continuos assessment (CA) and final exam (FE).	50	52.5

3. STUDENT PERFORMANCE

Grade(% of student)

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	E	E-	F
0.6	8.6	9.3	13.6	14.8	19.8	17.9	8.6	2.5	1.9	1.2	0.6	0	0

4. COURSE LEARNING OUTCOME

		Group Attainment (%)	Student Achieve >= 50%
CLO01C	Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment	70.5	95.7
CLO02P	Performed appropriate material testing according to the Standard Operating Procedures	83.0	100.0
CLO03A	Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session	88.0	100.0

5. PROGRAMME LEARNING OUTCOME

		Group Attainment (%)	Student Achieve >= 50%
PLO001	apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices	70.5	95.7
PLO005	apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)	83.0	100.0
PLO009	function effectively as an individual, and as a member in diverse technical teams	88.0	100.0

6. REFLECTION (KOMEN DAN CADANGAN)

PENCAPAIAN / ACHIEVEMENT	CADANGAN (Cadangan untuk baiki PLO < 50%)
Semua CLO & PLO melebihi sasaran yang ditetapkan oleh Ketua Program iaitu 70%.	CLO01C & PLO001 oleh dipertingkatkan dengan memperbanyakkan latihan pengukuhan setelah selesai setiap topik & memberi pendedahan berkaitan format soalan peperiksaan akhir di akhir semester.

7. PREPARED BY

	Name	Signature	Date:
Course Coordinator	NORASIAH BINTI MUHAMMAD	NORASIAH BT MUHAMMAD Pensyarah Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah	
Head of Programme		MOHD SHARIZAM BIN MOHD SHARIF Ketua Program Mekanikal Am Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah 2/1/25	

ANALISA PENCAPAIAN CLO PLO DAN CADANGAN CQI SEMESTER SEMASA
SESI 2 2024/2025

NAMA PROGRAM : DIPLOMA KEJURUTERAAN MEKANIKAL [DKM]

ANALISA PENCAPAIAN CLO PLO DAN CADANGAN CQI SEMESTER SEMASA
SESI II:2024/2025

NAMA PROGRAM : DIPLOMA KEJURUTERAAN MEKANIKAL [DKM]

	PELAKSANAAN SESI II:2024/2025													CATITKAN TINDAKAN SESI 1 2025/2026 OLEH PENSYARAH KURSUS/PENYELARAS KURSUS/KETUA KURSUS/KETUA PROGRAM
BIL.	KOD KURSUS	NAMA KURSUS	KELAS TERLIBAT	NAMA PENYELARAS KURSUS	SASARAN PLO CLO BAHARU (%)	NILAI PURATA CLO DAN PLO (GROUP ATTAINMENT %)							ULASAN PENYELARAS KURSUS (Pencapaian CLO & PLO, AST, DLL)	CADANGAN CQI (ePNP) - Jenis Penilaian/Latihan/Topik/Lain-Lain	CATATAN : PENSYARAH KURSUS: ** LAKSANAKAN CADANGAN CQI PENYELARAS KURSUS: **CATATKAN DI EPNP DAN IFRP KETUA PROGRAM/KETUA KURSUS/PENYELARAS KURIKULUM : **SALURKAN KEPADA PENYELARAS FEIST/KURIKULUM"
1	DBM10163	ENG. MATHEMATICS I	DKM1A	NUR RAIHAN BINTI ABDUL SALIM	50	CLO01/01C	CLO01/02C	CLO01/03A					Pada keseluruhannya, semua CLO telah mencapai sasaran iaitu melebihi 50%. Walaubagaimanapun, sasaran pelajar memperoleh gred C dan ke atas tidak mencapai sasaran iaitu hanya 61.3% (target 70%) Perbezaan jurang markah CA dn FE tidak mencapai target iaitu hanya sebanyak 38.7% (target 50%). Hal ini disebabkan oleh bimbingan dan bantuan diberikan sepanjang CA dan pelajar dapat skor markah yang lebih tinggi dalam CA	Membuat latihan menggunakan soalan peperiksaan akhir sebenar kursus DBM10163 bagi memberi pendedahan dan membiasakan pelajar	PENSYARAH KURSUS
						62.5	56.1	75.5							
						PLO01/01	PLO01/02	PLO01/08							
						62.5	56.1	75.5							
2	DBS10042	ENGINEERING SCIENCE	DKM1A	LEE TEN TEN	50	CLO01/01C	CLO01/02C	CLO01/03A					Pada keseluruhannya, semua CLO telah mencapai sasaran iaitu melebihi 50%. Sasaran pelajar memperoleh gred C dan ke atas mencapai sasaran iaitu 90.3% (target 70%) Perbezaan jurang markah CA dn FE tidak mencapai target iaitu hanya sebanyak 41.9% (target 50%). Pelajar diberi bimbingan dan bantuan sepanjang CA dan pelajar dapat skor markah yang lebih tinggi dalam CA menyebabkan Perbezaan jurang markah CA dn FE.	Membuat latihan menggunakan soalan peperiksaan akhir sebenar kursus DBS10042 bagi memberi pendedahan dan membiasakan pelajar dengan bentuk soalan dan cara penyelesaian.	PENSYARAH KURSUS
						58.2	83.2	79.1							
						PLO01/01	PLO01/04	PLO01/06							
						58.2	79.1	83.2							
3	DJJ10223	ENGINEERING DRAWING	DKM1A	AMD	60	CLO01/01C	CLO01/02P	CLO01/03A					Pada keseluruhan semua CLO melebihi 50% dan mencapai sasaran kursus iaitu 60%/.	Memberi pengukuhan/latihan sebelum penilaian Quiz dan Test dilaksanakan.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Ifrp
						81.5	92.6	59.3							
						PLO01/01	PLO01/05	PLO01/07							
						81.5	92.6	59.3							
4	DJJ10232	MECHANICAL WORKSHOP PRACTICE 1	DKM1A	WNH	70	CLO01/01P	CLO01/02P	CLO01/03A					- Pencapaian kumpulan melebihi 84% untuk semua CLO.	Untuk meningkatkan pencapaian kumpulan, aktiviti lengkat akan dipenlingkatkan dengan lebih banyak tugasan praktikal, penguasaan lebih detail, dan bimbingan yang lebih baik semasa sesi hands-on.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan IFRP
						84.3	85.6	84.7							
						PLO01/05	PLO01/06								
						84.3	85.6								
5	DJJ10243	WORKSHOP TECHNOLOGY	DKM1A	AZIL	55	CLO01/01C	CLO01/02C	CLO01/03A					Pencapaian 1 : sasaran tercapai 86.2%. Pencapaian 2&3: CLO1 PO1 [55.1%] & CLO3 PO5[81.4%] melebihi50%, CLO2 PO2 (62.3%) mencapai sasaran. Pencapaian 4 : Tercapai (100% pelajar hadir kuliah melebihi 80% kehadiran). Pencapaian 5:Tercapai(48.3% pelajar memperolehi bezra markahPBdan PAkurang 30 markah)	1. Memberi latihan pengukuhan sebelum penilaian Quiz dan Test. 2. Penseliaan FE: Memastikan pelajaruntukmenjawab contoh soalan peperiksaan akhir dan membuat perbincangan soalan tersebut dalam kelas.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan IFRP
						55.1	62.3	81.4							
						PLO01/01	PLO01/07	PLO01/11							
						55.1	62.3	81.4							
6	DUE10062	TECHNICAL ENGLISH I	DKM1A	PN. LEE YONG YONG	50	CLO01/01A	CLO01/02A	CLO01/03A					Indikator 1: Tercapai dengan pencapaian 96.6% melebihi Gred C. Indikator 2 dan 3: Tercapai dengan pencapaian 100% melebihi 50%. Indikator 4: Tercapai dengan pencapaian 100% melebihi 80%.	Aktiviti simulasi situasia industri boleh digunakan untuk melatih pelajar membuat pertanyaan teknikal dan memberi maklum balas secara lisan menggunakan istilah yang betul dan nada professional.	PENSYARAH KURSUS
						74	83.4	64.4							
						PLO09	PLO011								
						73.9	74								
7	DUW10042	OCCUPATIONAL, SAFETY AND HEALTH FOR ENGINEERING	DKM1A	LID	50	CLO01/01C	CLO01/02A	CLO01/03A					Secara keseluruhannya clo& plo yang telah ditetapkan iaitu 50%.	1. memberi latihan pengukuhan/latihan sebelum penilaian Quiz dan Test dilaksanakan.	PENSYARAH KURSUS
						69.5	83.1	78.4							
						PLO01/01	PLO01/04	PLO01/06							
						69.5	83.1	78.4							

8	MPU24031	SUKAN 1	DKM1A	ROKIAH BINTI HASSAN	60	CLO01/01P	CLO01/02A						Pencapaian 1 : sasaran tercapai 100%. Pencapaian 2&3: Telah mencapai sasaran melebihi 50% [CLO1/01P PLO0105 [92.7%] & [CLO01/02A PLO0110[64.3%] . Pencapaian 4 : Tercapai (100% pelajar hadir kuliah melebihi 80% kehadiran).		PENSYARAH KURSUS
						92.7	64.3								
						PLO01/08	PLO01/10								
						92.7	64.3								
9	MPU24041	KELAB/PERSATUAN 1	DKM1A	JAMALIAH BINTI JAAFAR	60	CLO01/01P	CLO01/02A						Pencapaian 1: Mencapai sasaran sebanyak 100%. 2 pelajar mendapat gred A+, 5 orang pelajar mendapat gred A, 1 org pelajar mendapat gred B+, 3 orang pelajar mendapat gred B, 1 orang pelajar mendapat gred B- dan 2 orang pelajar mendapat gred C+. Pencapaian 2 dan 3: Semua sasaran kursus 50% telah berjaya dicapai CLO1/01P PLO0105 (80%) dan CLO1/02A PLO0110 (74.5%). Pencapaian 4 : Kehadiran pelajar mencapai sasaran 100%.		PENSYARAH KURSUS
						80	74.5								
						PLO01/08	PLO01/10								
						80	74.5								
SEMESTER 3															
10	DBM20173	ENGINEERING MATHEMATICS 2	DKM2A	HUSNIYATI BINTI ADNAN	50	CLO01C	CLO02C	CLO03A					Pada keseluruhannya semua CLO telah mencapai sasaran lebih dari 50% dimana: 1. Student Performance: % achieving grade C and above mencapai 98.0% (melebihi target iaitu 70%) 2. CLO achievement: >50% attainment for CLO's mencapai 100% (melebihi target iaitu 90%) 3. PLO achievement: >50% attainment for PLO's mencapai 100% (melebihi target iaitu 90%) 4. Student achieve > 80% - attendance mencapai 100% 5. <30% difference between continuous assessment (CA) and final exam (FE) hanya mencapai 33.3% (tidak mencapai target iaitu 50%)	CADANGAN CQI: 1. Membuat latihan menggunakan soalan peperiksaan akhir sebenar kursus DBM20173 bagi memberi pendedahan dan membiasakan pelajar dengan bentuk soalan dan cara penyelesaian. 2. Mengadakan pertincangan dalam kumpulan bagi menyelesaikan soalan tutorial di dalam kelas.	PENSYARAH KURSUS
						75.1	81.2	96.5							
						PLO001	PLO002	PLO008							
						75.1	81.2	96.5							
11	DJJ20252	MECHANICAL WORKSHOP PRACTICE 2	DKM2A	WMJ	70	CLO01P	CLO02CP	CLO03A					Semua CLO & PLO melebihi target yang telah ditetapkan iaitu 70%.	1. Memberi penerangan kepada pelajar berkaitan rubrik yang akan dinilai sebelum bengkel bagi memastikan pelajar tahu aspek penilaian. 2. Memastikan pelajar menghantar projek untuk setiap bengkel.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan IFRP
						93.3	86.3	92.4							
						PLO005	PLO008								
						89.8	92.4								
12	DJJ20263	ELECTRICAL AND ELECTRONIC TECHNOLOGY	DKM2A	ALO	50	CLO01C	CLO02P	CLO03A					Semua CLO & PLO melebihi target yang telah ditetapkan iaitu 50%. CLO 01 sebanyak 50% dan CLO 02 dan CLO 03 sebanyak 87%	Untuk tambah baik CLO1 pelajar akan diberi contoh soalan peperiksaan akhir dan juga lebih tubi soalan-soalan past years.	Mohon rujuk panduan catatan CQI. Masih perlu membuat penambahbaikan CQI. CQI yang boleh diukur dan dibuktikan pelaksanaannya
						51	87	87							
						PLO001	PLO005	PLO011							
						51	87	87							
13	DJJ20282	COMPUTER AIDED DESIGN	DKM2A	BRY	55	CLO01C	CLO02P	CLO03A					Indikator 1 :Tercapai (98.6% pencapaian melebihi gred C) Indicator 2 : Tercapai (Semua CLO melebihi 50% dan mencapai sasaran kursus iaitu 60%) Indicator 3 : Tercapai (Semua PLO melebihi 50% dan mencapai sasaran kursus iaitu 60%) Indikator 4 : Tercapai (100% pelajar hadir kuliah melebihi 90% kehadiran) Indikator 5 : Tercapai (100% pelajar memperolehi beza markah PB dan PA kurang 30 markah)	CLO3 PO9 : Memberi Soalan Presentation lebih awal cth MKB supaya pelajar dapat memberi masa untuk membuat penselaan pemilihan tajuk dan untuk menghasilkan model 3D yang sesuai utk menjadi tajuk pertandingan.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Ifrp
						80.5	71.6	68.9							
						PLO001	PLO005	PLO009							
						80.5	71.6	68.9							
14	DJJ20073	FLUID MECHANICS	DKM2A	ZET	55	CLO01C	CLO02C	CLO03P					Indikator 5 : Tercapai (100% pelajar memperolehi beza markah PB dan PA kurang 30 markah)	Untuk tambah baik CLO2 pelajar akan diberi contoh soalan peperiksaan akhir.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Ifrp
						66.6	57.3	77.8							
						PLO001	PLO005								
						61.9	77.8								
15	MPU21072	PENGHAYATAN ETIKA DAN PERADABAN	DKM2A	JPA	70	CLO01A	CLO02A	CLO03A					Indikator 1:Tercapai (100% pencapaian melebihi gred C) Indikator 2 & 3 tercapai) Semua CLO PLO melebihi 50% dan mencapai sasaran kursus). Indikator 4: Tercapai (100% pelajar hadir kuliah melebihi 80%)	Kekalkan kaedah pengajaran sedia ada. Tiada cadangan pembaikan kursus diperlukan untuk PLO dibawah 50% kerana kesemua PLO oleh mencapai sasaran dengan cemerlang.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Ifrp
						83	87.3	79.3							

16	MPU22071	KURSUS INTEGRITI DAN ANTI-RASUAH	DKM2A/ DKM2B/ DKM2C/ DKM2D	MUHAMMAD SAFWAN BIN ABDULLAH	60	CLO01A	CLO02A						Indikator 1:Tercapai (100% pencapaian melebihi gred C) Indikator 2 & 3 tercapai) Semua CLO PLO melebihi 50% dan mencapai sasaran kursus). Indikator 4: Tercapai (100% pelajar hadir kuliah melebihi 80%)	1) Mengingatkan pelajar berkaitan rubrik dan membuat pemantauan proses kerja sebelum penilaian dilaksanakan. 2) Menggunakan padlet untuk mendapatkan maklum balas pelajar. 3)Latihan pengukuhan melalui mateamu dan quizizz.	PENSYARAH KURSUS
						87.1	84.2								
						PLO008	PLO010								
						87.45	83.8								
17	MPU24051	SUKAN 2	DKM2A	ROKIAH BINTI HASSAN	70	CLO01P	CLO02A						Pada keseluruhan semua indikasi prestasi tercapai melebihi sasaran yang telah ditetapkan. Pencapaian 1 : Sasaran tercapai 100%. Pencapaian 2 & 3: Sasaran telah tercapai melebihi 50% [CLO101P PLO105[88.6%] & CLO102A PLO0110[90.7%] . Pencapaian 4 : Tercapai (100% pelajar hadir kuliah melebihi 80% kehadiran).		PENSYARAH KURSUS
						88.6	90.7								
						PLO008	PLO010								
						88.6	90.7								
18	MPU24061	KELAB/PERSATUAN	DKM2A	JAMALIAH BINTI JAAFAR	70	CLO01P	CLO02A						Pencapaian 1: Mencapai sasaran sebanyak 100%. 21 pelajar mendapat gred A+, 15 orang pelajar mendapat gred A, 2 orang pelajar mendapat gred A-, 2 orang pelajar mendapat gred B+ dn 1 orang pelajar mendapat gred B. Pencapaian 2 dan 3: Semua sasaran kursus 50% telah berjaya dicapai CLO101P PLO0105 (88.8%) dan CLO102A PLO0110 (89.7%). Pencapaian 4 : Kehadiran pelajar mencapai sasaran 100%.	Pelaksanaan CDI yang dilaksanakan pada sesi ini diteruskan pada masa akan datang. Pelaksanaannya adalah: 1. Memberikan pendedahan kepada pelajar mengenai organisasi kelab/persatuan yang ada di kawasan persekitaran. 2. Pelaksanaan penilaian secara berkala. (Cadangan : Pensyarah Kursus telah memasukkan sekurang-kurangnya 40% markah pelajar pada minggu ke 12). 3. Pensyarah akan menghubungi Penasihat Akademik (P.A) jika pelajar bermasalah seperti TIDAK menghantar tugasan atau tidak hadir. 4. Mempelbagaikan kaedah PdP dari masa ke semasa. 5. Membuat pemantauan kehadiran secara mingguan.	PENSYARAH KURSUS
						88.8	89.7								
						PLO008	PLO010								
						88.8	89.7								
19	MPU24XX1	UNIT BERUNIFORM	DKM2A	JSKK	60	CLO01P	CLO02A						Pencapaian 1: Mencapai sasaran sebanyak 100%. 4 pelajar mendapat gred A+, 16 orang pelajar mendapat gred A, 5 orang pelajar mendapat gred A- dan 1 orang pelajar mendapat gred B+. Pencapaian 2 dan 3: Semua sasaran kursus 50% telah berjaya dicapai CLO101P PLO0105 (82.7%) dan CLO102A PLO0110 (85.6%). Pencapaian 4 : Kehadiran pelajar mencapai sasaran 100%.	Pelaksanaan CDI yang dilaksanakan pada sesi ini diteruskan pada masa akan datang. Pelaksanaannya adalah: 1. Memberikan pendedahan kepada pelajar mengenai organisasi kelab/persatuan yang ada di kawasan persekitaran. 2. Pelaksanaan penilaian secara berkala. (Cadangan : Pensyarah Kursus telah memasukkan sekurang-kurangnya 40% markah pelajar pada minggu ke 12). 3. Pensyarah akan menghubungi Penasihat Akademik (P.A) jika pelajar bermasalah seperti TIDAK menghantar tugasan atau tidak hadir. 4. Mempelbagaikan kaedah PdP dari masa ke semasa. 5. Membuat pemantauan kehadiran secara mingguan.	PENSYARAH KURSUS
						82.7	85.6								
						PLO008	PLO010								
						82.7	85.6								
SEMESTER 3															
20	DBM30033	ENGINEERING MATHEMATICS 3	DKM3A	ROZANNA BINTI SA'ARI	55	CLO01C	CLO02C	CLO03A					Pada keseluruhannya semua CLO dan PLO telah mencapai sasaran lebih dari 50%. Semua Performance Indicator telah mencapai target kecuali indicator 5. Student Performance : 94.6% memperoleh pencapaian grade C dan ke atas.Terdapat seorang pelajar gagal.	Bagi mengatasikan prestasi ini. 1. Sesi PdP yang lebih menarik dicadangkan diperkukuhkan melalui penggunaan teknologi terkini seperti bantuan AI. 2. Mengadakan latihan tambahan sebelum penilaian kuiz dan ujian serta peperiksaan akhir.	PENSYARAH KURSUS
						72.5	85.9	75.5							
						PLO001	PLO005	PO010							
						72.5	85.9	75.5							
21	DJJ30082	MECHANICAL WORKSHOP PRACTICE 3	DKM3A	ZKI	75	CLO01P	CLO02P	CLO03A					Pada keseluruhannya semua CLO dan PLO telah mencapai sasaran lebih dari 50%, markah purata adalah dalam lingkungan 75 - 76 peratus. Semua Performance indicator telah mencapai target kecuali indicator 1. Student Performance : % achieving grade C and above.Terdapat seorang pelajar mendapat Gred C ke bawah.	Adakan latihan pengukuhan/tambahan bagi pelajar yang lemah dalam latihan welding dan machining.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfrp
						75	75	76.5							
						PLO005	PLO006								
						75	76.5								
22	DJJ30093	ENGINEERING MECHANICS	DKM3A	AML	50	CLO01C	CLO02C	CLO03P					Pada keseluruhannya semua CLO dan PLO telah mencapai sasaran lebih dari 50%, markah purata adalah dalam linkungan 52 - 66 peratus. Performance indicator bagi Student Performance : % achieving grade C and above DAN <30% difference between CA dan FE tidak mencapai target yang ditetapkan disebabkan pencapaian FE yang rendah.	1. Memberi latihan pengukuhan sebelum penilaian Quiz dan Test. 2. Penekanan FE: Memastikan pelajar untuk menjawab contoh soalan peperiksaan akhir dan membuat perbincangan soalan tersebut dalam kelas.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfrp
						52.1	59.6	66.6							
						PLO001	PLO002	PLO005							
						52.1	59.6	66.6							
23	DJJ30103	STRENGTH OF MATERIALS	DKM3A	SAY	50	CLO01C	CLO02C	CLO03P					Indikator 1 :Tercapai (85.7% pencapaian LULUS PBI + PA). Indicator 2 : Tercapai (semua clo melebihi 50% dan clo3 mencapai sasaran kursus iaitu melebihi 60%) Indicator 3 : Tercapai (semua plo melebihi 50% dan plo3 mencapai sasaran kursus iaitu melebihi 60%)	1. Memberi latihan pengukuhan sebelum penilaian Quiz dan Test. 2. Penekanan FE:Memastikan pelajar untuk menjawab contoh soalan peperiksaan akhir.	Mohon rujuk panduan catatan CQI. Masih perlu membuat penambahbaikan CQI. CQI yang boleh diukur dan dibuktikan pelaksanaannya
						50.1	57.2	65							
						PLO001	PLO002	PLO005							
						50.1	57.2	65							

24	DJJ30113	MATERIAL SCIENCE AND ENGINEERING	DKM3A	AC	70	CLO01C	CLO03P	CLO03A					Pada keseluruhannya semua CLO dan PLO telah mencapai sasaran lebih dari 50%, markah purata adalah dalam linkungan 77 - 89 peratus. +30% difference between CA dan FE:Pencapaian adalah 32.3, tidak mecapai target 50% ini disebabkan pencapaian FE yang rendah.	Untuk persediaan final exam (FE): Memastikan pelajar untuk menjawab contoh soalan peperiksaan akhir.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfp
						77.3	88.6	89.6							
						PLO001	PLO005	PLO009							
						77.3	88.6	89.6							
25	DJJ30122	COMPUTER AIDED DESIGN	DKM3A	LIN	60	CLO01C	CLO03P	CLO03A					Indikator 1 :Tercapai (86.1% pencapaian melebihi gred C) Indicator 2 : Tercapai (Semua CLO melebihi 50% dan mencapai sasaran kursus iaitu 60%) Indicator 3 : Tercapai (Semua PLO melebihi 50% dan mencapai sasaran kursus iaitu 60%) Indikator 4 : Tercapai (100% pelajar hadir kuliah melebihi 80% kehadiran) Indikator 5 : N/A	Memberi latihan pengukuhan sebelum penilaian Practical Task dan Practical Test diberi.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfp
						70.1	70.3	86.8							
						PLO001	PLO005	PLO010							
						70.1	70.3	86.8							
26	MPU23052	SAINS TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM	DKM3D	MEK ZAH	65	CLO01A	CLO02A	CLO03A					Indikator 1: Tercapai. (100% pencapaian melebihi gred C). Indikator 2 dan 3 : Tercapai (semua CLO dan PLO melebihi 50% dan mencapai sasaran yang telah ditetapkan iaitu 65% kecuali CLO03A yang hanya capai 63%). Indikator 4: Tercapai (100% pelajar hadir kuliah melebihi 80% kehadiran)	CLO03A tidak mencapai sasaran kursus iaitu 65%. Memberi pengukuhan / latihan sebelum penilaian e-Folio dilaksanakan. Kaedah pengukuhan / latihan menggunakan platform padlet atau quizzes boleh dilaksanakan ketika sesi kuliah berlangsung kerana dapat membantu meningkatkan kefahaman pelajar berkenaan topik 4 & 5.	PENSYARAH KURSUS
						98	75	63							
						PLO008	PLO012								
						75	80.5								
SEMESTER 4															
26	DJJ40132	ENGINEERING & SOCIETY	DKM4A, DKM4B, DKM4C, DKM4D, DKM4E	SAZ	70	CLO01C	CLO02C	CLO03C					Pada keseluruhannya, semua CLO dan PLO telah mencapai sasaran. 1. Student Performance: 100% mencapai gred C dan ke atas (TERCAPAI) 2. CLO achievement >50%: 100%(TERCAPAI) 3. PLO achievement >50%:Pencapaian 100%. (TERCAPAI)	Cadangan untuk meningkatkan lagi pencapaian: 1. Memberi latihan pengukuhan sebelum penilaian Quiz dan Test. 2. Membuat perbincangan yang berkaitan sebelum pelajar melaksanakan tugasan Pembentangan dan Case Study sebagai panduan yang lebih baik.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfp
						79.8	82.4	78.4							
						PLO006	PLO007	PLO008							
						79.8	78.4	82.4							
27	DJJ40142	MECHANICAL WORKSHOP PRACTICE 4	DKM4A	ZBI	65	CLO01P	CLO03P	CLO03A					1. Student Performance: 98.7 % mencapai gred C dan ke atas (TERCAPAI) 2. CLO achievement >50%:100%(TERCAPAI) 3. PLO achievement >50%:Pencapaian 100%. (TERCAPAI) 4. Student achieve>80%attendance:Pencapaian 100%. (TERCAPAI	Memandangkan semua indicator tercapai, maka terdapat beberapa cadangan : - CLO1 : Memberi penilaian berbentuk formative - PLO5 : Memberi peluang setiap pelajar untuk terlibat dalam menjalankan mesin	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfp
						80.3	82.8	81.6							
						PLO003	PLO005	PLO007							
						82.8	80.3	81.6							
28	DJJ40153	PNEUMATIC & HIDRAULICS	DKM4A, DKM4B, DKM4C, DKM4D, DKM4E	SKH	55	CLO01C	CLO02C	CLO03P					Indikator 1: Tercapai (80.6% pencapaian melebihi gred C) Indikator 2 & 3: Tercapai(semua CLO PLO melebihi 50% dan mencapai sasaran kursus iaitu 50%) namun begitu CLO1C perlulus group attainment terendah iaitu 58.5% Indikator 4: Tercapai(100% pelajar hadir kuliah melebihi 80% kehadiran) Indikator 5 : Tercapai (91.2% pelajar memperolehi beza markah PB dan PA kurang 30 markah)	CLO01/PLO01 - memberi penekanan dalam pengetahuan konsep asas pneumatik merangkumi jenis komponen, konsep, kefungsian dan versatiliti. - Penekanan boleh dilakukan melalui latihan dan penilaian bentuk formatif secara mingguan/akhir chapter.	Mohon rujuk panduan catatan CQI. Masih perlu membuat penambahbaikan CQI. CQI yang boleh diukur dan dibuktikan pelaksanaannya
						58.5	63.5	78.4							
						PLO001	PLO003	PLO005							
						58.5	63.5	78.4							
29	DJJ40163	MECHANICS OF MACHINES	DKM4A, DKM4B, DKM4C, DKM4D, DKM4E	NHB	60	CLO01C	CLO02C	CLO03P					CLO1: Kelas DKM4D tidak tercapai (ramai pelajar dapat markah rendah Test 1). (Walaubagaimanapun group attainment tercapai sasaran kursus iaitu 60% CLO2: Tercapai melebihi sasaran kursus iaitu 60%. CLO3: Tercapai melebihi sasaran kursus iaitu 60%. PLO1: Kelas DKM4D tidak tercapai. Walaubagaimanapun group attainment tercapai sasaran kursus iaitu 60%. PLO2: Tercapai melebihi sasaran kursus iaitu 60%. PLO3: Tercapai melebihi sasaran kursus iaitu 60%.	(1) Memberi latihan pengukuhan sebelum penilaian Quiz dan Test. (2) Penasihan FE: Memastikan pelajar untuk menjawab contoh soalan peperiksaan akhir.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfp
						65.9	76.6	89.5							
						PLO001	PLO002	PLO005							
						65.9	76.6	89.5							
30	DJJ40173	ENGINEERING DESIGN	DKM4A, DKM4B, DKM4C, DKM4D, DKM4E	MZY	65	CLO01C	CLO02C	CLO03P	CLO04A				Secara keseluruhan, semua CLO dan PLO telah mencapai sasaran lebih daripada 50%, namun begitu, terdapat CLO3P adalah rendah berbanding CLO yang lain dengan nilai 87%. Ini disebabkan terdapat pelajar melaksanakan Practical tidak mengikut kriteria pemahaman yang telah ditetapkan	Untuk membantu meningkatkan pencapaian prestasi CLO dan PLO pada sesi akan datang, berikut adalah cadangan penambahbaikan yang boleh dipertimbangkan 1. Mengadakan demonstrasi dan latihan praktikal sebelum penilaian dilaksanakan. 2. Memberikan contoh hasil penilaian yang terbaik sebagai panduan pelajar untuk meningkatkan kemahiran praktikal mengikut kriteria yang telah ditetapkan.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan lfp
						65.9	83.5	77.6	94.1						
						PLO001	PLO003	PLO005	PLO007						
						65.9	83.5	77.6	94.1						

31	DJJ40182	PROJECT 1	DKM4A, DKM4B, DKM4C, DKM4D, DKM4E	ELI	75	CLO01C	CLO02C	CLO03A					Pada keseluruhannya semua CLO mencapai dan memenuhi target. Walaubagaimanapun CLO02C walaupun pantas memnuhi target ada sedikit kelemahan daripada analisis kaedah dan penyelesaian masalah.	1. Memastikan pelajar membuat perbincangan berkaitan permasalahan yang dikemui secara berkala. Berikan kebebasan dalam cadangan dan memastikan pelajar dapat hurakan penyelesaian secara relevan. 2. Mendedahkan pelajar kepada kertas penulisan teknikal.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Hfp
						78	72.6	81.6							
						PO002	PLO007	PLO011							
						78	72.6	81.6							
SEMESTER 5															
32	MPU21032	PENGHAYATAN ETIKA & PERADABAN	DKM5A	JPA	70	CLO01A	CLO02A	CLO03A					Indicator 1 : Tercapai 85% (pelajar melebihi gred B ke atas), 7.1 % (1) Gred D+ dan 7.1% (1) Gred F. Semua CLO dan PLOmelebihi 50% dan mencapai sasaran kursus. Indicator 4 tercapai: 93% pelajar hadir melebihi =80% ke atas. Seorang pelajar dibar.	Pelajar perlu lebih mencari info untuk menyediakan tugasan dan perlu berdisiplin serta mematuhi peraturan tugasan serta membaiki pengurusan mass pada semua dateline yang telah ditetapkan.	PENSYARAH KURSUS
						73.6	68.4	74.6							
						PLO008	PLO012								
						71	74.6								
33	MPU22012	ENTREPRENEURSHIP	DKM5A	HID	70	CLO01A	CLO02A	CLO03A					Indikator 1 :Tercapai (86.1% pencapaian melebihi gred C) Indicator 2 : Tercapai (Semua CLO melebihi 50% dan mencapai sasaran kursus iaitu 60%) Indicator 3 : Tercapai (Semua PLO melebihi 50% dan mencapai sasaran kursus iaitu 60%) Indikator 4 : Tercapai (100% pelajar hadir kuliah melebihi 80% kehadiran) Indikator 5 : Tercapai (100%)		PENSYARAH KURSUS
						86.1	77.5	76.8							
						PLO010	PLO011								
						86.1	77.1								
34	DUE50032	COMMUNICATIVE ENGLISH 3	DKM5A, DKM6A, DKM6B, DKM6D	NOOR ZAHILAH BINTI RAPAL	60	CLO01A	CLO02A	CLO03A					Indicator 1: Achieved target, 100% of students obtained grade C and above Indicators 2 and 3: CLO and PLO achieved the set target Indicator 4: Student attendance exceeded 80% Indicator 5: Not relevant because this course does not have a final examination	* Incorporating more practical exercises, simulated interview sessions, and reflective learning activities * Closely monitor attendance and academic engagement early in the semester and implement appropriate intervention measures * Maintain high attendance and active participation among students while providing additional support for those at risk of disengagement	PENSYARAH KURSUS
						69.8	72.1	74.4							
						PLO010	PLO012								
						72.1	72.1								
35	DJJ50193	PROJECT 2	DKM5A	AMD	70	CLO01P	CLO02P	CLO03A	CLO04P				Secara keseluruhan, semua CLO dan PLO telah mencapai sasaran lebih daripada 50%. namun begitu, peratus CLO1P & CLO2P menunjukkan peratus yang agak mengejut iaitu 68.4%.	Memastikan pelajar diberi ruang yang lebih bagi kedua-dua outcome ini supaya peratus pencapaian dapat ditingkatkan.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Hfp
						68.4	68.4	100	94.7						
						PLO003	PLO004	PLO010	PLO011						
						68.4	68.4	100	94.7						
36	DJJ50203	TROBLESHOOTING & MAINTENANCE FOR MECHANICAL COMPONENT	DKM5A	CHAI	55	CLO01C	CLO02P	CLO03C					Secara keseluruhan, semua CLO dan PLO telah mencapai sasaran lebih daripada 50%. Namun begitu, peratus CLO01C adalah yang terendah berbanding CLO yang lain iaitu 60.1.	Pelaksanaan satu Aktiviti Simulasi Kerosakan komponen mekanikal di dalam kelas.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Hfp
						60.1	74.3	84.1							
						PLO001	PLO004	PLO005							
						60.1	84.1	74.3							
37	DJJ50212	MAINTENANCE ENGINEERING & MANAGEMENT	DKM5A	IS	55	CLO01C	CLO02C	CLO03A					Indikator 1 :Tercapai (86.7% pencapaian melebihi gredC). Indicator 2 dan 3 : Tercapai (Semua CLO PLOmelebihi 50% dan mencapai sasaran kursus iaitu 62.3%, 57.8% DAN 77.9%) Indikator 4 : Tercapai(100% pelajar hadir kuliah melebihi 80% kehadiran) Indikator 5 : N/A	1. Melaksanakan aktiviti discuss and share dan forum bagi menarik minat pelajar terhadap kandungan kursus. 2. Melaksanakan case study dan mencari maklumat presentation di tempat kerja yang sebenar (industri) bagi mengukuhkan kefahaman pembelajaran.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Hfp
						62.3	57.8	77.9							
						PLO001	PLO007	PLO011							
						62.3	57.8	77.9							
38	DJJ42032	INSTRUMENTATION AND CONTROL	DKM5A	WNH	70	CLO01C	CLO02C	CLO03A					Most students (93.3%) passing all CLOs. The lowest attainment is in exploring measurement and process control systems, indicating this area needs improvement. Communication skills and instrumentation fundamentals show strong results.	To improve group attainment, especially in measurement and process control, more hands-on activities and practical demonstrations will be added. Enhanced training on these topics and better resources will be provided to help students understand complex systems more clearly.	Penyarah kursus: Laksanakan cadangan CQI. Penyelaras kursus: Catatkan di ePNP dan Hfp
						93.2	64.5	85.9							
						PLO002	PLO008	PLO010							
						93.2	64.5	85.9							

SEMESTER 6															
40	DUT6000610	INDUSTRIAL TRAINING	DKM6A DKM6B DKM6C DKM6D	ALC	80	CLO01P	CLO02A	CLO03A	CLO04P	CLO05A	CLO06C	CLO07P	Indikator 1 :Tercapai (100%) Indicator 2 dan 3 : Tercapai (Semua CLO PLO melebihi 80% dan mencapai sasaran kursus iaitu 100%)		
						100	100	100	100	100	100	100			
						PLO005	PLO006	PLO008	PLO009	PLO010	PLO012				
						100	100	100	100	100	100				

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
SUMMARY : PROGRAMME LEARNING OUTCOME

1. COURSE INFORMATION

PROGRAMME : **DKM - DIPLOMA KEJURUTERAAN MEKANIKAL**
SEMESTER : **1**
SESI : **II : 2024/2025**

2. PROGRAMME LEARNING OUTCOME

PLO	CONTENT	COURSE												GROUP ATTAINMENT (%)
		DBM10163	DBS10042	DJJ10223	DJJ10232	DJJ10243	DUE10062	DUW10042	MPU24031	MPU24041	MPU24151	MPU24161	MPU24191	
PLO001	apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively to wide practical procedures and practices	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO01	apply knowledge of mathematics, science and engineering fundamentals to well-defined mechanical engineering procedures and practices	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO002	identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO02	analyse well-defined mechanical engineering problems with respect to operation and maintenance, including troubleshooting	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO03	conduct investigations and assist in the design of solutions for mechanical engineering systems	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO003	design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (DK5)	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO004	conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO04	apply appropriate techniques, resources, and engineering tools to well-defined mechanical engineering activities, with awareness of the limitations	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO05	demonstrate an awareness and consideration for societal,health,safety, legal, and cultural issues and consequent responsibilities	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO005	apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO006	demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well-defined engineering problems (DK7)	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO06	communicate effectively with the engineering community and society at large	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO07	function effectively as an individual and as a member in diverse technical teams	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO007	understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts (DK7)	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO008	understand and commit to professional ethics and responsibilities and norms of technician practice	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO08	demonstrate an understanding of professional ethics, responsibilities and norms of engineering practices	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO09	demonstrate an awareness of management, business practices and entrepreneurship	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO009	function effectively as an individual, and as a member in diverse technical teams	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO010	communicate effectively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO10	demonstrate an understanding of the impact of engineering practices, taking into account the need for sustainable development	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO11	recognise the need for professional development and to engage in independent and lifelong learning	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO011	demonstrate knowledge and understanding of engineering management principles and apply these to one?s own work, as a member or leader in a technical team and to manage projects in multidisciplinary environments	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO012	recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO0101	apply knowledge of applied mathematics, applied science, computer and engineering fundamentals and an engineering specialisation as specified in DK1 to	62.4	60.0	61.3	xx	55.1	xx	69.5	xx	xx	xx	xx	xx	**61.7**

	DK4 respectively to wide practical procedures and practices in area of mechanical engineering													
PLO0102	identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to mechanical engineering field (DK1 to DK4)	55.9	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**55.9**
PLO0103	design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety as well as, cultural, societal and environmental considerations in area of mechanical engineering (DK5)	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx
PLO0104	conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements (DK8)	xx	79.0	xx	xx	xx	xx	83.1	xx	xx	xx	xx	xx	**81**
PLO0105	apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations (DK2 and DK6)	xx	xx	65.7	84.9	xx	xx	xx	92.7	80.0	90.0	73.3	85.0	**81.7**
PLO0106	consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the envoronment, in solving well- defined engineering problems (DK1,DK5 and DK7)	xx	82.8	xx	84.7	xx	xx	78.4	xx	xx	xx	xx	xx	**82**
PLO0107	understand and commit to professional ethics and responsibilities and norms of technician practice and including complience with national and international laws. Demonstrate an understanding of the need for diversity and inclusion(DK9)	xx	xx	63.3	xx	62.3	xx	xx	xx	xx	xx	xx	xx	**62.8**
PLO0108	function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings (DK9)	74.4	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	xx	**74.4**
PLO0109	communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions	xx	xx	xx	xx	xx	73.9	xx	xx	xx	xx	xx	xx	**73.9**
PLO0110	demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments	xx	xx	xx	xx	xx	xx	xx	64.3	74.5	97.0	71.9	90.0	**79.5**
PLO0111	recognise the need for, and have the ability for i) independent and life long learning and ii) critical thinking in the face of specialised technical knowledge(DK8)	xx	xx	xx	xx	81.4	74.0	xx	xx	xx	xx	xx	xx	**77.7**

REFLECTION (KOMEN DAN CADANGAN)

PENCAPAIAN / ACHIEVEMENT	CADANGAN (Cadangan untuk baiki PLO yang lemah< 50%)
Secara keseluruhan, pencapaian kumpulan adalah baik dengan kebanyakan PLO melebihi 50%. Walau bagaimanapun, terdapat kelemahan ketara pada aspek asas kejuruteraan (PLO0101) dan analisis teknikal (PLO0102) yang perlu diberi perhatian untuk penambahbaikan.	Bagi meningkatkan lagi prestasi PLO 1 dan 2 iaitu melibatkan pengetahuan dan analisa masalah. Prestasi ini terkesan dengan kursus: 1. TEchnology Worksyop 2. Mathematic 1 . Bagi meningkatkan prestasi tersebut penyelaras dicadangkan melihat lebih terperinci task yang telah dipetakan pada CLO tersebut. Penilaian prestasi kursus yang rendah dikenalpasti dan dibuat penambahbaikkan samaada dengan semak semula tahap soalan dan perbanyakkan latihan formatif.

Kemaskini Rekod | Cetak PLORR

7. PREPARED BY / DISEDIAKAN OLEH

	Nama	Signature	Date:
Ketua Program	MOHD SHARIZAN BIN MOHD SHARIF		
Ketua Jabatan			

MOHD SHARIZAN BIN MOHD SHARIF
KETUA PROGRAM
DIPLOMA KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN
ABDUL AZIZ SHAH

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
PLANNING COURSE REPORT OF TEACHING AND LEARNING

Session	:	SESI I:2025/2026	Semester	: 3
Program	:	DMP		
Course	:	THERMODYNAMIC	Course Code	: DJJ20063
Course Structure	:	**THEORY** 46 **TUTORIAL/PRACTICAL** 10		
Total Hours Per semester	:	56		

Course Lecturer:

Name Of Lectuer	Class	Present(/)	Absent(/)	Remark
NO RECORD				

1) TEACHING METHODS/TECHNIQUES

State teaching methods/techniques use in each topics. You may tick (/) more than one options.

TEACHING METHODS/TECHNIQUES	TOPIC											
	1	2	3	4	5	6	7	8	9	10	11	12
MULTIMEDIA PRESENTATION	/1	/2	/3	/4								
BRAINSTORMING												
INTERACTIVE LEARNING	/1	/2	/3	/4								
FORUM												
DEBATE												
GROUP DISCUSSION	/1	/2	/3	/4								
QUESTIONING												
BUZZ SESSION												
SIMULATION					/5							
DEMONSTRATION					/5							
ROLE PLAY												
PROBLEM-BASED LEARNING (PROBLEM SOLVING)	/1	/2	/3	/4								

CASE-BASED LEARNING												
INDUSTRIAL/COMMUNITY BASED LEARNING												
EXPERIENCE SHARING												
PROJECT-BASED LEARNING												
SEMINAR												
GAMES												
COOPERATIVE-BASED LEARNING												
STORY TELLING												
FIELD WORK												
WORK-BASED LEARNING (WBL)												
VISIT												
FIELD TRIP												
PRACTICAL WORK					/5							
WEBINAR												
INVESTIGATION												
GROUP ACTIVITY												
INDIVIDUAL ACTIVITY												
GIVE ONE GET ONE												
PLACE MAT												
ROUND TABLE ROUND ROBBIN												
THINK PAIR SHARE												
JIGSAW PUZZLE												
JIGSAW TECHNIQUES												
DIAMOND DINE												
GALLERY WALK												
2-MINUTES TALK												

INDEPENDENT STUDY	/[1]	/[2]	/[3]	/[4]								
ONLINE LEARNING												
PRESENTATION												
WRITING												
INDUSTRIAL TALK												
TUTORIAL	/[1]	/[2]	/[3]	/[4]								
WEB BASED LEARNING												
PAST EXAM PAPERS	/[1]	/[2]	/[3]	/[4]								
PROJECT SUMMARIES												
DOCUMENTS AND REPORTS					/[5]							
STANDARD WORK MANUAL												
INTERACTIVE LECTURE												
INDUSTRIAL PROBLEM SOLVING												
COMPUTATIONAL THINKING												
ANALYTICS OF EMOTIONS												
CROSSOVER LEARNING												
INQUIRY BASED LEARNING												
GAME-BASED LEARNING												
Q&A												
YOUTUBE												
GOOGLE MEET CLASSROOM												

2) INSTRUCTIONAL MATERIALS

Resources are documents in a form of hardcopy/softcopy/on-line which are used/ developed and incorporated with various materials.You may include more than one categories.

INSTRUCTIONAL MATERIALS/EQUIPMENT		QUANTITY	TITLE/TOPICS	PUBLICATION	
				PSA	EXTERNAL
PRINTED BASED	TEXTBOOKS: WORKBOOKS / MODULES	1	THERMODYNAMICS POLYTHECNIC APPROACH		/
	HANDOUT: LABSHEET/ WORKSHEET/ MANUALS/ GUIDELINES				
	OTHERS				
ACCESS TO NETWORK COMPUTER	LEARNING MANAGEMNET SYSTEM (CIDOS)				
	BLOGSPOT/ KAHOOT/ OPEN LEARNING-MOOC				
	OTHERS				
AUDIO VISUAL AIDS	MULTIMEDIA PROJECTOR	1			
	CD/ DVD				
	VIDEO CLIP/ E-TEXT BOOKS/ EMODULES/ SOFTWARE)				
	OTHERS				
ADVANCED TECHNOLOGIES	TELECONFERENCING(ex: FACEBOOK LIVE)				
	CLOSED-CIRCUIT TV/ CLOSEDCIRCUIT CAMERA TV				
	MOBILE-LEARNING (APPLICATIONS)				
	OTHERS (360 VR/ AUGMENTED LEARNING)				
	OTHERS				

3) TEACHING & LEARNING ASSESSMENTS (SEMESTER)

Details of assessment based on the syllabus.

TYPE OF ASSESSMENT (refer to the syllabus)	NO OF ASSESSMENT	(%) ASSESSMENT	CLO	PREPARED BY
QUIZ	2	10	1,2	MOHD ZULKARNAEN BIN MOHD IBRAHIM
END OF CHAPTER	2	15	1,2	MOHD ZULKARNAEN BIN MOHD IBRAHIM
TEST	2	15	1,2	MOHD ZULKARNAEN BIN MOHD IBRAHIM

REPORT	4	10	3	MOHD ZULKARNAEN BIN MOHD IBRAHIM

4) RECOMMENDATION FOR CURRICULUM IMPROVEMENT

Refer to the previous semester CORR dan PLORR reports.

OVERVIEW	ADD	DROP	REVIEW	JUSTIFICATION
LEARNING OUTCOMES			/	CLO1 MUST BE CHANGE FROM C2 TO C3
ALLOCATED HOURS				
CONTENT STRUCTURE				
INSTRUCTIONAL MATERIALS				
EQUIPMENT/ SOFTWARE				
ASSESSMENT	/			PENILAIAN SECARA FORMATIVE PERLU DIBUAT SEBELUM KE TOPIK SETERUSNYA. ANTARA CADANGAN ADALAH QUIZ SECARA KAHOOT.
TOPIC				

5) OTHERS

Needs/requirements in teaching and learning.

NEEDS/REQUIREMENTS	JUSTIFICATION
EXPERIMENT APPARATUS	FOR EXPERIMENT PURPOSE

MOHD ZULKARNAEN BIN MOHD IBRAHIM
Coordinator/Lecturer
Date :

MOHD ZULKARNAEN BIN MOHD IBRAHIM
PENSYARAH
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN
ABDUL AZIZ SHAH

MOHD SHARIZAN BIN MOHD SHARIF
Head of Programe/Head of Department
Date : 1/8/2025

MOHD SHARIZAN BIN MOHD SHARIF
KETUA PROGRAM
DIPLOMA KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN
ABDUL AZIZ SHAH

Appendix C3-1a : Mapping of DKM Programme Credit Unit with Standard Programme for Engineering and Technology Engineering by Malaysian Qualifications Accreditation (MQA).

	BODY OF KNOWLEDGE (BOK)	CREDITS REQUIRED BY MQA	DKM CREDIT	STATUS
COMPULSARY MODULES				
I. National Requirement	Bahasa Melayu, Malaysian Studies, Islamic/Moral Studies	9 - 15	**13**	**COMPLY**
II. HEPs Requirement	Social Science / Humanities Options, Co-Curriculum			
iii. Personal Development	Languages, Communication Skills - Presentations			
CORE MODULES				
I. Common Core	i. Mathematics	9 - 22	**17**	**COMPLY**
	ii. Science			
	iii. Professional Development Modules which include topics such as Work Ethics, Sustainable Issues and Entrepreneurship.			
II. Discipline Core	To be determined by the institutions according to the needs of the programme	47 - 53	**53**	**COMPLY**
INDUSTRIAL TRAINING				
Attachment to a relevant workplace		4 - 12	**10**	**COMPLY**
ELECTIVE MODULES				
		0 - 9	**2**	**COMPLY**
MINIMUM GRADUATING CREDITS				
		90	**93**	**COMPLY**

Mapping of DKM programme with ETAC Entry Requirement

	COMPONENTS	REQUIRED BY ETAC	DKM	STATUS
1.	Minimum SLT Credit Units	90	**93**	**COMPLY**
	A minimum of SLT credit units in engineering or engineering technology courses	60	**63**	**COMPLY**
	Practice-oriented components in the technical and specialists areas	30	**30**	**COMPLY**
2.	Final year project	4 - 6	**5**	**COMPLY**
3.	Industrial training	Minimum of 16 weeks	**20**	**COMPLY**
4.	Full-time Teaching staff	Minimum of 6	**25**	**COMPLY**
5.	Staff: Student ratio	1: 20 or better	**1:1 6**	**COMPLY**
6.	External examiner report	One report over two years	**1**	**COMPLY**
7.	Programme Educational Objectives			
8.	Programme Outcomes			

Appendix C3-1b : List Of Non Engineering Course for DKM

Component	Semester	Code	Course	Lecture (L)	Practical(P)	Tutorial (T)	Credit Hour	Sub Area	Area	Dublin Knowledge (DK)
Compulsory	Sem 1	DUE10062	Technical English 1	1	0	2	2	Language	Personal Devolopement	DK7
		MPU 24XX1	Sukan 1	0	2	0	1	Co-Curiculum		
			Kelab / Persatuan 1							
			Unit Beruniform 1							
	Sem 2	MPU21072	Penghayatan Etika dan Peradaban	1	0	2	2	Religious & Moral Studies		
		MPU 24XX1	Sukan 2	0	2	0	1	Co-Curiculum		
			Kelab / Persatuan 2							
			Unit Beruniform 2							
		MPU22071	Integriti dan Anti-Rasuah	0	0	2	1	Religious & Moral Studies		
	Sem 3	DUE30072	Technical English 2	1	0	2	2	Language		
	Sem 5	MPU23182	Sains Teknologi dan Kejuruteraan Islam*	1	0	2	2	Religious & Moral Studies		
		MPU23172	Nilai Masyarakat Malaysia**							
		DUE50082	Technical English 3	1	0	2	2	Language		
						Total Credit	**13**			

Component	Semester	Code	Course	Lecture (L)	Practical(P)	Tutorial (T)	Credit Hour	Sub Area	Area	Dublin Knowledge
Common Core	Sem 1	DUW10042	Occupational, Safety and Health for Engineering	2	0	0	2	Occupational, Safety and Health for Engineering	Workplace Competencies	DK7
		DBM10163	Engineering Mathematics 1	2	0	2	3	Applied Sciences	Mathematics	DK2
		DBS10042	Engineering Science	2	1	0	2	Sciences	Science	DK1
	Sem 2	DBM20173	Engineering Mathematics 2	2	0	2	3	Applied Sciences	Mathematics	DK2
	Sem 3	DBM30183	Engineering Mathematics 3	2	0	2	3	Applied Sciences	Mathematics	DK2
		DJJ30332	Engineering and Society	2	0	0	2	Personal Devolopement	Personal Devolopement	DK1
	Sem 5	MPU22062	Entrepreneurship	1	2	0	2	Entrepreneurship	Entrepreneurship	DK7
						Total Credit	**17**			

Appendix C3-1C : Technical Course / Engineering Related Course for DKM

Component	Semester	Code	Courses	LECTURE	PRACTICAL	TUTORIAL	CREDIT	BoK	Dublin Knowledge
Discipline Core	SEMESTER 1	DJJ10223	Engineering Drawing	1	3	0	3	Mechanical Design	DK5
		DJJ10232	Mechanical Workshop Practice 1	0	4	0	2	Workshop Practice	DK6
		DJJ10243	Workshop Technology	3	0	0	3	Manufacturing	DK4
	SEMESTER 2	DJJ20252	Mechanical Workshop Practice 2	0	4	0	2	Workshop Practice	DK6
		DJJ20263	Electrical and Electronic Technology	2	1	1	3	Electrical	DK3
		DJJ20273	Fluid Mechanics	2	1	1	3	Fluid Mechanics	DK3
		DJJ20282	Computer Aided Design	1	2	0	2	Mechanical Design	DK5
	SEMESTER 3	DJJ30302	Mechanical Workshop Practice 3	0	4	0	2	Workshop Practice	DK6
		DJJ30313	Engineering Mechanics	2	1	1	3	Static Dynamics	DK3
		DJJ30323	Strength of Materials	2	1	1	3	Solid Material	DK4
		DJJ30293	Thermodynamics	2	1	1	3	Thermodynamics and Heat Transfer	DK3
	SEMESTER 4	DJJ40343	Material Science and Engineering	2	1	1	3	Material and Heat Transfer	DK3
		DJJ40373	Pneumatic and Hydraulics	2	1	1	3	Instrumentation & Control	DK4
		DJJ40383	Engineering Design	2	1	1	3	Mechanical Design	DK5
		DJJ40363	Mechanics of Machines	2	1	1	3	Static and Dynamics	DK3
		DJJ40392	Project 1	2	0	0	2	Mechanical Design	DK4
	SEMESTER 5	DJJ50403	Project 2	1	3	0	3	Mechanical Design	DK4
		DJJ50413	Troubleshooting and Maintenance for Mechanical Components	2	1	1	3	Mechanical Maintenance	DK4
		DJJ50422	Maintenance Engineering and Management	2	0	0	2	Mechanical Maintenance	DK4
Electives	SEMESTER 4	DJJXXXX	Elective				2		
Industrial Training	SEMESTER 6	DUT600910	Engineering Industrial Training	0	0	0	10	Workplace Competencies	DK7

Appendix C3-1d: Programme Structure for Diploma in Mechanical Engineering

COURSE TYPE	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT VALUES
			L	P	T	O	
SEMESTER 1							
Compulsory	DUE10062	Technical English 1	1	0	2	0	2
	MPU 24031	Sukan 1	0	2	0	0	1
	MPU 24041	Kelab / Persatuan 1					
	MPU 24XX1	Unit Beruniform 1					
Common Core	DUW10042	Occupational, Safety and Health for Engineering	2	0	0	0	2
	DBM10163	Engineering Mathematics 1	2	0	2	0	3
	DBS10042	Engineering Science	2	1	0	0	2
Discipline Core	DJJ10223	Engineering Drawing	1	3	0	0	3
	DJJ10232	Mechanical Workshop Practice 1	0	4	0	0	2
	DJJ10243	Workshop Technology	3	0	0	0	3
TOTAL			11	10	4	0	18
SEMESTER 2							
Compulsory	MPU21072	Penghayatan Etika dan Peradaban	1	0	2	0	2
	MPU 24051	Sukan 2	0	2	0	0	1
	MPU 24061	Kelab / Persatuan 2					
	MPU 24XX1	Unit Beruniform 2					
	MPU22071	Integriti dan Anti-Rasuah	0	0	2	0	1
Common Core	DBM20173	Engineering Mathematics 2	2	0	2	0	3
Discipline Core	DJJ20252	Mechanical Workshop Practice 2	0	4	0	0	2
	DJJ20263	Electrical and Electronic Technology	2	1	1	0	3
	DJJ20273	Fluid Mechanics	2	1	1	0	3
	DJJ20282	Computer Aided Design	1	2	0	0	2
TOTAL			8	10	8	0	17
SEMESTER 3							
Compulsory	DUE30072	Technical English 2	1	0	2	0	2
Common Core	DBM30183	Engineering Mathematics 3	2	0	2	0	3
	DJJ30332	Engineering and Society	2	0	0	0	2
Discipline Core	DJJ30302	Mechanical Workshop Practice 3	0	4	0	0	2
	DJJ30313	Engineering Mechanics	2	1	1	0	3
	DJJ30323	Strength of Materials	2	1	1	0	3
	DJJ30293	Thermodynamics	2	1	1	0	3
TOTAL			11	7	7	0	18
SEMESTER 4							
Discipline Core	DJJ40343	Material Science and Engineering	2	1	1	0	3
	DJJ40373	Pneumatic and Hydraulics	2	1	1	0	3
	DJJ40383	Engineering Design	2	1	1	0	3
	DJJ40363	Mechanics of Machines	2	1	1	0	3
	DJJ40392	Project 1	2	0	0	0	2
Electives	DJJXXXX	Elective					2
TOTAL			10	4	4	0	16
SEMESTER 5							

Compulsory	MPU23182	Sains Teknologi dan Kejuruteraan Islam*	1	0	2	0	2
	MPU23172	Nilai Masyarakat Malaysia**					
	DUE50082	Technical English 3	1	0	2	0	2
	MPU22062	Entrepreneurship	1	0	2	0	2
Discipline Core	DJJ50403	Project 2	1	3	0	0	3
	DJJ50413	Troubleshooting and Maintenance for Mechanical Components	2	1	1	0	3
	DJJ50422	Maintenance Engineering and Management	2	0	0	0	2
TOTAL			6	11	2	0	14
SEMESTER 6							
Industrial Training	DUT600910	Engineering Industrial Training	0	0	0	0	10
TOTAL			0	0	0	0	10

Course Type	**Total Credit**	**Total %**
i. Compulsory	15	32%
ii. Common Core	15	
iii. Discipline Core	51	66%
iv. Specialization	0	
v. Industrial Training	10	
vi. Electives	2	2%
Total Credit	**93**	**100%**

Engineering and Engineering Technology Courses		
Total Credit (Discipline Core, Specialization, Industrial Training)	63	
	Credit	**%**
i. Practice - Oriented Components	30	48%
ii. Engineering Technology (Specialization)	0	0%

Appendix C3-1e : Mapping of DKM's POs to the ETAC Knowledge Profile (DK), Well-Defined Problem Solving (DP) and Well-Defined Engineering Activities (NA)

PROGRAM LEARNING OUTCOME	DK (Knowledge Profile)									(DP) Dublin Problems							NA (Activity Engineering)				
	DK1	DK2	DK3	DK4	DK5	DK6	DK7	DK8	DK9	DP1	DP2	DP3	DP4	DP5	DP6	DP7	NA1	NA2	NA3	NA4	NA5
PLO1: Engineering Knowledge	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		/		
PLO2: Problem Analysis	/	/	/	/	/	/	/	/		/	/	/	/	/			/	/			
PLO3:Design/Development of Solutions	/	/	/	/	/	/	/	/		/	/	/	/		/	/	/	/	/	/	/
PLO4:Investigation	/	/	/	/	/	/		/		/	/	/	/	/	/	/	/	/	/	/	/
PLO5: Tool Usage	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/		/		
PLO6: The Engineer and the world	/	/	/	/	/	/	/			/	/	/	/	/	/	/	/			/	
PLO7: Ethics	/		/	/	/	/	/	/	/	/	/	/	/	/			/			/	
PLO8: Individual and Collaborative Team work	/	/	/	/		/			/	/	/	/	/								
PLO9: Communication	/	/	/	/	/	/	/	/		/	/	/	/	/	/	/	/	/	/	/	/
PLO10:Project Management and Finance	/	/	/	/	/		/	/		/	/	/	/		/	/	/	/	/	/	/
PLO11:Lifelong Learning	/	/	/	/		/		/	/	/	/	/	/	/							

Well-defined (DPs) and Well-defined Engineering Activities (NAs) and Knowledge Profile (DKs) Assessment Form

DIPLOMA IN MECHANICAL ENGINEERING

ISI PADA KOTAK BERWARNA KUNING

TICK PADA PLO YANG BERSESUAIAN 1 ROW UNTUK 1 PLO

DK 1 - DK 8 - DELETE DK YANG TIDAK BERKESUAIAN

DP 1 IS A MUST UNTUK SETIAP KURSUS

TICK PADA DP YANG SESUAI MENGIKUT TUGASAN/RUBRIK

TICK PADA SDG YANG SESUAI MENGIKUT KURSUS/ TUGASAN/RUBRIK

TICK PADA SDG YANG SESUAI MENGIKUT KURSUS/ TUGASAN/RUBRIK

| NO. | CODE | COURSES | L | P | T | CREDIT VALUE | PLO1: Engineering Knowledge (DK1, DK2, DK3, DK4) | PLO2: Problem Analysis (DK1, DK2, DK3, DK4) | PLO3:Design/Development of Solutions (DK5) | PLO4:Investigation (DK6) | PLO5: Tool Usage (DK1,DK6) | PLO6: The Engineer and the world (DK1,DK6,DK7) | PLO7: Ethics (DK5) | PLO8: Individual and Collaborative Team work (DK8) | PLO9: Communication (VA) | PLO10:Project Management and Finance | PLO11:Lifelong Learning (DK8) | PERFORMANCE OUTCOMES (PO/NO) | COURSE OUTCOMES (CO) STATEMENT | LEVELS IN BLOOM TAXONOMY | PLEASE TICK (√) RELEVANT GRADUATE ATTRIBUTES (GA) & KNOWLEDGE PROFILES (DK) | | | | | | | | | | WELL-DEFINED PROBLEM SOLVING (CP) PLEASE TICK (√) RELEVANT DPs | | | | | | | | ASSIGNMENT / PROJECT WELL-DEFINED ENGINEERING ACTIVITIES (NAs) | | | | | SUSTAINABLE DEVELOPMENT GOALS | | | | | | | | | |

| | | |

| | | |

Teaching & Learning (T&L) and Assessment

COURSE				DELIVERY METHOD							ASSESSMENT METHOD												
SEM	COURSE CODE	COURSE	COURSE TYPE	Interactive Lecture	Discussion	Demonstration	Tutorial	Presentation	Practical	Others	Quiz	Test	Case Study	Presentation	Practical Work	Practical Product	Practical Task	Assignment	Mini Project	Simulation	Report	Generic Skill	Final Examination	Others
1	DUE10062	Technical English 1	Compulsory	√						√				√				√		√				√
	MPU 24031	Sukan 1		√	√														√					√
	MPU 24041	Kelab/Persatuan 1		√	√														√					√
	MPU 24XX1	Unit Berunifrom 1		√	√														√					√
	DUW10042	Occupational, Safety and Health for Engineering	Common Core	√	√						√	√	√	√										
	DBM10163	Engineering Mathematics 1		√							√	√											√	√
	DBS10042	Engineering Science		√								√			√				√					
	DJJ10223	Engineering Drawing	Discipline Core	√	√	√			√			√		√	√									√
	DJJ10232	Mechanical Workshop Practice 1				√			√						√	√						√		
	DJJ10243	Workshop Technology		√		√					√	√	√	√				√					√	
2	MPU21072	Penghayatan Etika Dan Peradaban	Compulsory																					
	MPU 24051	Sukan 2		√	√														√					√
	MPU 24061	Kelab/Persatuan 2		√	√														√					√
	MPU 24XX1	Unit Beruniform 2		√	√														√					√
	MPU 22071	Kursus Integriti dan Anti-Rasuah																						
	DBM20173	Engineering Mathematics 2	Common Core	√							√	√											√	√
	DJJ20252	Mechanical Workshop Practice 2	Discipline Core			√			√						√	√						√		
	DJJ20263	Electrical and Electronic Technology		√	√	√	√			√	√	√						√					√	
	DJJ20273	Fluid Mechanics		√	√	√	√			√	√						√	√					√	
	DJJ20282	Computer Aided Design		√		√			√			√		√			√							√

COURSE				DELIVERY METHOD							ASSESSMENT METHOD													
SEM	COURSE CODE	COURSE	COURSE TYPE	Interactive Lecture	Discussion	Demonstration	Tutorial	Presentation	Practical	Others	Quiz	Test	Case Study	Presentation	Practical Work	Practical Product	Practical Task	Assignment	Project	Simulation	Report	Generic Skill	Final Examination	Others
3	DUE30072	Technical English 2	Compulsory	√						√				√				√						√
	DBM30183	Engineering Mathematics 3	Common Core	√							√	√	√										√	√
	DJJ30332	Engineering and Society		√	√						√	√	√	√										
	DJJ30302	Mechanical Workshop Practice 3	Discipline Core		√	√			√		√				√	√		√				√		
	DJJ30313	Engineering Mechanics		√	√	√	√		√		√	√			√			√				√	√	
	DJJ30323	Strength of Materials		√		√	√		√		√	√			√			√					√	
	DJJ30293	Thermodynamics		√	√	√	√		√		√	√			√			√					√	
4	DJJ40343	Material Science and Engineering	Discipline Core	√			√		√		√	√			√							√	√	
	DJJ40373	Pneumatic and Hydraulics		√	√	√			√		√	√						√					√	
	DJJ40363	Mechanics of Machines		√	√	√	√		√		√	√			√			√					√	
	DJJ40383	Engineering Design		√	√	√			√			√	√	√	√									
	DJJ40392	Project 1		√	√									√	√						√			√
	DJJ40442	Industrial Management	Electives	√	√		√			√	√	√	√	√										
	DJJ40452	Instrumentation and Control		√	√					√	√	√	√	√										
5	MPU23182	Sains Teknologi dan Kejuruteraan Islam	Compulsory	√	√								√											√
	MPU23172	Nilai Masyarakat Malaysia		√	√			√		√			√											√
	DUE50032	Technical English 3		√						√	√							√		√				
	DUU10072	Entrepreneurship	Common Core	√										√							√			√
	DJJ50403	Project 2	Discipline Core		√				√		√			√							√			√
	DJJ50413	Troubleshooting and Maintenance for Mechanical Components		√		√	√				√	√			√		√							
	DJJ50422	Maintenance Engineering and Management		√	√						√	√	√		√									

JABATAN KEJURUTERAAN MEKANIKAL
DJJ 40392 PROJECT 1
RUBRIC FOR LOGBOOK

CLO1: IDENTIFY THE ENGINEERING PROBLEMS IN MECHANICAL ENGINERING FIELDS (C4, PLO2)
PLO2: IDENTIFY AND ANALYSE WELL-DEFINED ENGINEERING PROBLEMS REACHING SUBSTANTIATED CONCLUSIONS USING CODIFIED METHODS OF ANALYSIS SPECIFIC TO MECHANICAL ENGINEERING FIELD (DK1 to DK4)

PLO	CLO	DK	DP	ITEM	ATTRIBUTES	RUBRIC SCALES				WEIGHTAGE	SCORE
						EXCELLENT	GOOD	WEAK	POOR		
						4	3	2	1		
IDENTIFY AND ANALYSE WELL-DEFINED ENGINEERING PROBLEMS REACHING SUBSTANTIATED CONCLUSIONS USING CODIFIED METHODS OF ANALYSIS SPECIFIC TO MECHANICAL ENGINEERING FIELD (DK1 to DK4)	IDENTIFY THE ENGINEERING PROBLEMS IN MECHANICAL ENGINERING FIELDS (C4, PLO2)	DK1 to DK4	DP1: Cannot be resolved without extensive practical knowledge as reflected in DK5 and DK6 supported by theoretical	PROJECT INTRODUCTION	**Ability to comply project requirements by proper documented evidence according to log book format**	Demonstrate comprehensive project progress that conclude ALL the below item: 1) project title 2) problem statements 3) objectives and scope with evidenced of multiple suggestion and corrective on supervisor comments and suggestions. 4) excellent documented log book as given standard with graphic and related sketch.	Demonstrate comprehensive project progress that conclude **THREE** from all the below item: 1) project title, 2) problem statements 3) objectives and scope with evidenced of multiple suggestion and corrective on supervisor comments and suggestions. 4) Excellent documented log book as given standard with graphic and related sketch.	Demonstrate comprehensive project progress that conclude **TWO** from all the below item: 1) project title, 2) problem statements 3) objectives and scope with evidenced of multiple suggestion and corrective on supervisor comments and suggestions. 4) Excellent documented log book as given standard with graphic and related sketch.	Demonstrate comprehensive project progress that conclude **ONLY ONE** from all the below item: 1) project title, 2) problem statements 3) objectives and scope with evidenced of multiple suggestion and corrective on supervisor comments and suggestions. 4) Excellent documented log book as given standard with graphic and related sketch.	1	5
					Ability to show project planning and execution by proper documented evidence 1. List of activities, 2. Time Frame, 3. Evidence of execution according to planning or stated revised date, 4. Evidenced on active supervision corrective action.	Demonstrate excellent project planning including **Gantt chart** with evidence of execution acordingly with PDCA. **FULLY** documented evidence as listed below: 1. list of activities 2. time frame 3. evidence of execution according to planning or stated revised date 4. evidenced on active supervision corrective action.	Demonstrate excellent project planning including Gantt chart with evidence of execution acordingly with PDCA. Documented **THREE** evidences from the list below: 1. list of activities 2. time frame 3. evidence of execution according to planning or stated revised date 4. evidenced on active supervision corrective action.	Demonstrate excellent project planning including Gantt chart with evidence of execution acordingly with PDCA. Documented **TWO** evidences from the list below: 1. list of activities 2. time frame 3. evidence of execution according to planning or stated revised date 4. evidenced on active supervision corrective action.	Demonstrate excellent project planning including Gantt chart with evidence of execution acordingly with PDCA. Documented **ONE** evidence from the list below: 1. list of activities 2. time frame 3. evidence of execution according to planning or stated revised date 4. evidenced on active supervision corrective action.	1	5
			DP2: Involve several issues, but with few of these exerting conflicting constraints	IDENTIFICATION OF PROBLEM	**Ability to analyze the project problem and interpretation, figure out related constraints.**	Able to clearly analyze engineering problem with **3** strong justifications. Ability to figure out **3** predicted constraints/problems which relate to the objectives. Determined **measurable objectives** with literature review or references.	Able to clearly analyze engineering problem with 2 strong justifications. Ability to figure out 2 predicted constraints/problems which relate to the objectives. Determined measurable objectives with literature review or references.	Able to clearly analyze engineering problem with 1 strong justifications. Ability to figure out 1 predicted constraints/problems which relate to the objectives. Determined measurable objectives with literature review or references.	Problem statement stated however no constraint/problems define, objectives stated but not measurable and deliverables are not clear.	1	5
			DP3: Can be solved in standardised ways		**Ability to determine comprehensive flowchart with detailed engineering tools and process to developed methodologies**	Able to determine comprehensive flowchart with **ALL** detailed tools/methodologies as below: 1) material selection 2) AI element (E.g: ChatGPT, Gemini, CoPilot etc.) 3) method of project development 4) analysis	Able to determine comprehensive flowchart with **THREE** detailed tools/methodologies as below: 1) material selection 2) AI element (E.g: ChatGPT, Gemini, CoPilot etc.) 3) method of project development 4) analysis	Able to determine comprehensive flowchart with **TWO** detailed tools/methodologies as below: 1) material selection 2) AI element 3) method of project development 4) analysis and engineering mechanism utilizes the tools correctly and consistently	Determined with inappropriate tools are chosen and the tools are not applied correctly	1	5
										TOTAL MARKS =	**/20**

CLO2 : **ANALYZE THE SUSTAINABLE DEVELOPMENT IMPACTS IN ENGINEERING PROBLEM (C4, PLO6)**

PLO6 : **Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving welldefined engineering problems (DK1, DK5, and DK7);**

PLO	CLO	DK	DP	ITEM	ATTRIBUTES	RUBRIC SCALES				WEIGHTAGE	SCORE
						EXCELLENT	GOOD	WEAK	POOR		
						4	3	2	1		
CONSIDER SUSTAINABLE DEVELOPMENT IMPACTS* TO: SOCIETY, THE ECONOMY, SUSTAINABILITY, HEALTH AND SAFETY, LEGAL FRAMEWORKS, AND THE ENVIRONMENT, IN SOLVING WELL-DEFINED ENGINEERING PROBLEMS (DK1,DK5 AND DK7).	ANALYZE THE SUSTAINABLE DEVELOPMENT IMPACTS IN ENGINEERING PROBLEM(C4, PLO6)	DK7 - Knowledge of issues and approaches in engineering technician practice: ethics, financial, cultural, environmental and sustainability impacts	DP1 (DK3 & DK4), DP3 & DP6	RESEARCH PLANNING AND PROGRESS	**Ability to show the research methodology phases and work execution**	Clearly shows weekly planning. All phases and activities are **100%** complete and clearly outlined. Execution confirm **100%** as planned in Gantt chart.	Clearly shows weekly planning. All phases and activities are **75%** complete and clearly outlined. Execution confirm **75%** as planned in Gantt chart.	Clearly shows weekly planning. All phases and activities are **50%** complete and clearly outlined. Execution confirm **50%** as planned in Gantt chart.	Clearly shows weekly planning. All phases and activities are **25%** complete and clearly outlined. Execution confirm **25%** as planned in Gantt chart.	1	**5**
					Ability to diagnose to the supervisor's suggestions and feedback	Documentation is thorough, clear, well-organized, and regularly updated for **14 weeks**.	Documentation is thorough, clear, well-organized, and regularly updated for **10 weeks**.	Documentation is thorough, clear, well-organized, and regularly updated for **5 weeks**.	Documentation is thorough, clear, well-organized, and regularly updated for **less than 5 weeks**.	1	5
				PROFESIONALISM	**Ability to discover the engineering Element**	Apply any **THREE** suitable engineering element such as below: 1) Design (CAD, 3D models, dimension) 2) Materials (Suitable materials) 3) System and mechanism (mechanical or electrical component) 4) Compliance and standard (ISO, ANSI etc) 5) Enginering Analysis	Apply any **TWO** suitable engineering element such as below: 1) Design (CAD, 3D models, dimension) 2) Materials (Suitable materials) 3) System and mechanism (mechanical or electrical component) 4) Compliance and standard (ISO, ANSI etc) 5) Enginering Analysis	Apply **ONE** suitable engineering element such as below: 1) Design (CAD, 3D models, dimension) 2) Materials (Suitable materials) 3) System and mechanism (mechanical or electrical component) 4) Compliance and standard (ISO, ANSI etc) 5) Enginering Analysis	There is no evidence of engineering element	1	5
				SUSTAINABILITY	**Ability to discover a new, sustainable practice**	Ability to write, understand and apply about sustainability	Ability to write and understand about sustainability	Ability to write about sustainability	There is no evidence of sustainability element	1	5
										TOTAL MARKS =	**/20**

*DP - WELL-DEFINED PROBLEM SOLVING
DK - KNOWLEDGE PROFILE
NA - WELL- DEFINE ENGINEERING ACTIVITIES
LD - LEARNING DOMAIN

Prepared and verified by:

Approved by:

JABATAN KEJURUTERAAN MEKANIKAL
DJJ 40392 PROJECT 1
RUBRIC FOR PRESENTATION

CLO3 ~~Demonstrate engineering management in a technical team (A3, PLO11)~~

PLO10 **Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments;**

PLO	CLO	*DP/DK/NA	ITEM	ATTRIBUTES	RUBRIC SCALES				WEIGHTAGE	SCORE
					EXCELLENT	GOOD	WEAK	POOR		
					4	3	2	1		
DEMONSTRATE KNOWLEDGE AND UNDERSTANDING OF ENGINEERING MANAGEMENT PRINCIPLES AND APPLY THESE TO ONE'S OWN WORK, AS A MEMBER OR LEADER IN A TECHNICAL TEAM AND TO MANAGE PROJECTS IN MULTI DISCIPLINARY ENVIRONMENTS.	PROPOSE A SOLUTION TO PROBLEMS	NONE	PROJECT MANAGEMENT	**Time Management**	Complete tasks ahead of scheduled Gantt Chart/ milestone.	Complete work on time based on Gantt Chart/ milestone.	Occasionally complete work on time based on Gantt Chart/ milestone	Rarely complete work on time based on Gantt Chart/ milestone	1	4
				Decision making	Able to make a decision based on excellent understanding of the project and available options.	Able to make a decision based on good understanding of the project and available options.	Able to make decisions with basic understanding of the project and available options.	Able to make decisions based on limited understanding of the project and available options.	1	4
				Organization of ideas	Able to organize the content of the presentation with excellent clarity.	Able to organize the content of the presentation with good clarity	Able to organize the content of the presentation with satisfactory clarity.	Able to organize the content of the presentation with minimal clarity.	1	4
			FINANCE	**Budget costing**	Able to explain in detail all the	Able to explain in detail **TWO**	Able to explain the project	Project costing not specified.	1	4
				Market needs	Able to convince with evidence **THREE** potential target market for their product.	Able to convince with **TWO** potential target market.	Able to convince only **ONE** potential target market.	Potential target market not specified.	1	4
									TOTAL MARKS = /100	

*DP - WELL-DEFINED PROBLEM SOLVING
DK - KNOWLEDGE PROFILE
NA - WELL- DEFINE ENGINEERING ACTIVITIES
LD - LEARNING DOMAIN

Prepared and verified by:

Approved by:

JABATAN KEJURUTERAAN MEKANIKAL
DJJ40182 - PROJECT 1
PROJECT REPORT EVALUATION FORM

PROJECT TITLE	
SUPERVISOR NAME	
CLASS	

CLO	ITEM	ATTRIBUTES	WEIGHTAGE	SCORES (0-5)		
				STUDENT NAME:	**STUDENT NAME:**	**STUDENT NAME:**
				REGISTRATION NO:	**REGISTRATION NO:**	**REGISTRATION NO:**
CLO1 : IDENTIFY THE ENGINEERING PROBLEMS TO BE SOLVED	PROJECT INTRODUCTION	Ability to identifies and describes the background information of project.	2	5		
		Ability to write an effective problem statement.	2	5		
		Ability to identify the project's objectives.	2	5		
		Ability to determine a project scopes and limitations	2	5		
CLO 2 : ANALYZE METHODS TO SOLVE PROBLEMS	LITERATURE REVIEW	Ability to write content, format, citation and references	4	5	5	5
	METHODS / APPROACH	Ability to write research methodology	4	5	5	5
	SUSTAINABILITY	Ability to write sustainable aspect (procedure/ regulation/recyclable/material selection and awareness on environment sustainability	4	5	5	5
TOTAL SCORES (100%)				**100**	**100**	**100**

Notes:
1. the merging score row shows the same score to all group members

Prepared by:

(Supervisor / Panel)

JABATAN KEJURUTERAAN MEKANIKAL

DJJ 40392 PROJECT 1

RUBRIC FOR REPORT

CLO1: **Identify engineering problems in mechanical engineering fields (C4, PLO2)**

PLO2: **IDENTIFY AND ANALYSE WELL-DEFINED ENGINEERING PROBLEMS REACHING SUBSTANTIATED CONCLUSIONS USING CODIFIED METHODS OF ANALYSIS SPECIFIC TO THEIR FIELD OF ACTIVITY (DK1 to DK4)**

PLO	CLO	DK	DP	ITEM	ATTRIBUTES	RUBRIC SCALES				WEIGHTAGE	SCORE
						EXCELLENT	GOOD	WEAK	POOR		
						4	3	2	1		
IDENTIFY AND ANALYSE WELL-DEFINED ENGINEERING PROBLEMS REACHING SUBSTANTIATED CONCLUSIONS USING CODIFIED METHODS OF ANALYSIS SPECIFIC TO THEIR FIELD OF ACTIVITY (DK1 to DK4)	IDENTIFY THE ENGINEERING PROBLEMS TO BE SOLVED	DK1 to DK4	DP1: Cannot be resolved without extensive practical knowledge as reflected in DK5 and DK6 supported by theoretical knowledge defined in DK3 and DK4	PROJECT INTRODUCTION	**Ability to provide the background information of project.**	Provides necessity background that include **ALL** the item below : 1) Definition 2) Background of study 3) Important of study 4) Needs of study	Provides necessity background that include **THREE** from all the below item: 1) Definition 2) Background of study 3) Important of study 4) Needs of study	Provides necessity background that include **TWO** from all the below item : 1) Definition 2) Background of study 3) Important of study 4) Needs of study	Provides necessity background that include **ONLY ONE** from all the below item: 1) Definition 2) Background of study 3) Important of study 4) Needs of study	2	10
					Ability to	Investigate an effective problem	Investigate an effective problem	Investigate an effective problem	Investigate an effective problem	2	10
					Ability to determine the project's objectives.	Determine the project's objectives that include at least **FOUR** items below: 1) Objectives 2) Specific 3) Measurable 4) Achiveable 5) Relevant 6) Time bound	Determine the project's objectives that include at least **THREE** items below: 1) Objectives 2) Specific 3) Measurable 4) Achiveable 5) Relevant 6) Time bound	Determine the project's objectives that include at least **TWO** items below: 1) Objectives 2) Specific 3) Measurable 4) Achiveable 5) Relevant 6) Time bound	Determine the project's objectives that include **ONLY ONE** item below: 1) Objectives 2) Specific 3) Measurable 4) Achiveable 5) Relevant 6) Time bound	2	10
			DP2: Involve several issues, but with few of these exerting conflicting constraints		**Ability to determine a project scopes and limitations**	Determine a project scopes and limitations that include **ALL** the item below : 1) variable 2) populations/ respondent/ place etc 3) parameters (time, temperature, weight, quantity, amount etc) 4) expected result	Determine a project scopes and limitations that include **THREE** from all the below item: 1) variable 2) populations/ respondent/ place etc 3) parameters (time, temperature, weight, quantity, amount etc) 4) expected result	Determine a project scopes and limitations that include **TWO** from all the below item 1) variable 2) populations/ respondent/ place etc 3) parameters (time, temperature, weight, quantity, amount etc) 4) expected result	Determine a project scopes and limitations that include **ONLY ONE** from all the below item : 1) variable 2) populations/ respondent/ place etc 3) parameters (time, temperature, weight, quantity, amount etc) 4) expected result	2	10
										TOTAL MARKS =	**/40**

CLO2 : **Analyze the sustainable development impacts in engineering problem (C4, PLO6)**

PLO6 : **Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving welldefined engineering problems (DK1, DK5, and DK7);**

PLO	CLO	DK	DP	ITEM	ATTRIBUTES	RUBRIC SCALES				WEIGHTAGE	SCORE
						EXCELLENT	GOOD	WEAK	POOR		
						4	3	2	1		
UNDERSTAND AND EVALUATE THE SUSTAINABILITY AND IMPACT OF ENGINEERING TECHNICIAN WORK IN THE SOLUTION OF WELL-DEFINED ENGINEERING PROBLEMS IN SOCIETAL AND ENVIRONMENTAL CONTEXTS (DK7)	ANALYZE METHODS TO SOLVE PROBLEMS	DK7 - Knowledge of issues and approaches in engineering technician practice: ethics, financial, cultural, environmental and sustainability impacts	DP1 (DK3 & DK4), DP3 & DP6	METHODS / APPROACH LITERATURE REVIEW	**Ability to write content, format, citation and references**	Student able to write clearly complete and detailed investigation into: 1) Related theory 2) Related design 3) Existing systems 4) Techniques & technology. 5) Critical reviews with more than 5 latest reference.	Student able to write clearly atleast FOUR items below: 1) Related theory 2) Related design 3) Existing systems 4) Techniques & technology. 5) Critical reviews with more than 5 latest reference.	Student able to write clearly atleast THREE items below:: 1) Related theory 2) Related design 3) Existing systems 4) Techniques & technology. 5) Critical reviews with more than 5 latest reference.	Student able to write clearly atleast TWO items below:: 1) Related theory 2) Related design 3) Existing systems 4) techniques & technology. 5) Critical reviews with more than 5 latest reference.	4	20
				METHODS / APPROACH	**Ability to figure out research methodology**	Student able to figure out in detail **ALL** the methodology process : 1) Flow chart 2) Gantt Chart 3) Survey need analysis	Student able to figure out clearly **TWO** items below : 1) Flow chart 2) Gantt Chart 3) Survey need analysis	Student able to figure out clearly **ONE** item below : 1) Flow chart 2) Gantt Chart 3) Survey need analysis	Student not able to figure out any research methodology process	4	20
				SUSTAINABILITY	**Ability to determine sustainable aspect (procedure/ regulation/recycla ble/material selection and awareness on environment sustainability**	Student able to determine in detail **ALL** sustainable aspect : 1) Procedure 2) Regulation 3) Recyclable 4) Material selection 5) Eco-friendly with initiate new green technology elements and environmental control during project completion	Student able to determine clearly **FOUR** sustainable aspect items below: 1) Procedure 2) Regulation 3) Recyclable 4) Material selection 5) Eco-friendly with initiate new green technology elements and environmental control during project completion	Student able to determine clearly **THREE** sustainable aspect items below : 1) Procedure 2) Regulation 3) Recyclable 4) Material selection 5) Eco-friendly with initiate new green technology elements and environmental control during project completion	Student able to determine clearly **TWO** sustainable aspect item below : 1) procedure 2) regulation 3) recyclable 4) material selection 5) Eco-friendly with initiate new green technology elements and environmental control during project completion	4	20
										TOTAL MARKS:	**/60**

*DP - WELL-DEFINED PROBLEM SOLVING
DK - KNOWLEDGE PROFILE
NA - WELL- DEFINE ENGINEERING ACTIVITIES

Prepared and verified by:

Approved by:

JABATAN KEJURUTERAAN MEKANIKAL

DJJ50403 PROJECT 2

RUBRIC FOR LOG BOOK (20%)

CLO1 Organize project outcomes in progress report based on standard format (P4)

PLO10 Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.

PLO10	CLO1	DL	ATTRIBUTES	RUBRIC SCALES				SCORE
				EXCELLENT	GOOD	WEAK	POOR	
				4	3	2	1	
Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.	Organize project outcomes in progress report based on standard format (P4)	P4	**Execution of standard log book entries** (Weekly records)	Organizes excellent weekly notes on project activities and records activities accurately and promptly using the standard log book format without guidance.	Records activities accurately with minor omissions; occasional need for reminders.	Records activities with frequent omissions or vague details; requires guidance.	Rarely records activities; entries incomplete or unclear even with guidance.	
		P4	**Organizing Information & Outcomes** (Arranging and structuring records)	Skillfully organizes entries in logical sequence; links outcomes clearly to objectives and milestones.	Organizes entries mostly in sequence; outcomes partially linked to objectives.	Entries are inconsistently ordered; weak linkage to objectives.	Entries are disorganized; no linkage to objectives.	
		P4	**Documentation of Project Outcomes** (Tracking deliverables and results)	Constructs outcomes of activities are explicitly stated, measurable, and linked to objectives; clear evidence of progress.	Constructs outcomes generally clear; some link to objectives; progress moderately evident.	Constructs outcomes vaguely described; little link to objectives; minimal progress evidence.	Constructs outcomes missing, unclear, or irrelevant to objectives.	
		P3	**Application of Engineering Management Principles** (Planning, scheduling, resource tracking)	Display proactive use of planning tools (e.g., schedules, resource lists, risk notes) with evidence of application in tasks.	Displays some planning or scheduling in entries; moderate evidence of application.	Display limited mention of planning or management concepts; lacks consistent application.	No evidence of planning or engineering management principles.	
		P4	**Reflection on Team Role & Collaboration** (Member/leader in multidisciplinary team)	Perform regular reflections on personal role, team contributions, and multidisciplinary collaboration; clearly identifies problem-solving actions.	Perform some reflections on role and teamwork; limited detail on collaboration.	Perform minimal mention of role or teamwork; vague reflections.	No reflections on role or collaboration recorded.	
		P3	**Presenting Log Book Professionally** (Neatness, clarity, visuals)	Display neatly and professionally presents entries; integrates diagrams/sketches that enhance clarity without assistance.	Display mostly neat presentation; visuals included but not always well-integrated.	Presentation uneven; visuals minimal or unclear.	Display poor presentation; no visuals; difficult to interpret.	
							TOTAL MARKS =	

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DK - KNOWLEDGE PROFILE
NA - WELL- DEFINE ENGINEERING ACTIVITIES

Prepared by:

verified by:

JABATAN KEJURUTERAAN MEKANIKAL

DJJ50403 PROJECT 2

RUBRIC FOR PRACTICAL PRODUCT (20%)

CLO2 construct design solutions to meet specified needs of the project with appropriate consideration. (P5)

PLO3 design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety as well as, cultural, societal and environmental considerations in area of mechanical engineering (DK5).

PLO3	CLO2	DK	DP	DL	ATTRIBUTES	RUBRIC SCALES				SCORE
						EXCELLENT	GOOD	WEAK	POOR	
						4	3	2	1	
design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety as well as, cultural, societal and environmental considerations in area of mechanical	construct design solutions to meet specified needs of the project with appropriate consideration. (P5)	DK5	DP1,DP3,DP4,DP6,DP7	P3	**Design Concept & Creativity**	Constructs and sketches innovative concepts that fully align with requirements and constraints.	Sketches and constructs appropriate concepts with minor creativity gaps.	Sketches basic concepts with limited originality or practicality.	Sketches irrelevant or impractical concepts.	
				P5	**Functionality & Performance**	Demonstrates a fully functional product that meets or exceeds performance targets.	Builds a functional product with minor performance gaps.	Builds a product that functions partially.	Unable to build or demonstrate a functional product.	
				P5	**Compliance with Health, Safety & Cultural Standards**	Coordinates all activities to adhere to relevant safety, health, and cultural standards without compromise.	Coordinates to meet most standards with minor omissions.	Coordinates compliance but with significant gaps.	Unable to coordinate compliance with required standards.	
				P4	**Sustainability & Environmental Considerations**	Construct using sustainable materials and processes to minimise environmental impact.	Construct with some sustainable practices applied.	Construct with minimal sustainable consideration.	Construct with no regard for sustainability.	
									TOTAL MARKS =	

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DK - KNOWLEDGE PROFILE
NA - WELL- DEFINE ENGINEERING ACTIVITIES

Prepared by:

verified by:

JABATAN KEJURUTERAAN MEKANIKAL

DJJ50403 PROJECT 2

RUBRIC FOR PROJECT REPORT (20%)

CLO3 analyze the project results and write the project report to achieve proposed objectives. (C4)

PLO4 conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements (DK8).

PLO4	CLO3	DK	DP	DL	ATTRIBUTES	RUBRIC SCALES				SCORE
						EXCELLENT	GOOD	WEAK	POOR	
						4	3	2	1	
conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements (DK8).	explain the project work and defend project outcomes effectively with good communication skills (A4)	DK8	DP1,DP3, D4	C2	Format and arrangement	The report follows the correct format completely. All sections are included (cover page, introduction, objectives, literature review, methodology, results and analysis, conclusion and recommendation, references, appendix). Headings, numbering, font and paragraphing are clear and consistent.	The report mostly follows the correct format. Most sections are included. Headings and structure are mostly clear, with minor mistakes that do not affect understanding.	The report has basic structure but some important sections are missing. Headings, font and paragraphing are inconsistent. Format needs improvement.	The report does not follow the required format. Many sections are missing or not organized properly. Hard to read and understand.	
				C4	Conduct investigations	The problem statements are clearly defined, specific, and directly linked to the investigation. The statement explains why the problem is important and includes strong evidence (data, examples, references). The statement guides the whole project effectively.Objectives are clearly defined, specific, and measurable. Scope matches the project goals. Limitations are realistic and clearly stated.	The problem statements are mostly clear and relevant to the investigation. Some evidence is used, but could be stronger or more detailed. The statement supports the project direction. Objectives are mostly clear and relevant. Scope could be more detailed. Limitations are mentioned but not fully developed	The problem statements are unclear and lacks detail. Evidence is limited or not clearly connected. Needs improvement to guide the project better. Objectives are general or not specific. Scope is vague or too broad. Limitations are unclear or missing.	The problem statements are not clearly related to the investigation. No evidence is provided. The statement does not help guide the project. Objectives are missing or unrealistic. Scope is not defined. Limitations are not mentioned.	
						Literature review is comprehensive and well-organized. All sources are current and highly relevant to the technology discussed. Strong correlation between literature and project investigation.	Literature review includes mostly relevant and recent sources. Good connection between the literature and current technological trends.	Literature review includes some relevant sources. There is a basic attempt to link the literature to current technology, but the explanation is general.	Sources are outdated or not related to current technology. No clear connection between the literature and the project.	
						AI tools are effectively used in design development	AI tools are used to support design development	AI tools may have been used, but not clearly explained or integrated	No use of AI tools to assist in design development	
				C3	Exhibit appropriate techniques and tools with Prioritise Safety and Standards Compliance.	Techniques and tools used are highly appropriate and justified. Process flow is detailed, logical, and easy to follow. Full compliance with regulations, well-documented safety procedures and standard.	Techniques and tools are suitable with some justification. Process flow is present and mostly logical. Good adherence to safety standards.	Techniques and tools are used but not well justified. Process flow is unclear or incomplete. Safety and standards are mentioned briefly or lacks application.	Techniques and tools are inappropriate or not explained. Process flow is missing or confusing. No consideration of safety or standards.	
				C4	Analyze the project results	Results are clearly presented using appropriate formats (tables, graphs, charts). Analysis is in-depth, logical, and directly linked to project objectives. Strong connection between results and project objectives.	Results are presented clearly with some visual support. Analysis is relevant and mostly logical. Good understanding of the data and links to project objectives.	Results are presented but may lack clarity or structure. Analysis is basic and descriptive, with limited interpretation. Connection to project objectives is weak.	Results are unclear or incomplete. Little or no analysis is provided. No connection to project objectives.	
				C4	Conclude project findings and recommendation.	Conclusion clearly summarizes all key findings of the project. Strong connection to project objectives and results. Recommendations are practical, relevant, and based on analysis.	Conclusion summarizes most findings clearly. Connection to objectives and results is mostly accurate. Recommendations are useful and related to the project, but could be more detailed.	Conclusion is general and lacks detail. Some findings are mentioned but not clearly linked to objectives. Recommendations are basic or not well explained.	Conclusion is unclear or missing. Findings are not summarized properly. Recommendations are irrelevant or missing.	
				C2	Conclude project findings and recommendation.	At least 8 relevent references according to the reference standard	At least 6 relevent references according to the reference standard	At least 4 relevent references according to the reference standard	At least 2 relevent references according to the reference standard	
										TOTAL MARKS =

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verified by:

JABATAN KEJURUTERAAN MEKANIKAL

DJJ50403 PROJECT 2

RUBRIC FOR PRACTICAL PRESENTATION (20%)

CLO4 explain the project work and defend project outcomes effectively with good communication skills (A4)

PLO9 communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions.

PLO9	CLO2	NA	DL	CRITERIA	ATTRIBUTES	RUBRIC SCALES				SCORE
						EXCELLENT	GOOD	WEAK	POOR	
						4	3	2	1	
communicate effectively and inclusively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions.	explain the project work and defend project outcomes effectively with good communication skills (A4)	NA1-NA5	A3	Verbal Communication	Clarity of Ideas	Explain ideas by following format given considering society and environment with high precision, well-structured, and engaging throughout.	Explain ideas by mostly following the format given, considering society and environment with moderate precision, generally well-structured, and engaging in most parts.	Explain ideas by partially following the format given, considering society and environment with limited precision, structure lacking in some areas, and engagement inconsistent.	Explain ideas without following the format given, minimal consideration of society and environment, lacking clear structure, and not engaging.	
			A3		Confidence Delivery of Ideas	Deliver confidently with clear voice, strong posture, and consistent eye contact.	Present confidently with generally clear voice and posture.	Present with limited confidence, uneven voice, and weak posture.	Attempt delivery but lack confidence, clarity, and engagement.	
			A2		Response to Questions	Examine each question fully, decide on accurate responses, and deliver confidently.	Address most questions well, with minor uncertainty.	Attempt to answer questions but with hesitation or gaps.	Struggle to provide meaningful responses to questions.	
			A3		Adaptation to Audience	Relate content and style fully to audience needs and level.	Relate content well with occasional lapses.	Attempt to adapt content but inconsistently.	Ignore audience needs in delivery.	
			A3	Written Communication (Poster)	Clarity of Writing	Clarify ideas with high precision, making them very easy to understand.	Explain ideas clearly with only minor lapses.	Explain ideas but with occasional vague or unclear points.	Attempt to explain ideas but remain unclear and confusing.	
			A2		Systematic Organisation	Prepare and develop content in a consistent, logical order throughout.	Prepare content in a logical order with minor inconsistencies.	Attempt to organise content but with unclear order.	Fail to organise content systematically.	
										TOTAL MARKS =

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DK - KNOWLEDGE PROFILE
NA - WELL- DEFINE ENGINEERING ACTIVITIES

Prepared by:

verified by:

Appendix C3-2d

POLITEKNIK MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

KOLEJ KOMUNITI MALAYSIA

BUKU PANDUAN
PELAKSANAAN PROJEK PELAJAR
(PROGRAM DIPLOMA)
POLITEKNIK MALAYSIA

EDISI 2021

KEMENTERIAN PENGAJIAN TINGGI

BUKU PANDUAN
PELAKSANAAN PROJEK PELAJAR
(PROGRAM DIPLOMA)

POLITEKNIK MALAYSIA
KEMENTERIAN PENGAJIAN TINGGI
EDISI 2021

DOKUMEN INI DILULUSKAN
PENGGUNAANNYA DI PERINGKAT
POLITEKNIK MALAYSIA

Terbitan Edisi 2021

Hak cipta terpelihara. Tiada bahagian daripada terbitan ini boleh diterbitkan semula, disimpan untuk pengeluaran atau ditukarkan ke dalam sebarang bentuk atau dengan sebarang alat, sama ada dengan cara elektronik, gambar dan rakaman serta sebagainya tanpa kebenaran bertulis daripada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi terlebih dahulu.

Diterbitkan oleh:

Bahagian Instruksional dan Pembelajaran Digital,
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pengajian Tinggi,
Aras 6, Galeria PjH,
Jalan P4W, Persiaran Perdana, Presint 4,
62100 Putrajaya.

Perpustakaan Negara Malaysia Data-Pengkatalogan-dalam-Penerbitan

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Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia KPT
Edisi 2021

Pengenalan	Edisi 2012
Semakan Pertama	Edisi 2016
Semakan Kedua	Edisi 2021

PRAKATA

Assalamualaikum dan Salam Sejahtera,

Syukur ke hadrat Allah S.W.T kerana dengan rahmatNya, Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) berjaya menyempurnakan Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, Kementerian Pengajian Tinggi (KPT).

Buku Panduan ini adalah sebagai panduan dan rujukan bagi warga Politeknik Malaysia dan semua pihak yang terlibat dalam pelaksanaan projek pelajar (program diploma) bagi memastikan program pengajian yang ditawarkan di Politeknik Malaysia kekal relevan dan berkesan. Pelaksanaan kursus Projek ini turut berfungsi sebagai platform untuk pelajar mengembangkan potensi, mempamerkan keupayaan dan mempraktikkan ilmu yang telah dipelajari melalui percambahan fikiran dan penyelesaian masalah secara inovatif bagi menghasilkan projek/hasil kerja yang bermutu.

Buku ini mengandungi dua (2) bahagian merangkumi keseluruhan aspek pelaksanaan projek pelajar iaitu pengenalan, peranan dan tanggungjawab, perancangan projek, pelaksanaan projek, harta intelek projek, buku log, penulisan laporan dan format penulisan laporan. **Namun demikian, ia tertakluk kepada keperluan serta kesesuaian kursus dan program pengajian di politeknik berkenaan.**

Setinggi penghargaan dan ucapan terima kasih kepada ahli jawatankuasa serta semua pihak yang sama-sama terlibat dalam penerbitan buku ini. Semoga ianya dapat dimanfaatkan sebaiknya dalam memperkasakan pelaksanaan projek pelajar di Politeknik Malaysia di samping menjadi pendorong untuk melahirkan graduan TVET yang berkualiti dan holistik, selaras dengan hasrat Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Pendidikan Tinggi) dan mesra industri.

Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pengajian Tinggi
Tahun 2021

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TUJUAN

Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, KPT ini bertujuan untuk menyediakan satu panduan kepada pelaksana program pengajian di Politeknik Malaysia, pihak industri dan mana-mana pihak yang terlibat secara langsung dalam pelaksanaan projek pelajar. Buku panduan ini dibahagikan kepada **DUA (2)** bahagian:

BAHAGIAN I: PANDUAN PELAKSANAAN PROJEK PELAJAR

Bab 1: Pengenalan

Bab ini menerangkan kursus Projek yang dilaksanakan di Politeknik Malaysia berdasarkan kurikulum program pengajian masing-masing. Matlamat dan objektif pelaksanaan projek juga bergantung kepada jenis projek yang dibangunkan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 2: Peranan dan Tanggungjawab

Pelaksanaan projek memerlukan proses pengurusan dan penyelarasan yang berkesan daripada semua pihak dalam memastikan projek yang dihasilkan memenuhi keperluan program pengajian, berinovasi dan mempunyai nilai komersial. Terdapat beberapa pihak yang terlibat di dalam proses pelaksanaan projek, antaranya penyelaras projek yang mewakili politeknik, jabatan dan dibantu oleh pensyarah selaku penyelaras kursus dan penyelia serta panel penilai projek. Bab ini menjelaskan peranan dan tanggungjawab pihak-pihak yang terlibat bagi memastikan pelaksanaan projek dijalankan dengan baik dan berkesan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 3: Perancangan Projek

Bab ini menyenaraikan peraturan pelaksanaan projek yang perlu diikuti serta keperluan sepanjang pelaksanaan projek seperti penggunaan buku log, Carta Gantt dan pembiayaan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 4: Pelaksanaan Projek

Bab ini menerangkan secara keseluruhan aktiviti pelaksanaan projek yang dijalankan berdasarkan perancangan yang telah dibuat. Ia juga dilengkapi dengan contoh/panduan penulisan rubrik yang dapat membantu dalam proses membangunkan skema pemarkahan projek pelajar. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 5: Harta Intelek Projek

Bab ini menerangkan keperluan hak cipta terhadap sesuatu projek yang dihasilkan sama ada berbentuk produk atau penulisan. Bab ini turut menyentuh berkenaan penyediaan inventori projek pelajar peringkat program/jabatan/politeknik, penglibatan projek di pertandingan dalam/luar dan pengkomersialan projek yang dihasilkan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 6: Buku Log

Bab ini menerangkan keperluan penyediaan buku log aktiviti sepanjang pelaksanaan projek melalui buku log serta dokumen-dokumen yang berkaitan yang boleh dirujuk oleh pelajar, penyelia dan penyelaras kursus Projek. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 7: Penulisan Laporan

Pelaksanaan projek melibatkan penulisan kertas cadangan sebelum projek dilaksanakan dan penulisan laporan akhir selepas projek dilaksanakan berserta analisis data. Bab ini memberi panduan mengenai bentuk penulisan dalam penyediaan kertas cadangan dan laporan akhir projek. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

BAHAGIAN II: FORMAT PENULISAN LAPORAN

Bahagian ini mengemukakan format penulisan dan penyediaan kertas cadangan dan laporan akhir projek bagi tujuan penyelarasan. Namun, kesesuaian penulisan projek perlu dirujuk kepada penyelia projek masing-masing.

BAHAGIAN I:

PANDUAN PELAKSANAAN PROJEK (PROGRAM DIPLOMA)

BAB 1: PENGENALAN

1.1 Pendahuluan

Kursus Projek merupakan satu kursus wajib bagi program pengajian tertentu yang perlu dilaksanakan oleh pelajar sebagai memenuhi syarat kelayakan penganugerahan Diploma Politeknik Kementerian Pengajian Tinggi (KPT). Kursus ini memberi peluang kepada pelajar untuk mengaplikasi pengetahuan dan kemahiran serta mempamerkan keupayaan dalam merealisasikan idea, kreativiti, inovasi dan penyelesaian masalah ke arah penghasilan projek/kajian yang mempunyai nilai komersial dan berdaya saing.

Pelaksanaan projek/kajian merangkumi semua proses pembelajaran dan pengajaran (PdP) iaitu secara teori, praktikal, penulisan ilmiah, pemantauan dan penilaian. Sepanjang pelaksanaan projek, pelajar dibimbing oleh penyelia untuk meneroka pengetahuan dan kemahiran baharu serta mengaitkan dengan pengetahuan sedia ada dan memastikan projek dapat disempurnakan dalam masa yang ditetapkan.

1.2 Definisi Projek

Projek merupakan aktiviti kajian kes/ilmiah yang bersesuaian berkaitan bidang dan tahap pengajian bagi memenuhi keperluan program pengajian. Kajian kes/ilmiah ini dilakukan secara individu atau berkumpulan (mengikut tahap pengajian) bermula daripada peringkat perancangan, pelaksanaan kajian, analisis keputusan dan pelaporan ilmiah di bawah bimbingan penyelia bagi mengembangkan potensi diri pelajar dengan menggunakan pengetahuan dan kemahiran dalam bidang masing-masing. Pelajar akan diselia oleh sekurang-kurangnya seorang pensyarah serta dinilai oleh institusi dan/atau industri.

1.3 Matlamat

Matlamat projek/kajian adalah untuk mengintegrasikan pengetahuan, kemahiran praktikal dan afektif yang diperoleh sepanjang mengikuti program pengajian dalam proses penggunaan sesuatu ilmu melalui percambahan fikiran dan penyelesaian masalah secara inovatif ke arah melahirkan graduan yang kompeten, kreatif dan berwibawa.

1.4 Objektif

Objektif pelaksanaan projek/kajian ini adalah untuk:

(a) memperkenalkan pelajar dengan kaedah kajian/pembangunan projek;
(b) mengaplikasikan pengetahuan teori ke dalam situasi praktikal;
(c) melatih pelajar melaksanakan projek/kajian dalam jangka masa yang ditetapkan;
(d) mengenal pasti pernyataan masalah, kajian literatur/lapangan/siasatan, pengumpulan data, analisis data dan penulisan laporan; dan
(e) membentang hasil projek/kajian melalui penulisan dan pembentangan.

1.5 Jenis Projek

Terdapat **DUA (2)** jenis projek yang boleh dihasilkan:

1.5.1 Projek Jenis Nyata (berdasarkan Produk/Inovasi)

Projek yang menghasilkan produk berupa prototaip, barangan, proses dan sistem menggunakan teknologi yang bersesuaian. Pembangunan projek ini sama ada menggunakan kaedah baharu atau kaedah sedia ada serta boleh merujuk kepada penyelesaian masalah di institusi, industri atau komuniti. Kaedah pembangunan dan pengujian ke atas projek perlu dinyatakan dengan jelas dan terperinci berserta sokongan data, analisis dan bukti-bukti berkaitan dengan projek.

1.5.2 Projek Jenis Kajian

Projek jenis ini merujuk kepada kemahiran dalam membuat kajian tentang permasalahan, pengurusan teknikal, teknologi baharu, simulasi, konseptual dan sebagainya yang berkaitan. Hasil kajian hendaklah disertakan sebagai bukti seperti dokumen yang dibangunkan, borang soal selidik, senarai semak dan lain-lain yang berkaitan.

Jadual 1.1 menunjukkan contoh projek jenis nyata dan projek jenis kajian. Namun, definisi bagi setiap jenis projek adalah mengikut keperluan dan kesesuaian program pengajian masing-masing.

Jadual 1.1: Contoh Jenis-Jenis Projek

Contoh Projek Jenis Nyata	Contoh Projek Jenis Kajian
Jig and fixture	Kajian Kes
Reka Bentuk	Eksperimen
Portfolio	Analisis
Perisian	Kaji Selidik
Sistem Aplikasi	Ujian Makmal
Perkakasan	Kajian Perancangan
Proses	Kajian Perniagaan
Perkhidmatan	Kajian Pemasaran
Pengurusan Acara	Pelan Perniagaan
Landskap	Pelan Pemasaran
Teknologi	Model

Nota: Jenis-jenis projek boleh ditambah atau diubah mengikut keperluan program pengajian masing-masing.

1.6 Struktur Projek

Secara umumnya, pelaksanaan kursus Projek adalah berdasarkan kepada keperluan struktur kurikulum program pengajian yang telah ditetapkan. Jumlah kredit juga bergantung kepada struktur kurikulum program pengajian berkenaan.

Bagi kursus Projek yang dilaksanakan dalam jangka masa **DUA (2)** semester (kursus Projek 1 diikuti dengan kursus Projek 2 secara berturutan jika berkaitan kecuali dengan kelulusan jabatan), Projek 1 merangkumi aktiviti penyediaan Kertas Cadangan *(Proposal Paper)* berkaitan dengan mengenal pasti masalah, menentukan objektif, mengemukakan kajian literatur/lapangan/siasatan dan menetapkan metodologi kajian. Projek 2 pula merangkumi aktiviti pengumpulan data, reka bentuk dan penghasilan produk dan/atau pembangunan kajian, analisis dan kesahan hasil, pembentangan keputusan, membuat kesimpulan dan cadangan serta penghasilan Laporan Akhir Projek pelajar.

Manakala, bagi kursus Projek yang dilaksanakan dalam tempoh satu semester sahaja merangkumi aktiviti berkaitan mengenal pasti masalah, menentukan objektif, mengemukakan kajian literatur, menetapkan metodologi kajian, pengumpulan data, analisis dan kesahan hasil, perbahasan keputusan, membuat kesimpulan serta cadangan. Namun, aktiviti ini mungkin berbeza antara program pengajian dan perlu mengikut kurikulum program pengajian yang telah ditetapkan.

1.7 Ciri-Ciri Projek/Kajian

Ciri-ciri projek/kajian secara umumnya adalah:

(a) mempunyai tempoh pelaksanaan dan objektif yang jelas;
(b) melaksanakan kajian atau projek yang menjurus kepada penyelesaian masalah yang ditakrif jelas (*well-defined)* secara ilmiah dan sistematik;
(c) berasaskan kehendak industri *(industry-driven)* atau/dan komuniti *(community-driven);*
(d) mempunyai ruang nilai penambahbaikan bagi meningkatkan lagi kualiti projek sedia ada *(future upgrade)*;

(e) mengambil kira perkembangan teknologi terkini seperti Revolusi Industri 4 *(4th Industrial Revolution),* teknologi hijau dan inovasi, penjimatan tenaga, kitar semula, ergonomik, keusahawanan dan lain-lain yang berkaitan serta mempunyai nilai komersial; dan

(f) digalakkan untuk menggabungjalinkan dua atau lebih disiplin/bidang *(multidiscipline*) sekiranya berkaitan.

***Nota**:*

(i). Program Kejuruteraan: menyelesaikan masalah/projek kejuruteraan (*industry-based* atau *practice-oriented* yang ditakrif secara jelas (*well-defined)* menggunakan teknik-teknik, sumber dan alat kejuruteraan yang sesuai dengan bidang pengajian.

(ii). Ciri-ciri projek boleh ditambah atau diubah mengikut keperluan program pengajian masing-masing (kejuruteraan, teknologi, perdagangan, perkhidmatan dan industri kreatif).

1.8 Kluster Penyelidikan

Bagi memastikan penyelidikan dan pelaksanaan kursus Projek di Politeknik Malaysia berjalan dengan sempurna dan berfokus kepada kekuatan yang ada, kluster penyelidikan projek merangkumi bidang-bidang asas (merujuk kepada Kluster Penyelidikan yang telah digariskan oleh KPT) adalah seperti di Jadual 1.2.

Jadual 1.2: Kluster Penyelidikan

Sains Tulen	Sains Gunaan	Teknologi dan Kejuruteraan	Sains Sosial	Warisan Alam dan Budaya	Teknologi Maklumat dan Komunikasi
(a) Biokimia (b) Biologi (c) Fizik (d) Geologi (e) Kimia (f) Sains Bahan (g) Matematik dan Statistik	(a) Biologi (b) Bioteknologi (c) Fizik (d) Geologi (e) Kimia (f) Matematik dan Statistik (g) Sains Bahan	<u>Teknologi</u> (a) Animasi (b) Infrastruktur dan Pengangkutan (c) Pembinaan dan Bahan <u>Kejuruteraan</u> (a) Aeroangkasa (b) Alam Sekitar (c) Awam dan Struktur (d) Bahan dan Polimer (e) Elektrikal dan Elektronik (f) Kejuruteraan Kimia dan Pemprosesan (g) Perkapalan / Seni Bina Perkapalan (h) Mekanikal dan Pembuatan (i) Perubatan (j) Seni Bina	(a) Ekonomi (b) Kajian Etnik (c) Komunikasi (d) Pengurusan (e) Perniagaan	(a) Kulinari (b) Pelancongan (c) Pertanian	(a) Animasi dan Multimedia (b) *Internet of Things* (IOT) (c) *Artificial Intelligent* (AI) (d) Perisian / *Software* (e) Rangkaian Komputer (f) Reka Bentuk Perkasasan (g) Robotik (h) Sistem Maklumat (i) Sistem Keselamatan (j) Teknologi Permainan

BAB 2: PERANAN DAN TANGGUNGJAWAB

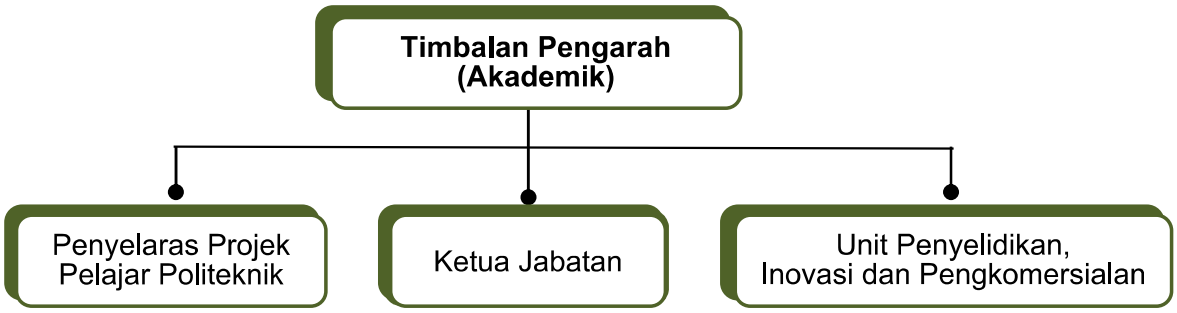
Pelaksanaan projek memerlukan proses pengurusan, penyelarasan dan pemantauan yang berkesan daripada semua pihak dalam memastikan projek yang dihasilkan oleh pelajar memenuhi keperluan program pengajian. Struktur gerak kerja yang dicadangkan di peringkat politeknik adalah seperti di bawah:

2.1 Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Politeknik

Jawatankuasa ini terdiri daripada:

(a) Timbalan Pengarah (Akademik)/Timbalan Pengarah (TP)
(b) Ketua Jabatan (KJ)
(c) Unit Penyelidikan, Inovasi dan Pengkomersialan (UPIK)
(d) Penyelaras Projek Pelajar Politeknik (PPPP)

Carta Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Politeknik yang dicadangkan seperti Rajah 2.1 di bawah.



Rajah 2.1: Cadangan Carta Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Politeknik

Terma Rujukan *(Terms of Reference):*

(a) merancang dan menyelaras pelaksanaan kursus Projek termasuk penggunaan fasiliti dan peruntukan kewangan (sekiranya ada);
(b) memantau pelaksanaan dan penilaian kursus Projek agar berjalan lancar dan efektif berdasarkan dokumen kurikulum yang sedang berkuat kuasa;

(c) mengenal pasti langkah penyelesaian ke atas isu/masalah merentas program/jabatan; dan

(d) mengadakan mesyuarat mengikut keperluan.

Nota: Pembentukan dan terma rujukan Jawatankuasa Pelaksanaan Projek Pelajar peringkat politeknik ini boleh disesuaikan mengikut keperluan politeknik masing-masing.

2.2 Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Jabatan

Jawatankuasa ini terdiri daripada:

(a) Ketua Jabatan

(b) Ketua Program

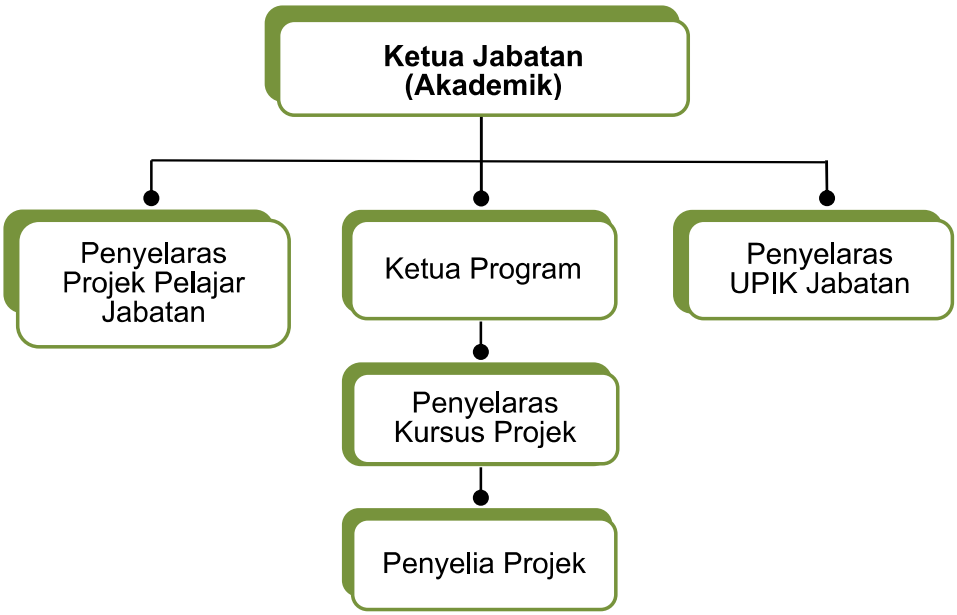
(c) Penyelaras UPIK Jabatan

(d) Penyelaras Projek Pelajar Jabatan

(e) Penyelaras Kursus Projek

(f) Penyelia Projek

Carta Jawatankuasa Projek Pelajar Peringkat Jabatan yang dicadangkan seperti Rajah 2.2 di bawah.



Rajah 2.2 : Carta Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Jabatan

Terma Rujukan *(Terms of Reference):*

(a) merancang pelaksanaan kursus Projek di peringkat jabatan termasuk penggunaan fasiliti dan peruntukan kewangan (sekiranya ada);

(b) menyelaras, memantau dan memastikan pelaksanaan dan penilaian kursus Projek di peringkat jabatan berjalan lancar dan efektif berdasarkan dokumen kurikulum yang sedang berkuat kuasa;

(c) mengenal pasti langkah penyelesaian ke atas isu/masalah merentas program pengajian di jabatan;

(d) melaporkan pelaksanaan kursus Projek kepada Jawatankuasa Pelaksanaan Projek Pelajar di peringkat politeknik dan pihak pengurusan politeknik; dan

(e) mengadakan mesyuarat mengikut keperluan.

***Nota**:* Pembentukan dan terma rujukan Jawatankuasa Pelaksanaan Projek Pelajar peringkat jabatan ini boleh disesuaikan mengikut keperluan jabatan dan program pengajian masing-masing.

2.3 Peranan dan Tanggungjawab

Bagi memastikan pelaksanaan kursus Projek berjalan dengan baik dan berkesan, pegawai-pegawai tersebut adalah terlibat:

2.3.1 Timbalan Pengarah (Akademik)/Timbalan Pengarah

Berikut merupakan tugas sebagai Timbalan Pengarah (Akademik)/Timbalan Pengarah:

(a) mempengerusikan Mesyuarat Jawatankuasa Pengurusan Akademik/ Jawatankuasa Pelaksanaan Projek Pelajar peringkat politeknik bagi membincangkan perkara berkaitan pelaksanaan kursus Projek;

(b) melantik pegawai untuk menganggotai Jawatankuasa Pelaksanaan Projek Pelajar peringkat politeknik;

(c) mengenal pasti langkah penyelesaian ke atas isu merentas jabatan/program; dan

(d) mengesahkan Anggaran Belanja Mengurus (ABM) (sekiranya perlu) bagi pelaksanaan projek pelajar.

2.3.2 Penyelaras Projek Pelajar Politeknik

Berikut merupakan tanggungjawab Penyelaras Projek Pelajar Politeknik:

(a) menjalankan tugas sebagai pegawai perantara bagi tujuan penyelarasan pelaksanaan kursus Projek antara politeknik dengan JPPKK;

(b) menjadi pegawai perantara antara UPIK dan juga Penyelaras Projek Pelajar Jabatan di politeknik;

(c) menyelaras takwim/jadual perancangan aktiviti pelaksanaan kursus Projek yang disahkan oleh TP(A) berpandukan kurikulum yang sedang berkuat kuasa dan Kalendar Akademik JPPKK;

(d) menyedia dan menyampaikan tatacara pengurusan projek/kajian kepada semua Penyelaras Projek Pelajar Jabatan;

(e) memberi taklimat dan mengadakan perbincangan dengan semua Penyelaras Projek Pelajar Jabatan tentang pelaksanaan projek pelajar di jabatan masing-masing berpandukan kurikulum yang sedang berkuat kuasa;

(f) membawa dan membincangkan perkara berkaitan kursus Projek dalam Mesyuarat Jawatankuasa Pengurusan Akademik/Jawatankuasa Pelaksanaan Projek Pelajar atau mana mana mesyuarat berkaitan di peringkat politeknik;

(g) menyelaras ABM bagi pelaksanaan kursus Projek pelajar (sekiranya ada);

(h) memastikan rekod inventori projek pelajar di peringkat jabatan dan politeknik dikemaskini secara berterusan; dan

(i) menangani isu atau masalah berbangkit.

***Nota**:* Tanggungjawab Penyelaras Projek Pelajar peringkat politeknik ini boleh disesuaikan mengikut keperluan politeknik masing-masing.

2.3.3 Ketua Jabatan

Berikut merupakan tugas sebagai Ketua Jabatan:

(a) mempengerusikan Mesyuarat Jawatankuasa Pelaksanaan Projek Pelajar peringkat jabatan bagi membincangkan perkara berkaitan pelaksanaan kursus Projek;
(b) membawa dan membincangkan perkara berkaitan kursus Projek dalam Mesyuarat Jawatankuasa Pengurusan Akademik/Jawatankuasa Pelaksanaan Projek Pelajar di peringkat politeknik;
(c) memastikan pelaksanaan dan penilaian kursus Projek berdasarkan dokumen kurikulum yang sedang berkuat kuasa;
(d) memilih dan melantik pegawai yang terlibat dengan kursus Projek di peringkat jabatan; dan
(e) mendapatkan peruntukan pelaksanaan kursus Projek pelajar (sekiranya ada).

2.3.4 Unit Penyelidikan, Inovasi dan Pengkomersialan (UPIK)

Berikut merupakan tanggungjawab UPIK:

(a) merancang aktiviti berkaitan pembangunan produk inovasi, pertandingan hasil projek serta hasil penyelidikan dan inovasi;
(b) memudah cara aktiviti inovasi dan penyelidikan bersama pihak bertanggungjawab jika berkaitan;
(c) menyelaras pertandingan untuk memilih projek terbaik di peringkat politeknik;
(d) menyimpan rekod inventori projek di peringkat politeknik;
(e) mengenal pasti produk yang mempunyai nilai komersial dengan kerjasama Penyelaras Projek Pelajar Jabatan;
(f) menyelaras permohonan geran penyelidikan mengikut keperluan;
(g) menyelaras proses permohonan *Intellectual Property (IP)* bagi projek pelajar yang berpotensi dan berimpak tinggi;

(h) memaklum dan menyelaras penyertaan pertandingan inovasi di luar politeknik;
(i) menyelaras proses pengkomersialan projek/produk tertakluk kepada dasar yang ditetapkan oleh Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK); dan
(j) memaklumkan kepada pelajar secara bertulis sekiranya projek/produk mereka berjaya dikomersialkan untuk urusan pembahagian hasil pengkomersialan dalam kalangan pencipta.

2.3.5 Ketua Program

Berikut merupakan tugas sebagai Ketua Program:

(a) memantau pelaksanaan dan penilaian kursus Projek berdasarkan dokumen kurikulum yang sedang berkuat kuasa;
(b) menganalisis pencapaian hasil pembelajaran; dan
(c) mengawal selia penambahbaikan kualiti program pengajian secara berterusan *(CQI).*

2.3.6 Penyelaras Projek Pelajar Jabatan

Berikut merupakan tanggungjawab Penyelaras Projek Pelajar Jabatan:

(a) menjadi pegawai perantara antara jabatan akademik dan UPIK;
(b) memberi taklimat kepada Penyelia Projek;
(c) mewujudkan pangkalan data inventori projek yang diselenggara di jabatan;
(d) menyimpan satu salinan Borang Pendaftaran Projek Pelajar yang telah disahkan;
(e) memastikan rekod inventori projek dikemaskini dari semasa ke semasa;
(f) mengenal pasti dan melantik Panel Penilai projek dengan pengesahan;
(g) menyelaras pertandingan/simposium/kolokium/seminar projek pelajar peringkat jabatan; dan

(h) menangani isu atau masalah berbangkit.

***Nota**:* Tanggungjawab Penyelaras Projek Pelajar peringkat jabatan ini boleh disesuaikan mengikut keperluan jabatan dan program pengajian masing-masing.

2.3.7 Penyelaras Kursus Projek

Berikut merupakan tugas sebagai Penyelaras Kursus Projek:

(a) menjadi pegawai perantara antara pelajar dan Penyelia Projek;
(b) menyediakan senarai Penyelia Projek yang disahkan oleh Ketua Jabatan;
(c) menyerahkan senarai Penyelia Projek kepada Penyelaras Jadual Waktu Jabatan;
(d) memberi taklimat kursus Projek kepada pelajar;
(e) menyediakan maklumat berkaitan kursus Projek;
(f) menyediakan jadual perancangan aktiviti projek sepanjang semester;
(g) menyediakan senarai nama ahli kumpulan Projek pelajar berserta Penyelia Projek;
(h) menyimpan satu salinan Borang Pendaftaran Projek yang telah disahkan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);
(i) memastikan tiada pertindihan dan pengulangan tajuk projek serta meluluskan pertukaran tajuk projek;
(j) mengedarkan senarai Penyelia Projek yang dilantik dan disahkan oleh Ketua Jabatan;
(k) menyedia dan mengedarkan jadual pembentangan dan penilaian kursus Projek;
(l) menyediakan borang rubrik pemarkahan kursus Projek secara berasingan bagi setiap pelajar;
(m) menyerahkan satu salinan Borang Pendaftaran Projek yang telah diluluskan kepada Penyelaras Projek Pelajar Jabatan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);
(n) mengedarkan senarai Panel Penilai projek yang dilantik;
(o) menyediakan prosedur dan panduan penilaian kursus Projek;

(p) memastikan markah direkodkan ke dalam sistem;
(q) menganalisis pencapaian hasil pembelajaran kursus Projek;
(r) mengumpul, merekod dan mengemaskini inventori Projek (rujuk BAB 5: HARTA INTELEK PROJEK);
(s) membuat cadangan penambahbaikan kualiti kursus Projek secara berterusan (CQI); dan
(t) menyimpan satu salinan Laporan Akhir Projek dan hasil projek jika berkeperluan;

2.3.8 Penyelia Projek

Berikut merupakan tanggungjawab Penyelia Projek:

(a) membincangkan tajuk dan skop projek/kajian dengan pelajar serta mengesahkannya;
(b) melulus dan menyerahkan Borang Pendaftaran Projek kepada Penyelaras Kursus Projek pada awal semester untuk pengesahan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);
(c) menyediakan surat kebenaran kepada pelajar untuk menjalankan projek/kajian (sekiranya perlu);
(d) bertanggungjawab terhadap keselamatan pelajar ketika di makmal/bengkel (jika berkaitan).
(e) membimbing, memudah cara dan menyelia pelajar supaya proses pembelajaran, pengisian pengetahuan dan perjalanan projek dapat dilaksanakan ke arah mencapai hasil pembelajaran yang ditetapkan (rujuk BAB 7 : PENULISAN LAPORAN);
(f) merekod kehadiran pelajar;
(g) mengadakan pertemuan/perbincangan dengan pelajar secara bersemuka atau dalam talian (*online*) serta menyemak dan mengesahkan rumusan kemajuan projek/kajian sepanjang semester menggunakan Buku Log (rujuk BAB 6: BUKU LOG);

(h) membimbing dan menasihati pelajar cara penulisan kertas cadangan/laporan bersesuaian dengan jenis projek/kajian yang dilaksanakan oleh pelajar (rujuk BAHAGIAN II: FORMAT PENULISAN LAPORAN);

(i) memastikan penulisan adalah berdasarkan format dan panduan penulisan yang telah di tetapkan;

(j) menilai projek/kajian pelajar di bawah seliaan;

(k) merekod dan menyerahkan markah kepada Penyelaras Kursus Projek;

(l) memastikan pelajar menghantar satu salinan laporan dan/atau hasil projek kepada Penyelaras Kursus Projek mengikut tarikh yang ditetapkan; dan

(m) menyimpan satu salinan Laporan Akhir Projek dan hasil projek (jika berkeperluan);

2.3.9 Mentor Industri

Berikut merupakan tugas Mentor Industri semasa pelajar berada di dalam semester WBL:

(a) memberi cadangan tajuk projek pelajar;

(b) meluluskan cadangan projek pelajar (jika berkaitan);

(c) membimbing, memudahcara dan menyelia pelajar supaya proses pembelajaran, pengisian pengetahuan dan perjalanan projek dapat dilaksanakan ke arah mencapai hasil pembelajaran yang ditetapkan;

(d) menyemak dan mengesahkan Buku Log Projek pelajar secara berkala (jika berkaitan); dan

(e) menilai projek pelajar mengikut keperluan kursus.

***Nota**:* Pelaksanaan kursus Projek di industri bagi program pengajian secara WBL dan tanggungjawab Mentor Industri ini boleh disesuaikan mengikut keperluan program pengajian masing-masing (jika berkaitan).

2.3.10 Panel Penilai

Panel Penilai adalah terdiri daripada pensyarah atau panel luar yang pakar dalam bidang masing-masing. Berikut merupakan tanggungjawab Panel Penilai projek:

(a) menilai pembentangan kertas cadangan/projek pelajar dengan menggunakan borang pemarkahan atau rubrik mengikut program pengajian; dan

(b) mengembalikan borang pemarkahan atau rubrik kepada Penyelia Projek/Penyelaras Kursus Projek pada tarikh yang ditetapkan.

***Nota**:* Kaedah penilaian boleh dilaksanakan dalam pelbagai kaedah sama ada secara bersemuka atau dalam talian mengikut kesesuaian dan situasi semasa.

2.3.11 Pelajar

Berikut merupakan tanggungjawab pelajar:

(a) mematuhi prosedur dan peraturan keselamatan, kesihatan dan etika di makmal/bengkel (jika berkaitan);

(b) melaksanakan tanggungjawab sebagai ahli kumpulan dalam projek berkumpulan (jika berkaitan);

(c) membuat kajian awal keperluan industri atau komuniti dalam menentukan pemilihan tajuk, keaslian idea dan hala tuju projek serta mempunyai nilai komersial;

(d) memilih projek yang menyumbang kepada keperluan industri atau komuniti dan digalak mengadakan kolaborasi dengan pihak berkenaan;

(e) menyedia dan mengemukakan cadangan tajuk projek kepada Penyelia Projek pada awal semester;

(f) melengkapkan dan mengemukakan Borang Pendaftaran Projek kepada Penyelia Projek dalam tempoh yang ditetapkan untuk kelulusan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);

(g) melaksanakan projek mengikut takwim dan carta Gantt pelaksanaan projek;

(h) merekod kemajuan projek dalam Buku Log dan mendapatkan pengesahan Penyelia Projek;

(i) mengadakan perbincangan secara bersemuka atau dalam talian (*online*) dengan Penyelia Projek secara berkala dengan membawa bersama dokumen yang berkaitan;

(j) mendapatkan Surat Mohon Khidmat Kepakaran dan Kerjasama Industri (jika berkaitan) untuk menjalankan projek daripada Ketua Jabatan (rujuk LAMPIRAN E: CONTOH SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI);

(k) menyedia dan menyerahkan Laporan Akhir Projek berserta produk (jika berkaitan) untuk pembentangan dan penilaian projek;

(l) berusaha mencapai kualiti dan hasil pembelajaran mengikut kriteria penilaian yang ditetapkan;

(m) memohon kebenaran secara bertulis kepada pihak jabatan sekiranya terdapat tawaran pembelian daripada mana-mana syarikat atau organisasi semasa tempoh pengajian mahupun selepas bergraduat; dan

(n) mengikuti arahan pihak politeknik dari semasa ke semasa.

BAB 3: PERANCANGAN PROJEK

3.1 Peraturan Projek

Berikut merupakan peraturan dalam pelaksanaan projek yang perlu dipatuhi berdasarkan keperluan program pengajian:

(a) pelajar dibenarkan mengambil kursus Projek mengikut syarat kurikulum program pengajian;

(b) pelajar yang mendaftar kursus Projek sahaja yang dibenarkan untuk melaksanakan projek;

(c) pelajar hendaklah mendapatkan bimbingan/khidmat nasihat daripada Penyelia Projek dalam pemilihan tajuk projek/kajian;

(d) pemilihan tajuk adalah berdasarkan bidang program masing-masing dan pelajar amat digalak melaksanakan projek merentasi bidang yang dipelajari seiring dengan perkembangan teknologi terkini;

(e) pelajar perlu mendaftar tajuk projek/kajian (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);

(f) pertukaran tajuk projek/kajian dan Penyelia Projek dibenarkan dengan kebenaran Penyelaras Kursus Projek (rujuk LAMPIRAN C: BORANG PERMOHONAN PERTUKARAN TAJUK PROJEK);

(g) pelajar perlu menyediakan carta Gantt pelaksanaan projek (rujuk LAMPIRAN B: CARTA GANTT PROJEK PELAJAR). Perancangan kerja disediakan dalam bentuk carta Gantt dengan memperincikan pengagihan tugas di antara ahli kumpulan (jika berkenaan) dan sasaran masa bagi setiap tugasan. Perancangan atau skop kerja mestilah merujuk kepada tugasan sebenar untuk menjalankan projek/kajian berkenaan. Untuk tujuan perancangan kerja, pelajar boleh mengaplikasikan konsep *Plan-Do-Check-Action (PDCA)* dalam merancang pelaksanaan projek atau konsep yang bersesuaian;

(h) pelajar perlu merekodkan aktiviti pelaksanaan projek/kajian dalam Buku Log (rujuk LAMPIRAN G: BUKU LOG);

(i) penggunaan fasiliti politeknik perlu mendapat kelulusan daripada pegawai bertanggungjawab (rujuk LAMPIRAN D: BORANG PERMOHONAN MENGGUNAKAN KEMUDAHAN MAKMAL/BENGKEL);

(j) pelajar perlu mendapatkan surat kebenaran daripada pihak politeknik sekiranya projek/kajian tersebut melibatkan agensi luar/industri (rujuk LAMPIRAN E: SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI);

(k) pelajar **wajib** memenuhi **semua komponen penilaian** kursus Projek dalam program pengajian yang diikuti. Pelajar yang gagal berbuat demikian boleh diberikan status **GAGAL** kursus Projek;

(l) projek pelajar akan disimpan di politeknik selama setahun sebagai bahan rujukan (jika berkaitan); dan

(m) pelajar perlu memastikan hasil penulisan projek adalah bebas dari unsur plagiat.

3.2 Agihan Pelajar dan Penyelia Projek

Agihan pelajar dan Penyelia Projek dilaksanakan oleh Penyelaras Kursus Projek.

3.3 Pemilihan Projek/Kajian

Pemilihan projek/kajian dilaksanakan selepas perbincangan di antara Penyelia Projek dan pelajar berdasarkan ciri-ciri projek/kajian yang dinyatakan di Bab 1, perkara 1.7.

3.4 Pembiayaan

Kos keseluruhan projek/kajian pelajar ditanggung sepenuhnya oleh pelajar. Namun, politeknik tiada halangan sekiranya pelajar mendapatkan mana-mana penajaan untuk melaksanakan projek tersebut dan perlu memaklumkannya kepada Penyelia Projek.

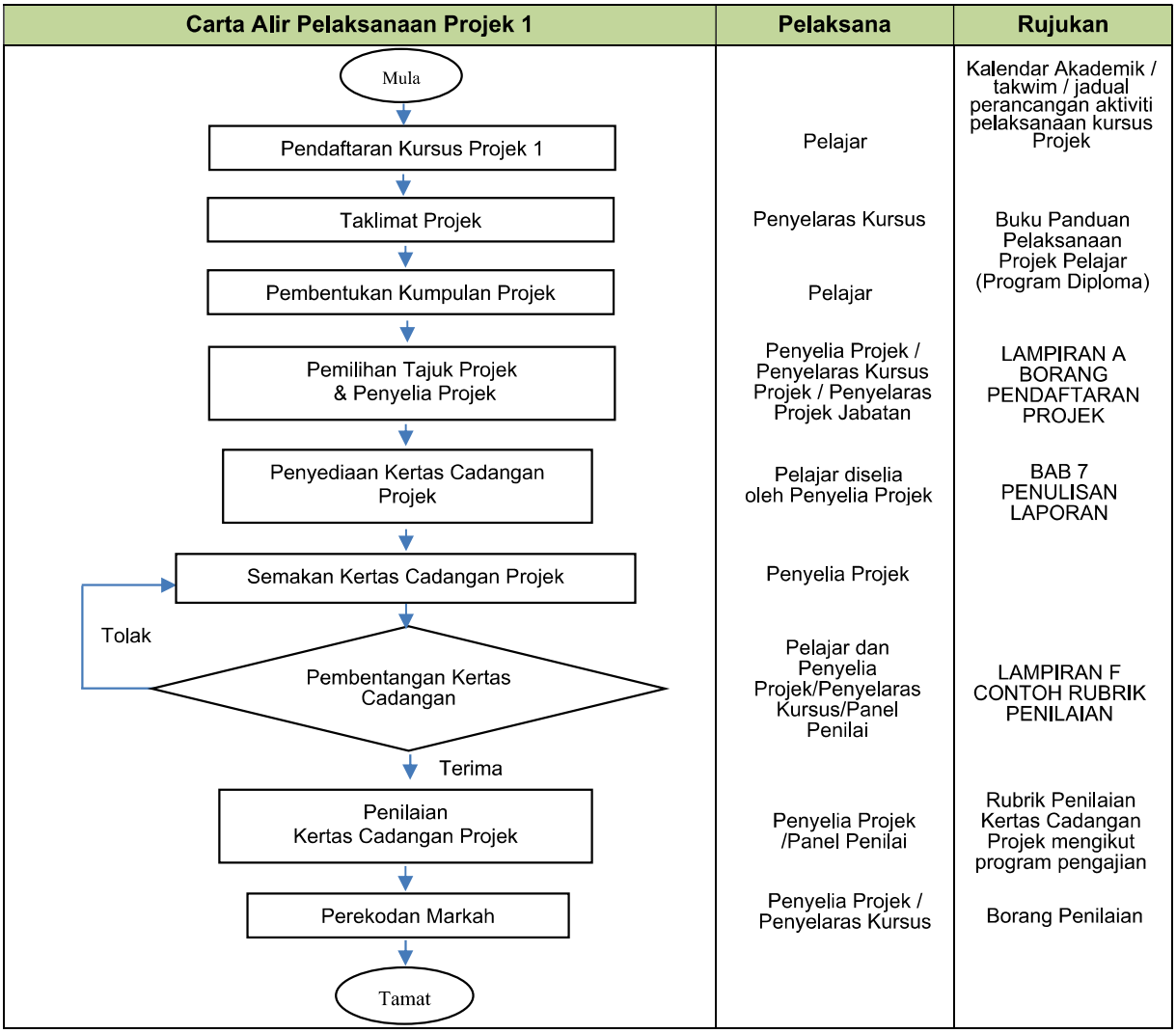
BAB 4: PELAKSANAAN PROJEK

4.1 Carta Alir Pelaksanaan Projek

Pelaksanaan projek perlu melalui proses dan prosedur yang telah ditetapkan di dalam kurikulum program masing-masing (rujuk carta alir dan penerangan mengenai pelaksanaan kursus Projek mengikut bidang pengajian). Namun, pelaksanaan kursus Projek adalah berbeza antara program pengajian (kejuruteraan, teknologi, perdagangan, perkhidmatan dan industri kreatif) dan perlu mengikut kurikulum program yang telah ditetapkan.

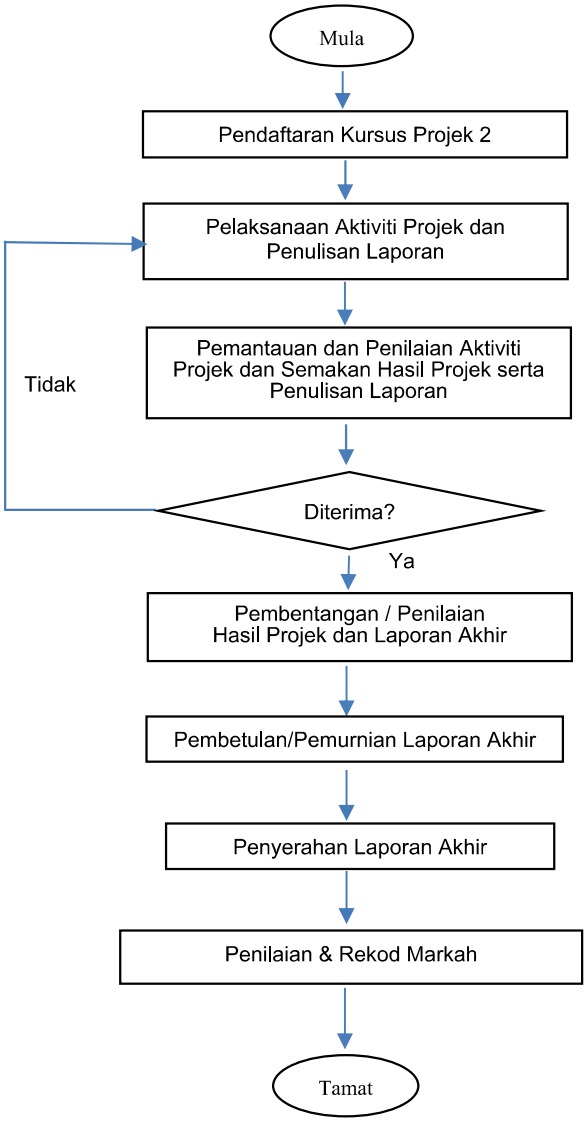
(a) Kursus Projek yang dijalankan dalam tempoh DUA (2) semester

(i). Carta Alir Projek 1:



Rajah 4.1 Carta Alir Pelaksanaan Kursus Projek 1

(ii). Carta Alir Projek 2:

Carta Alir Pelaksanaan Projek 2	Pelaksana	Rujukan
	Pelajar Pelajar diselia/dibimbing oleh Penyelia Pojek Pelajar dan Penyelia Projek Pelajar dan Penyelia Projek/ Panel Penilai Pelajar dan Penyelia Projek Pelajar Penyelia Projek/ Panel Penlai Penyelia Projek / Penyelaras Kursus	Kalendar Akademik / Takwim / Jadual Perancangan Aktiviti Pelaksanaan Kursus Projek Kertas Cadangan Projek BAB 6 PENULISAN BUKU LOG BAB 7 PENULISAN LAPORAN LAMPIRAN F CONTOH RUBRIK PENILAIAN BAB 7 PENULISAN LAPORAN LAMPIRAN I AKUAN KEASLIAN DAN HAK MILIK LAMPIRAN F CONTOH RUBRIK PENILAIAN Borang Penilaian Penyelia

Rajah 4.2 Carta Alir Pelaksanaan Kursus Projek 2

Nota: Pelaksanaan Carta Alir pada Rajah 4.1 dan Rajah 4.2 yang digariskan ini tertakluk kepada keperluan dan kesesuaian kursus dan program pengajian di politeknik.

(b) Kursus Projek yang dijalankan dalam tempoh <u>SATU (1)</u> semester sahaja.

Carta Alir Kursus Projek	Pelaksana	Rujukan
Mula		Kalendar Akademik / takwim / jadual perancangan aktiviti pelaksanaan kursus Projek
Pendaftaran Kursus Proiek	Pelajar	
Taklimat Projek	Penyelaras Projek	LAMPIRAN A BORANG PENDAFTARAN PROJEK
Pembentukan Kumpulan Projek	Pelajar / Penyelia Projek	
Pemilihan Tajuk Projek/Kajian & Penyelia Projek	Pelajar	
Penyediaan Kertas Cadangan Projek/Kajian	Pelajar diselia oleh Penyelia Projek	BAB 7 PENULISAN LAPORAN
Tidak — Semakan Kertas Cadangan Projek/Kajian	Penyelia Projek	
Pembentangan/ Penilaian Kertas Cadangan Projek/Kajian	Pelajar/ Panel Penilai	LAMPIRAN F CONTOH RUBRIK PENILAIAN
Diterima?		
Ya		
Pelaksanaan Aktiviti Projek/Kajian & Penulisan Laporan	Pelajar	BAB 7 PENULISAN BUKU LOG
Pemantauan dan Penilaian Aktiviti Projek/Kajian dan Semakan Hasil Projek/Kajian serta Penulisan Laporan	Penyelia Projek	
Tidak — Diterima?		
Ya		
Pembentangan/Penilaian Hasil Projek/Kajian & Laporan Akhir	Pelajar / Panel Penilai	LAMPIRAN F CONTOH RUBRIK PENILAIAN
Pembetulan/Pemurnian Laporan Akhir	Pelajar	LAMPIRAN I AKUAN KEASLIAN DAN HAK MILIK
Penyerahan Laporan Akhir	Pelajar	
Penilaian & Rekod Markah	Penyelia Projek/ Penyelaras Projek Pelajar Jabatan	LAMPIRAN F CONTOH RUBRIK PENILAIAN Borang Penilaian Penyelia
Tamat		

Rajah 4.3 Carta Alir Pelaksanaan Kursus Projek

***Nota*:** Pelaksanaan Carta Alir yang digariskan ini tertakluk kepada keperluan dan kesesuaian kursus dan program pengajian di politeknik.

4.1.1 Pendaftaran Kursus Projek

Pelajar mendaftar kursus Projek dengan kaedah yang ditetapkan oleh politeknik.

4.1.2 Taklimat

Penyelaras Projek Pelajar Jabatan/Penyelaras Kursus Projek menyampaikan taklimat projek kepada Penyelia Projek dan pelajar pada **minggu pertama** perkuliahan. Penerangan ini bagi memastikan semua pihak yang terlibat mendapat maklumat yang jelas dan selaras terhadap tugas serta tanggungjawab masing-masing ke arah penghasilan projek pelajar yang berkualiti, berinovasi dan mempunyai nilai komersial. Isi kandungan taklimat yang dicadangkan adalah seperti berikut:

(a) *Course Outline* (CLO, PLO, AST) berdasarkan dokumen kurikulum;
(b) aktiviti pelaksanaan projek/kajian mengikut kalendar dan takwim/jadual perancangan aktiviti pelaksanaan kursus Projek;
(c) jenis-jenis projek/kajian berdasarkan keperluan program masing-masing;
(d) tema, tajuk dan idea projek/kajian dalam bidang;
(e) pengagihan pelajar mengikut Penyelia Projek;
(f) pendaftaran tajuk projek/kajian yang dipersetujui oleh Penyelia Projek dan/atau Penyelaras Kursus Projek;
(g) penulisan Kertas Cadangan dan carta Gantt;
(h) penilaian pembentangan dan kertas cadangan;
(i) Buku Log pelajar;
(j) pelaksanaan projek pelajar;
(k) pembahagian markah berdasarkan dokumen kurikulum program pengajian;
(l) pelaporan, pembentangan dan Laporan Akhir Projek;
(m) pembiayaan projek;
(n) hak milik projek; dan
(o) Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik yang sedang berkuat kuasa yang perlu dipatuhi.

4.1.3 Pembentukan Kumpulan Projek

Projek/Kajian boleh dilaksanakan secara individu atau berkumpulan (tidak melebihi **empat (4)** orang pelajar) mengikut bentuk projek/kajian yang hendak dijalankan. Bagi projek berkumpulan, skop tugasan bagi setiap ahli kumpulan hendaklah dinyatakan dengan jelas dan terperinci. Kertas Cadangan dan Laporan Akhir Projek boleh dihasilkan mengikut kumpulan tetapi penulisan perlu mengikut skop tugasan setiap ahli kumpulan. Namun, pelajar amat digalakkan untuk menghasilkan kertas cadangan dan laporan projek secara individu.

Nota: Pembentukan kumpulan projek boleh ditambah atau diubah mengikut keperluan program pengajian masing-masing.

4.1.4 Pemilihan Tajuk Projek/Kajian dan Penyelia Projek

Pelajar perlu mengemukakan Borang Pendaftaran Projek (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK) untuk pemilihan tajuk projek/kajian dan penyelia projek **selewat-lewatnya pada minggu ke-3** sesi perkuliahan, bergantung kepada takwim pelaksanaan kursus Projek atau sebarang pindaan semasa. Penyelaras Projek Pelajar Jabatan/Penyelaras Kursus Projek/Penyelia Projek digalakkan untuk menetapkan tema/kategori bagi membantu pelajar menjana idea dan menentukan projek/kajian yang bakal dilaksanakan. Tajuk projek/kajian yang dipilih perlu memenuhi skop dan selaras dengan kurikulum kursus mengikut program pengajian masing-masing. Cetusan idea projek adalah daripada pelajar sendiri, penyelia, komuniti setempat atau kolaborasi industri.

Penyelia Projek perlu mengesahkan tajuk projek/kajian yang telah dipilih oleh pelajar. Tajuk projek/kajian merupakan tajuk yang telah dipersetujui oleh Penyelaras Kursus Projek, Penyelia Projek dan pelajar bagi memenuhi ciri-ciri yang dinyatakan dalam Bab 1 pada perkara 1.5 dan 1.7.

Pertukaran tajuk projek hanya dibenarkan dengan persetujuan Penyelia Projek dan sokongan Penyelaras Kursus Projek. Pertukaran tajuk projek dengan kebenaran boleh dilakukan hingga **minggu ke-6** perkuliahan. Pelajar perlu merujuk kepada inventori projek sebelum memberi cadangan tajuk baharu kepada Penyelia Projek. Walau

bagaimanapun, pelajar boleh merujuk kepada projek/kajian terdahulu bagi tujuan penambahbaikan produk/kajian yang sedia ada.

4.1.5 Penyediaan Kertas Cadangan Projek/Kajian

Penyediaan Kertas Cadangan projek/kajian adalah bergantung kepada keperluan kursus dan program pengajian (rujuk BAB 7: PENULISAN LAPORAN pada perkara 7.1) dalam proses penulisan. Penulisan Kertas Cadangan boleh dibuat dalam Bahasa Malaysia atau Bahasa Inggeris. Namun, ia tertakluk kepada pengurusan projek pelajar di politeknik masing-masing.

4.1.6 Semakan Kertas Cadangan Projek/Kajian

Penyelia Projek harus menyemak Kertas Cadangan projek/kajian yang telah disediakan oleh pelajar untuk menentukan kesesuaian projek/kajian. Sekiranya Kertas Cadangan gagal menepati ciri/kriteria yang ditetapkan dan wujud ketidakakuran, pelajar perlu membuat pembetulan Kertas Cadangan tersebut dengan bimbingan Penyelia Projek. Maklumat yang berkaitan boleh merujuk pada BAB 7: PENULISAN LAPORAN dalam perkara 7.1.

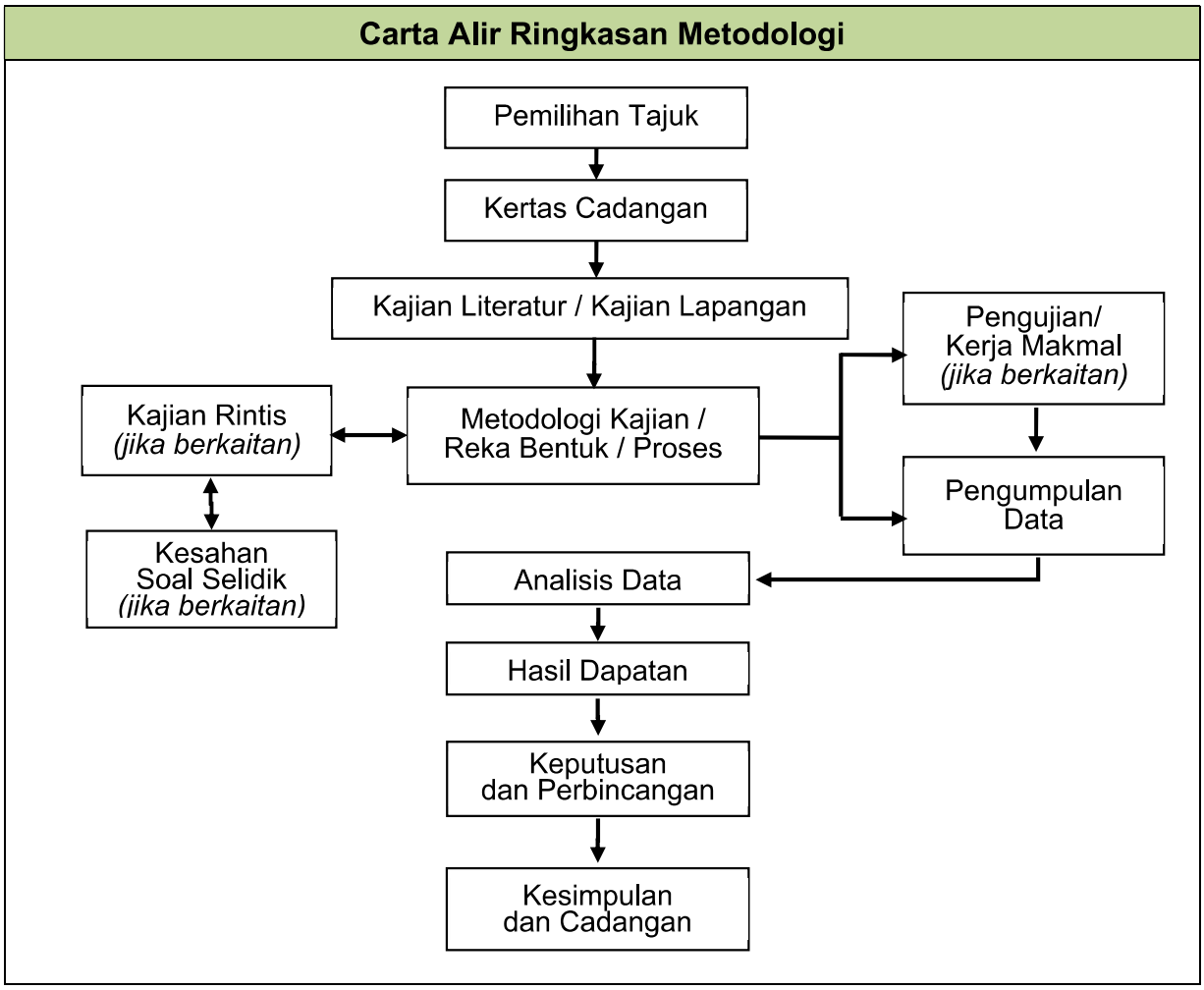
4.1.7 Pembentangan dan Penilaian Kertas Cadangan Projek/Kajian

Pelajar perlu membentang Kertas Cadangan projek/kajian kepada Penyelia Projek/Panel Penilai. Penyelia Projek/Panel Penilai akan menilai Kertas Cadangan projek/kajian pelajar berdasarkan rubrik yang disediakan oleh Penyelaras Kursus Projek (rujuk LAMPIRAN F: CONTOH RUBRIK PENILAIAN). Bagi Kertas Cadangan projek/kajian yang memenuhi ciri/kriteria tetapi terdapat komen dari Penyelia Projek/Panel Penilai, pelajar dikehendaki membuat pembetulan yang sewajarnya dan menyerahkan semula Kertas Cadangan yang telah diperbetulkan. Penyelia Projek akan merekodkan markah ke dalam Sistem Pengurusan Maklumat Politeknik (SPMP) atau Sistem Pengurusan Maklumat iPUO yang diguna pakai di politeknik.

Nota: Rubrik Penilaian boleh disesuaikan mengikut keperluan program masing-masing.

4.1.8 Pelaksanaan Aktiviti Projek/Kajian dan Penulisan Laporan

Kelulusan untuk meneruskan projek/kajian adalah tertakluk kepada Penyelia Projek/ Panel Penilai yang membuat penilaian terhadap Kertas Cadangan berkenaan berdasarkan kriteria dan skop seperti yang dinyatakan. Pelajar perlu melaksanakan aktiviti projek/kajian yang telah dirancang dan menghasilkan Laporan Akhir Projek/Kajian (rujuk BAB 7: PENULISAN LAPORAN) berdasarkan Kertas Cadangan projek/kajian yang telah diluluskan. Pelaksanaan projek/kajian hendaklah mengikut takwim/jadual perancangan aktiviti pelaksanaan kursus Projek (jabatan/politeknik) dan Carta Gantt pelaksanaan projek/kajian pelajar masing-masing. Metodologi projek/kajian yang boleh diadaptasi oleh pelajar adalah seperti di Rajah 4.4 dibawah:



Rajah 4.4: Ringkasan Metodologi Yang Digunakan Untuk Pembangunan Kajian/Projek

Nota: Kajian Rintis dilaksanakan mengikut kesesuaian projek/kajian yang dijalankan.

Penyelia Projek harus menyelia dan membimbing pelajar dalam keseluruhan proses pelaksanaan projek/kajian bermula dari taklimat projek sehingga mendapat perakuan dalam penghasilan Laporan Akhir Projek/Kajian. Pelaksanaan Projek boleh dilaksanakan mengikut amalan hijau dokumen Blueprint POLYGreen JPPKK, KPT.

Segala perbelanjaan aktiviti projek/kajian adalah di bawah tanggungan pelajar sendiri, namun pelajar boleh berbincang dengan Penyelia Projek bagi mendapatkan peruntukan daripada politeknik sekiranya projek/kajian tersebut berkepentingan kepada politeknik. Pelajar juga digalakkan untuk bekerjasama dengan Penyelia Projek bagi mendapatkan geran penyelidikan daripada mana-mana kementerian serta organisasi yang menawarkan geran tersebut (sekiranya berkaitan).

Kebenaran menggunakan fasiliti politeknik perlu mendapat sokongan Penyelia Projek dan mendapat persetujuan pegawai yang bertanggungjawab. Pelajar perlu mendapatkan surat kebenaran menjalankan aktiviti luar politeknik daripada Penyelia Projek yang ditandatangani oleh Pengarah Politeknik.

4.1.9 Pemantauan dan Penilaian Aktiviti Projek/Kajian dan Semakan Hasil Projek/Kajian Serta Penulisan Laporan

Penyelia Projek membuat pemantauan, semakan dan penilaian Buku Log serta aktiviti projek/kajian yang dilaksanakan oleh setiap pelajar secara berkala dan ianya perlu direkodkan. Hasil projek haruslah disemak oleh Penyelia Projek sebelum sesi pembentangan dan penilaian oleh Panel Penilai. Kaedah pemantauan dan penilaian projek boleh dilaksanakan secara dalam talian atau bersemuka mengikut kesesuaian (rujuk LAMPIRAN L: PANDUAN PENGENDALIAN PEMANTAUAN DAN PENILAIAN PROJEK SECARA DALAM TALIAN).

4.1.10 Pembentangan/Penilaian Projek/Kajian Akhir dan Laporan Akhir

Pelajar perlu membentangkan hasil projek bagi tujuan penilaian oleh Panel Penilai mengikut rubrik pemarkahan yang telah ditetapkan. Sekiranya hasil projek gagal memenuhi kriteria yang ditetapkan maka pelajar perlu membuat perbincangan dengan Penyelia Projek dan seterusnya membuat pembetulan, menghantar semula Laporan Akhir Projek dan membuat pembentangan semula jika perlu.

4.1.11 Pembetulan/Pemurnian Laporan Akhir

Berdasarkan cadangan Panel Penilai, pelajar dikehendaki melakukan pembetulan yang sewajarnya dengan bimbingan Penyelia Projek serta menghantar semula Laporan Akhir Projek yang telah dimurnikan.

4.1.12 Penyerahan Hasil Projek dan Laporan Akhir

Pelajar dikehendaki menyerahkan:

(a) Laporan Akhir Projek berjilid yang telah disahkan oleh Penyelia Projek dan Penyelaras Kursus Projek dalam bentuk salinan digital (PDF); dan

(b) Borang Akuan Keaslian dan Hak Milik (rujuk LAMPIRAN I: AKUAN KEASLIAN DAN HAK MILIK) kepada Penyelia Projek/Penyelaras Kursus Projek untuk rekod simpanan.

Nota: Kaedah penyerahan dan bentuk laporan boleh diubah suai mengikut kesesuaian kursus Projek program pengajian masing-masing.

4.1.13 Penilaian dan Rekod Markah Laporan Akhir Projek

Penilaian Laporan Akhir Projek akan dinilai oleh Penyelia Projek setelah laporan berjilid diserahkan. Penyelia Projek/Penyelaras Kursus Projek merekodkan markah dan melengkapkan semua komponen penilaian kursus Projek berdasarkan kurikulum program pengajian ke dalam Sistem Pengurusan Maklumat Politeknik (SPMP) atau Sistem Pengurusan Maklumat iPUO yang diguna pakai di politeknik.

4.2 Penilaian Kursus Projek

Penilaian kursus Projek perlu dilakukan sepanjang semester. Pencapaian pelajar diukur berdasarkan hasil pembelajaran yang ditetapkan di dalam kurikulum kursus Projek program pengajian masing-masing. **Semua komponen penilaian (elemen pengurusan dan pelaksanaan projek, pembentangan dan laporan projek) yang merujuk kepada komponen penilaian *(Assessment Specification Table)* kursus Projek di dalam program pengajian masing-masing perlu dilaksanakan sepenuhnya oleh setiap pelajar dan dinilai secara individu.**

Pelajar juga perlu membuat pembetulan Laporan Akhir Projek sebagaimana dikehendaki oleh Penyelia Projek dan Panel Penilai (sekiranya ada). Penilaian berbentuk individu di dalam satu kumpulan, perlu dibuktikan melalui borang rubrik pemarkahan bagi setiap pelajar yang disediakan oleh Penyelaras Kursus Projek mengikut kesesuaian kursus Projek program pengajian masing-masing.

Penilaian dilaksanakan oleh Penyelia Projek dan Panel Penilai yang dilantik. Panel Penilai dari setiap jabatan atau institusi pengajian tinggi dan industri luar boleh dilantik untuk menilai pembentangan dan hasil projek/kajian pelajar. Pemilihan tempat dan masa yang sesuai akan ditentukan oleh Penyelaras Projek Pelajar Jabatan. Penilaian menggunakan Borang Pemarkahan Projek berserta rubrik penilaian yang berkaitan mengikut program pengajian. Antara perkara yang dinilai (merujuk kepada keperluan kurikulum program pengajian) adalah seperti berikut:

(a) Kertas Cadangan
(b) Hasil Projek
(c) Laporan Akhir Projek
(d) Pembentangan
(e) Buku Log
(f) Kehadiran
(g) Penglibatan

Semua bentuk penilaian adalah tertakluk kepada Arahan-arahan Peperiksaan dan Kaedah Penilaian (Diploma) Politeknik Malaysia (dikeluarkan oleh Bahagian Peperiksaan dan Penilaian (BPN), JPPKK) yang sedang berkuat kuasa. Cadangan rubrik adalah seperti contoh di LAMPIRAN F: CONTOH RUBRIK PENILAIAN:

(a) Rubric for Involvement Evaluation
(b) Rubric for Log book Format Evaluation
(c) Rubric for Presentation Evaluation
(d) Rubric for Final Report Evaluation
(e) Rubric for Model Evaluation
(f) Rubric for Innovation and Creativity Evaluation

Nota: Rubrik penilaian boleh diubah suai mengikut kesesuaian kursus Projek program pengajian melalui kaedah penilaian sama ada secara bersemuka atau dalam talian.

Panel Penilai boleh terdiri daripada pensyarah politeknik dan panel luar daripada industri/institusi pengajian yang dilantik oleh politeknik. Antara tugas Panel Penilai projek adalah:

(a) menilai pembentangan projek menggunakan borang pemarkahan atau rubrik mengikut program pengajian; dan
(b) memberi komen/maklum balas untuk penambahbaikan projek pelajar.

4.2.1 Pelajar boleh **DIGAGALKAN** kursus Projek sekiranya:

(a) tidak memenuhi sepenuhnya komponen penilaian kursus Projek merujuk kepada kurikulum program pengajian yang sedang berkuat kuasa;
(b) dibuktikan wujud unsur plagiat dalam pelaksanaan/penghasilan projek/kajian (idea, penulisan atau reka cipta orang lain); dan
(c) tidak memenuhi Arahan-arahan Peperiksaan dan Kaedah Penilaian (Diploma) Politeknik Malaysia (dikeluarkan oleh BPN, JPPKK) yang sedang berkuat kuasa serta arahan yang dikeluarkan oleh politeknik dari semasa ke semasa.

4.2.2 Dalam keadaan tertentu, pihak pengurusan politeknik boleh menggunakan budi bicara dalam melaksanakan arahan berhubung dengan perkara 4.2.1 di atas.

BAB 5: HARTA INTELEK PROJEK

Harta Intelek adalah hak eksklusif yang diberikan oleh undang-undang untuk tempoh masa tertentu kepada pencipta karya untuk mengawal penggunaan karya mereka. Perlindungan hak cipta di Malaysia adalah berasaskan kepada Akta Hak Cipta 1987. Oleh itu, Perbadanan Harta Intelek Malaysia (MyIPO) yang merupakan sebuah badan yang ditubuhkan oleh kerajaan telah dipertanggungjawabkan untuk menguruskan perlindungan pelbagai bentuk harta intelek seperti cap dagang (*trademark*), hak cipta (*copyright*), paten (*patent*) dan reka bentuk perindustrian (*industrial design*), petunjuk geografi (*geographical indication*) dan reka bentuk susun atur litar bersepadu (*IC layout designs*).

5.1 Peraturan dan Akta Harta Intelek

Peraturan dan Akta Harta Intelek termasuk sebarang hak milik yang termaktub seperti:

(a) paten dan perbaharuan utiliti seperti yang ditakrifkan dalam Akta Paten 1983;

(b) hak cipta dan perlindungan yang diberi berasaskan kepada Akta Hak Cipta 1987;

(c) cap dagangan dan perlindungannya yang diberi berasaskan kepada Akta Cap Dagangan 1976 dan di bawah undang-undang lazim bagi kelirupaan (*passing off*);

(d) reka bentuk perindustrian dan perlindungannya yang diberikan di bawah Akta Reka Bentuk Perindustrian 1996;

(e) perlindungan bagi maklumat sulit dan rahsia perniagaan/dagangan;

(f) petunjuk geografi yang diberi berasaskan kepada Akta Petunjuk Geografi 2000; dan

(g) reka bentuk susun atur litar bersepadu yang diberikan di dalam Akta Reka Bentuk Susun Atur Litar Bersepadu 2000.

5.2 Hak Harta Intelek

Harta intelek adalah semua jenis perkara yang dilindungi di bawah akta dan undang-undang yang dinyatakan di perkara 5.1. Ia terdiri daripada pemikiran manusia, seperti idea, reka cipta, reka bentuk, lakaran, lukisan, penulisan dan muzik. Takrifannya merangkumi program komputer, reka bentuk susun atur litar bersepadu dan pangkalan data.

Hak harta intelek adalah hak terkawal mengikut undang-undang khusus yang membolehkan pemilik harta intelek melaksanakan kawalan eksklusif ke atas pengeksploitasi hak-hak tersebut dengan tujuan untuk memperolehi keuntungan daripada aktiviti pengkomersialan.

5.3 Hak Cipta

(a) Akta Hak Cipta 1987 memberi perlindungan kepada pencipta karya untuk mengawal penggunaan karya yang dihasilkan. Berdasarkan pecahan kategori karya adalah seperti sastera, seni, muzik, filem, bunyi, siaran dan terbitan;

(b) Pelajar boleh mendaftarkan hak cipta sebagai perlindungan hak eksklusif bagi produk yang direka cipta;

(c) Pihak MyIPO mencadangkan bahawa perlindungan hasil kerja projek boleh dibahagikan kepada dua kategori iaitu (i) Sastera (melindungi manual dan penulisan mengenai produk pelajar) dan (ii) Seni (melindungi grafik yang terdapat pada produk yang dihasilkan). Walau bagaimanapun, ia mengikut kesesuaian hasil kerja yang dihasilkan; dan

(d) Tempoh perlindungan adalah selama-lamanya, tidak perlu diperbaharui, tetapi boleh luput selepas 50 tahun kematian pemiliknya.

5.4 Keaslian Projek

Sesuatu projek dikategorikan sebagai asli apabila projek tersebut dihasilkan atau dibangunkan sendiri oleh pelajar secara individu atau berkumpulan tanpa unsur plagiat. Menurut Dewan Bahasa dan Pustaka (Kamus Pelajar Edisi Kedua), plagiat adalah hasil mencedok karya atau tulisan orang lain yang disiarkan kembali sebagai karya sendiri (biasanya dalam hal karang-mengarang). Dalam konteks ini, plagiat merujuk kepada perbuatan mengguna atau meniru hasil kerja/karya orang lain tanpa kebenaran dan secara sedar mengakui hasil kerja/karya tersebut sebagai hasil kerja/karya sendiri tanpa memberikan kredit/pengiktirafan kepada pengkarya asal. Tindakan memberi kredit atau mengiktiraf pengkarya asal boleh dizahirkan dengan memetik (*quote*) atau menyatakan (*cite*) sumber yang dirujuk.

Berdasarkan Arahan-Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Politeknik Malaysia yang sedang berkuat kuasa (dikeluarkan oleh BPN, JPPKK), plagiat merupakan bentuk penyelewengan akademik dan sabit kesalahan, boleh dikenakan tindakan. Justeru, penilaian keaslian projek pelajar perlu melibatkan proses penapisan bagi memastikan ianya bebas daripada unsur plagiat.

5.5 Carian Paten

Carian paten (*prior art search*) adalah bentuk semakan yang dilakukan terhadap reka cipta terdahulu bagi memastikan elemen terbaru (*novelty*) sesuatu reka cipta di samping mengelakkan pelanggaran hak harta intelek (*infringement*) atau peniruan reka cipta.

Bagi melakukan proses carian paten, cara mudah adalah dengan menggunakan kata kunci (*keywords*) menerusi sumber seperti berikut:

(i). *Google Patent* menerusi pautan https://patents.google.com
(ii). European Patent Office (www.espacenet.com)
(iii). Patent Lens Home (www.patentlens.com)
(iv). WIPO - Search International and National Patent Collections (www.wipo.int/pctdb)

(v). Korean Intellectual Property Office (KIPO) (www.kipo.go.kr/en)

(vi). Laman sesawang rasmi Jabatan Cap Dagang dan Paten Amerika Syarikat *(US Patent and Trademark Office)* http://www.uspto.gov/patent.

Maklumat yang lebih terperinci mengenai harta intelek termasuk paten boleh dilayari laman sesawang Perbadanan Harta Intelek Malaysia (MyIPO), melalui pautan http://www.myipo.gov.my.

5.6 Pendaftaran Harta Intelek Bagi Projek

Pusat Penyelidikan dan Inovasi (PPI), JPPKK menetapkan bahawa pendaftar harta intelek bagi projek pelajar didaftarkan sebagai hak cipta. Namun, dalam kes-kes tertentu Penyelaras Projek Pelajar Politeknik/Jabatan dan KUPIK boleh mencadangkan sekiranya terdapat projek pelajar yang mempunyai impak dan berpotensi tinggi untuk didaftarkan.

5.7 Pemilikan Hak Harta Intelek

Harta intelek akan difailkan atau didaftarkan atas nama politeknik. Politeknik bertanggungjawab untuk mengambil segala tindakan yang perlu dalam menguatkuasakan hak harta intelek sekiranya berlaku eksploitasi dan sebarang pelanggaran hak harta intelek.

5.7.1 Hak milik projek boleh dibahagikan kepada **TIGA (3)** kategori:

(a) Semua hasil projek pelajar adalah **hak milik politeknik** sekiranya:

(i). projek itu dibangun atau direka cipta atas keperluan program pengajian politeknik; dan

(ii). projek dijanakan, direka cipta, dibangunkan atau dihasilkan dengan menggunakan kemudahan, bahan, dana atau sumber lain milik politeknik; atau

(iii). projek tersebut direka cipta dengan sokongan dan di bawah seliaan Penyelia Projek Politeknik.

(b) Semua hasil projek pelajar menerusi kolaborasi dengan pihak industri menjadi **hak milik bersama politeknik dan industri** mengikut terma kolaborasi yang telah dipersetujui di antara politeknik dan industri.

(c) Semua hasil projek pelajar juga menjadi **hak milik politeknik** mengikut terma kolaborasi yang telah dipersetujui di antara politeknik dan industri.

5.8 Pengagihan Insentif Kepada Pencipta dan Institusi

Pengagihan insentif/royalti atas kemenangan pertandingan yang diterima adalah seperti berikut:

Pengagihan Insentif	Pencipta	Institusi
RM250,000.00 yang pertama	80%	20%
RM250,000.00 ke RM1,000,000.00	70%	30%
RM1,000,000.01 ke RM2,000,000.00	60%	40%
RM2,000,000.00 ke atas	50%	50%

Contoh:

Berdasarkan kepada polisi pengkomersialan Kementerian Sains, Teknologi dan Inovasi (MOSTI) dan Polisi Pengkomersialan JPPKK menyatakan pengagihan insentif yang diperoleh hasil daripada nilai wang kemenangan berjumlah RM5,000.00 mengikut formula 80:20 iaitu 80% daripada jumlah kemenangan diberikan kepada pereka cipta/rakan pasukan, manakala baki 20% diagihkan kepada pemilik produk tersebut iaitu politeknik.

5.9 Inventori Projek

Penyelia Projek bertanggungjawab menyemak keaslian projek/kajian yang dihasilkan. Penyelaras Kursus Projek perlu sentiasa mengemaskini **inventori projek pelajar** supaya tiada projek/kajian yang berulang atau bertindih dengan projek/kajian yang dibangunkan sebelum ini. Pelajar perlu menyerahkan Borang Inventori Projek dalam bentuk salinan keras (*hard copy)* dan salinan lembut (*soft copy)* kepada Penyelia

Projek bersekali dengan laporan dan hasil projek (rujuk LAMPIRAN J: BORANG INVENTORI PROJEK PELAJAR). Inventori projek pelajar perlu disimpan di peringkat program dan politeknik bagi tujuan penyelarasan dan semakan akreditasi program pengajian.

Antara maklumat yang diperlukan dalam inventori projek pelajar adalah seperti berikut (rujuk LAMPIRAN J: BORANG INVENTORI PROJEK PELAJAR):

(a) Nama Projek
(b) Ahli Kumpulan
(c) Kategori Kluster Penyelidikan (rujuk BAB 1: PENGENALAN)
(d) Penyelia
(e) Abstrak Projek
(f) Pendaftaran Harta Intelek selain Hak Cipta (produk yang berpotensi dan berimpak tinggi)

5.10 Penyertaan Dalam Pertandingan/Simposium/Kolokium/Seminar

Pelajar digalakkan untuk menyertai pertandingan atau pembentangan hasil/inovasi projek di seminar/kolokium di mana-mana peringkat. Penglibatan pelajar dalam pertandingan inovasi dan kemahiran seperti *International Invention & Innovation Exhibition (ITEX*), *Malaysia Technology Expo* (*MTE), Innovation and Invention Competition through Exhibition (iCompEx), International Engineering Invention & Innovation Exhibition (i-Envex)* dan lain-lain pertandingan berprestij dapat meningkatkan kemahiran serta menggalakkan daya kreativiti dan inovasi dalam kalangan pelajar. Sebarang penyertaan projek dalam mana-mana pertandingan disarankan agar merujuk kepada KUPIK politeknik masing-masing bagi tujuan penyelarasan dan semakan bahan pertandingan seperti poster dan sebagainya (LAMPIRAN K: TEMPLAT POSTER PERTANDINGAN INOVASI PROJEK PELAJAR) supaya menepati standard yang ditetapkan.

Selain itu, pertandingan sebegini dapat menggalakkan pelajar menceburkan diri dalam bidang penyelidikan dan seterusnya mewujudkan kolaborasi antara politeknik dengan

agensi luar seperti badan-badan bukan kerajaan, institusi pengajian tinggi, persatuan usahawan dan orang persendirian di dalam dan di luar negara. Justeru, usaha sebegini diharap dapat melahirkan kumpulan tenaga kerja TVET yang berkemahiran ke arah memacu industri negara setanding dan setaraf dengan pencapaian di negara maju.

5.11 Pengkomersialan

Pengkomersialan adalah sesuatu produk atau perkhidmatan inovasi yang didaftarkan melalui harta intelek di bawah politeknik dan mempunyai potensi menjanakan pendapatan secara berterusan melalui satu platform kewangan yang diiktiraf.

Projek akhir pelajar yang berjaya atau diiktiraf atau disenaraikan berpotensi untuk dikomersialkan melalui pelbagai platform pertandingan atau pameran boleh dipertimbangkan bagi tujuan pengkomersialan mengikut pekeliling yang berkuat kuasa. Bagi kesinambungan projek pelajar ini, Penyelia Projek pelajar boleh merujuk kepada KUPIK di politeknik dan JPPKK untuk tindakan susulan.

BAB 6: BUKU LOG

6.1 Pengenalan

Buku Log projek disediakan oleh pelajar secara individu untuk mencatat setiap aktiviti kerja, penemuan baru dan tugasan yang dijalankan sepanjang tempoh pelaksanaan projek. Buku ini juga merupakan salah satu kaedah untuk Penyelia Projek memantau perkembangan dan kemajuan projek/kajian pada setiap kali pertemuan dan perbincangan bersama pelajar. Contoh format lengkap Buku Log seperti di LAMPIRAN G: BUKU LOG.

Setiap pelajar perlu melengkapkan Buku Log yang ditulis dengan jelas dan terperinci bagi tujuan penilaian oleh Penyelia Projek. Antara perkara yang dinilai dalam Buku Log adalah:

(a) pencapaian pelajar berdasarkan Carta Gantt;
(b) prestasi pelaksanaan projek/kajian; dan
(c) perkembangan intelek dan sahsiah pelajar

6.2 Panduan Penggunaan Buku Log

Berikut merupakan panduan penggunaan Buku Log:

(1). pelajar perlu mencatat semua aktiviti berkaitan projek/kajian yang dijalankan mengikut keperluan program pengajian;
(2). Buku Log perlu dibawa bersama setiap kali mengadakan pertemuan dan perbincangan bersama Penyelia Projek untuk tujuan semakan dan pengesahan;
(3). Buku Log perlu diserahkan kepada Penyelia Projek untuk disemak dan disahkan sekurang-kurangnya sekali setiap minggu;
(4). Penyelia Projek perlu memberi maklum balas/komen di dalam Buku Log pelajar setiap minggu; dan
(5). Buku Log perlu diserahkan kepada Penyelia Projek untuk penilaian.

6.3 Penulisan Buku Log

Berikut disenaraikan keperluan penulisan Buku Log bagi aktiviti pelaksanaan projek pelajar:

(a) pelajar perlu mencatat aktiviti dan tugasan sepanjang minggu;
(b) pelajar perlu memperincikan segala perancangan di ruangan Laporan Aktiviti Mingguan agar selari dengan perancangan yang telah dinyatakan di dalam Carta Gantt;
(c) pelajar perlu menyatakan pencapaian sebenar atau status projek terkini pada ruangan yang disediakan;
(d) pada bahagian Cadangan Tugasan perlu diisi oleh pelajar dengan menyatakan cadangan yang berkaitan sebagai langkah penambahbaikan kepada projek/kajian; dan
(e) Penyelia Projek perlu memberi maklum balas/komen pada setiap tugasan yang telah dijalankan oleh pelajar.

6.4 Format Kandungan Buku Log

Berikut merupakan format kandungan Buku Log:

(a) Borang Pendaftaran Projek **(LAMPIRAN A: BORANG PENDAFTARAN PROJEK)**
(b) Muka Hadapan Buku Log **(LAMPIRAN G: BUKU LOG)**
(c) Isi Kandungan Buku Log **(LAMPIRAN G: BUKU LOG)**
(d) Laporan Aktiviti Mingguan **(LAMPIRAN G-1 dan LAMPIRAN G-2)**
(e) Carta Gantt Projek Pelajar **(LAMPIRAN B: CARTA GANTT PROJEK PELAJAR)**

Nota: Format kandungan Buku Log boleh diubah suai mengikut kesesuaian kursus Projek program pengajian masing-masing.

BAB 7: PENULISAN LAPORAN

Pelaksanaan projek melibatkan penulisan Kertas Cadangan dan Laporan Akhir Projek. Perkara yang digariskan ini tertakluk kepada keperluan serta kesesuaian dengan merujuk kepada kurikulum program pengajian yang sedang berkuat kuasa di politeknik.

7.1 Kertas Cadangan

Kertas Cadangan projek/kajian adalah dokumen awal yang memperincikan projek/kajian yang hendak dilaksanakan. Ia merupakan pelan keseluruhan yang menerangkan latar belakang kajian, strategi yang digunakan untuk mendapatkan jawapan kepada permasalahan kajian, persoalan kajian dan kepentingan kajian. Kertas Cadangan perlu mengandungi perkara-perkara berikut:

7.1.1 Projek Jenis Kajian

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Kajian
- 1.3 Pernyataan Masalah
- 1.4 Objektif Kajian
- 1.5 Persoalan Kajian
- 1.6 Skop Kajian
- 1.7 Kepentingan Kajian
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Jangkaan Dapatan/Keputusan Kajian
- 1.10 Rumusan

BAB 2: KAJIAN LITERATUR
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka bentuk Kajian
  - 3.2.1 Pensampelan
  - 3.2.2 Kaedah Pengumpulan Data
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Anggaran Kos Kajian

7.1.2 Projek Jenis Nyata

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Projek
- 1.3 Pernyataan Masalah
- 1.4 Objektif Projek
- 1.5 Persoalan Projek
- 1.6 Skop Projek
- 1.7 Kepentingan Projek
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Jangkaan Dapatan/Keputusan Projek
- 1.10 Rumusan

BAB 2: KAJIAN LAPANGAN
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu/Ulasan/Siasatan
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka Bentuk Projek
  - 3.2.1 Kaedah/Prosedur/Teknik Penghasilan Projek
  - 3.2.2 Bahan dan Peralatan
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Anggaran Kos Projek
- iii. Spesifikasi dan Senarai Bahan dan Peralatan *(jika berkaitan)*
- iv. Lakaran/Lukisan/Gambarajah Litar/Carta Alir dsbg. *(jika berkaitan)*

***Nota**:* Kertas Cadangan tidak melebihi **TIGA PULUH (30)** muka surat.

7.2 Laporan Akhir Projek

Laporan Akhir Projek merupakan nukilan asli yang perlu dihasilkan oleh pelajar. Ia merupakan penulisan yang perlu disediakan dengan lengkap dan terperinci melibatkan keseluruhan pembangunan/penghasilan projek/kajian.

7.2.1 Susunan dan Kandungan Penulisan Laporan Akhir

Susunan dan kandungan laporan yang dicadangkan dalam penghasilan Laporan Akhir Projek merangkumi **DUA (2)** bahagian iaitu:

(a) Bahagian Awal (rujuk LAMPIRAN H: FORMAT UMUM LAPORAN AKHIR)

(i). Muka Hadapan
(ii). Tajuk
(iii). Perakuan Keaslian
(iv). Penghargaan
(v). Abstrak
(vi). Senarai Kandungan
(vii). Senarai Jadual
(viii). Senarai Rajah
(ix). Senarai Simbol
(x). Senarai Singkatan

(b) Bahagian Utama

Bab 1-3 perlu merujuk kepada huraian dalam Kertas Cadangan seperti di perkara 7.1. Namun, huraian tersebut perlu ditulis dalam bentuk ayat yang telah dilaksanakan (ayat pasif) di dalam penulisan Laporan Akhir Projek. Keterangan terperinci mengenai susunan dan kandungan laporan yang dicadangkan dalam menghasilkan Laporan Akhir Projek adalah seperti di perkara 7.2.2. Berikut adalah susunan dan kandungan Laporan Akhir Projek yang dicadangkan mengikut jenis projek yang dilaksanakan oleh pelajar:

(i). Projek Jenis Kajian

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Kajian
- 1.3 Pernyataan Masalah
- 1.4 Objektif Kajian
- 1.5 Persoalan Kajian
- 1.6 Skop Kajian
- 1.7 Kepentingan Kajian
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Rumusan

BAB 2: KAJIAN LITERATUR
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka bentuk Kajian
  - 3.2.1 Pensampelan
  - 3.2.2 Kaedah Pengumpulan Data
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

BAB 4: DAPATAN KAJIAN DAN PERBINCANGAN
- 4.1 Pendahuluan
- 4.2 Dapatan Kajian
- 4.3 Perbincangan
- 4.4 Rumusan

BAB 5: KESIMPULAN DAN CADANGAN
- 5.1 Pendahuluan
- 5.2 Kesimpulan
- 5.3 Cadangan
- 5.4 Limitasi Kajian
- 5.5 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Kos Kajian

(ii). Projek Jenis Nyata

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Projek
- 1.3 Pernyataan Masalah
- 1.4 Objektif Projek
- 1.5 Persoalan Projek
- 1.6 Skop Projek
- 1.7 Kepentingan Projek
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Rumusan

BAB 2: KAJIAN LAPANGAN
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu/Ulasan/Siasatan
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka Bentuk Projek
  - 3.2.1 Kaedah/Prosedur/Teknik Penghasilan Projek
  - 3.2.2 Bahan dan Peralatan
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

BAB 4: DAPATAN KAJIAN DAN PERBINCANGAN
- 4.1 Pendahuluan
- 4.2 Dapatan Kajian/Pengujian
- 4.3 Perbincangan
- 4.4 Rumusan

BAB 5: KESIMPULAN DAN CADANGAN
- 5.1 Pendahuluan
- 5.2 Kesimpulan
- 5.3 Cadangan
- 5.4 Limitasi Projek
- 5.5 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Kos Projek
- iii. Spesifikasi, Senarai Bahan dan Peralatan *(jika berkaitan)*
- iv. Lakaran/Lukisan/Gambar Rajah Litar/Carta Alir dan sebagainya *(jika berkaitan)*

***Nota**:* Laporan Akhir Projek tidak kurang daripada **LIMA PULUH (50)** muka surat

7.2.2 Keterangan Susunan dan Kandungan Penulisan Laporan

Penerangan mengenai kandungan Kertas Cadangan dan Laporan Akhir Projek adalah seperti di bawah:

ABSTRAK

Abstrak adalah satu pernyataan ringkas yang lengkap merangkumi keseluruhan kandungan Laporan Projek Akhir. Panjangnya hendaklah **tidak melebihi 250 perkataan** (dalam satu halaman muka surat sahaja). Abstrak perlu disediakan dalam dua bahasa iaitu Bahasa Malaysia dan diikuti Bahasa Inggeris pada halaman muka surat yang berasingan. Antara kandungan penting dalam abstrak adalah:

(a) apa dan kenapa projek/kajian dilakukan?;
(b) pernyataan masalah: apa masalah yang cuba hendak diselesaikan?
(c) pendekatan/kaedah digunakan untuk menyelesaikan masalah: simulasi, analisis model, menghasilkan prototaip, kumpul dan analisis data, produk;
(d) dapatan dan keputusan: dinyatakan dalam bentuk teks yang menyatakan sesuatu yang lebih baik dari sedia ada;
(e) kesimpulan: implikasi dapatan dan keputusan, perubahan yang telah dibuat dan sebagainya; dan
(f) cadangan: cadangan pendekatan atau penambahbaikan yang boleh di buat untuk kajian selanjutnya dalam isu yang sama.

BAB 1: PENGENALAN

Pengenalan merujuk kepada satu rumusan cadangan projek/kajian yang akan dijalankan. Bab ini merangkumi pendahuluan, latar belakang projek/kajian, pernyataan masalah, tujuan dan objektif projek/kajian, persoalan projek/kajian, skop projek/kajian, kepentingan projek/kajian dan definisi terminologi projek/kajian. Oleh itu, kandungan penulisan bab yang disyorkan adalah seperti berikut:

1.1 Pendahuluan

Tujuan pendahuluan adalah untuk memberikan satu gambaran menyeluruh tentang kajian yang akan dijalankan. Pendahuluan mengetengahkan isu-isu utama yang berkaitan dengan fokus projek/kajian. Isu-isu ini lazimnya dihuraikan secara ringkas dalam beberapa perenggan dan disokong dengan dapatan projek/kajian terdahulu.

Contoh 1.1 (TEKNIKAL):

The depletion of world petroleum reserves and the increased environmental concerns have stimulated the search for alternative sources for petroleum-based fuel, including diesel fuels. Because of the closer properties, biodiesel fuel (fatty acid methyl ester) from vegetable oil is considered as the best candidate for diesel fuel substitute in diesel engines…

Adaptasi petikan dari Kusdiana & Saka (2001)

***Contoh 1.1 (SAINS SOSIAL)*:**

Selepas pertengahan tahun 1990-an, pelancongan penyelaman skuba adalah antara pelancongan alternatif yang semakin pesat membangun dan popular di peringkat antarabangsa. Setiap tahun, sejumlah besar pertukaran mata wang asing berlaku terutamanya di negara-negara pesisir pantai yang mempunyai potensi persekitaran yang kaya dengan sumber marin terutamanya landskap semula jadi, pelbagai spesies haiwan dan tumbuh-tumbuhan akuatik, gua atau gunung berapi di bawah air, dan lain-lain (Hall, 2005; Alban et al., 2008; Peters dan Hawkins, 2009). Pendapatan sesetengah negara (contohnya, Greece) amat bergantung kepada industri penyelaman skuba. Kepentingan aktiviti penyelaman skuba dalam industri pelancongan dapat dilihat dalam Jadual 1…

Adaptasi petikan dari Mapjabil, Yusoh & Zainol (2012)

1.2 Latar Belakang Projek/Kajian

Latar belakang projek/kajian merujuk kepada maklumat terkini yang berkaitan isu-isu semasa yang menjadi fokus kajian. Tujuannya adalah untuk memberitahu pembaca tentang status semasa dalam industri berhubung isu-isu semasa tersebut. Lazimnya latar belakang akan disokong dengan rujukan (misalnya buku, artikel jurnal, laporan, surat khabar atau dasar kerajaan). Antara perkara yang boleh dikemukakan adalah seperti berikut:

(a) apakah situasi semasa dalam industri?; dan

(b) kenapa kajian ini perlu dijalankan? (Rasional projek/kajian)

***Contoh 1.2 (TEKNIKAL)*:**

The bricks technology today has been developing in many ways to search other waste materials as sand replacement or as an additive material. This is because the sand has become a big issue in Malaysia where many struggle occurred and the theft of sand in the sand area that is not supposed to. A lot of sandy areas have been destroyed and the quality sand supply is decreasing day by day. Nowadays, issue on environment preservation and the sustainability of the development are very crucial. This is because effect of global warming and the amount of the non-renewable sources is extremely diminished. As related to sustainability issues, a search of alternative sand is become a challenge to the construction nowadays. One of the materials that may be potentially used as an alternative material to natural sand is Bottom Ash. Bottom ash consists of coal components which did not combust during burning phase.

Adaptasi petikan dari Syakir & Naganathan (2013)

***Contoh 1.2 (SAINS SOSIAL)*:**

This chapter looks into the importance of the Malaysian construction industry towards the economy growth and contribution to the country. Along the way the main issue or problem of abandoned projects and the needed effort on proceeding with the restoration of abandoned projects in Malaysian and its consequences are discussed here. This issue is also shown to be endured in other countries as well apart from Malaysia. Therefore, the purpose of conducting this research based on the background of the problem and narrowing down the research scope, and coming towards identifying the research aim and objectives are discussed by the author in this chapter as well.

Malaysia is a dynamic country which is constantly evolving as stated in an article from The German Chamber Network, (2012). In the year 2011, New Straits Times has reported that the Malaysia's Economic Performance ranking improved to 7th place out of 59 economies compared with the 12th position in 2007. The Malaysian construction industry is generally separated into two areas. One area is general construction, which comprises residential construction, non-residential construction and civil engineering construction. The second area is special trade works, which comprises activities of metal works, electrical works, plumbing, sewerage and sanitary works, refrigeration and air conditioning works, painting works, carpentry, tiling and flooring works and glass works (Malaysian Institute of Economic Research, 2011). The Department of Statistics, Malaysia, (2010) has described the Malaysian construction industry as a substantial economic driver for Malaysia.

Adaptasi petikan dari Kamal, Haron, Ulang & Baharum (2012)

1.3 Pernyataan Masalah

Pernyataan masalah merujuk kepada sesuatu isu/masalah yang memerlukan penyelesaian berpandukan pendahuluan kajian. Ia menghuraikan masalah yang ingin diatasi serta sumbangan dapatan projek/kajian untuk menyelesaikan masalah tersebut sama ada secara menyeluruh atau sebahagiannya.

Pernyataan masalah mesti mempunyai hubung kait yang jelas dengan latar belakang projek/kajian dengan mengambil kira perkara berikut:

(a) faktor/sebab masalah itu berlaku;

(b) kesan/impak kepada negara/masyarakat/ekonomi/alam sekitar; dan

(c) rujukan permasalahan seperti:

- Kaedah Tinjauan Awal (*Preliminary Research*)
- Artikel/Jurnal/Laporan/Kajian Lepas

Contoh 1.3 (TEKNIKAL):

Sand is a major material used in a production of sand cement brick. Nowadays, the sand had become an issue and a big problem in Malaysia as more and more intruders began to invade the sand without permission and stole all the sand. The global consumption of natural sand was very high due to the extensive use of concrete. In this situation, Malaysia as a developing country is facing a shortage in the supply of natural sand (Safiuddin et al., 2007). Cement brick production used a lot of sand. Samad (2010) reported that for the production of cement brick, 4 part of sand is required. Due to high demand of sand, it is a must to find an alternative material to reduce a demand of natural sand. Due to this problem, this is a challenge for the engineers to think and find solutions to reduce the use of sand.

Adaptasi petikan dari Khalid, Herman, Azmi & Irwan (2017)

Contoh 1.3 (SAINS SOSIAL):

The problem of abandoned projects in the construction industry is a global phenomenon and the construction industry in Malaysia is no exception. The abandonment of construction projects has resulted in many adverse consequences to the country's economy, society, buyers, banks and environment where this issue or problem has to be solved. Economically, it is a waste of useful resources and the enhancement on the quality of life for the people is also affected. Low and Tan (1994) stated that quality development unit (QDU) in Singapore has adopted ISO 8402, in which the quality here refers to the characteristics of the project or service that is able to provide the satisfaction for the stated or implied needs. Olusegun and Michael, (2011), has stated that the construction industry plays a very dominant role in the economy of any nation. A healthy economy usually experience an increase in construction activities, but in a depressed economy, the incidence of project abandonment tends to be more prevalent.

The impact of abandoned project has affected the society and environment negatively as well. Past researchers Bavani and Stuart, (2009) has reported in their study that abandoned project has caused the existence of pools of stagnant water which has become the breeding ground for mosquitos endangering the health of the public and environment. As for the environment it has become a sore eyes as the surrounding of the abandoned project is subjected as a place to dump rubbish and overgrown of grasses. The impact of this issue of abandoned project on buyers are best described as sad. Not only the properties that they have invested a certain amount of money is now incomplete but yet they have to proceed with the monthly loan payment to the bank. The main impact faced by banks due to this issue is the overwhelming debts, (Kong, 2009). These impacts that are briefly touched here shows on the importance and ***necessity*** *of going ahead with project restoration.*

Adaptasi petikan dari Doraisamy (2017)

1.4 Objektif Projek/Kajian

Objektif kajian perlu dikaitkan dengan pernyataan masalah dan dinyatakan dengan jelas bagaimana masalah tersebut dapat diatasi. Bilangan objektif kajian yang dicadangkan adalah antara dua (2) hingga tiga (3) objektif. Kriteria *SMART* (spesifik, boleh diukur, boleh dicapai, realistik dan mengambil kira kekangan masa) adalah disarankan sebagai panduan bagi penulisan objektif projek/kajian.

Contoh 1.4 (TEKNIKAL):

The objectives of this study are:

(i). *to determine the strength, density and elasticity of cement bottom ash bricks;*
(ii). *to compare the strength, density and elasticity of cement bottom ash bricks to cement sand bricks; and*
(iii). *to identify the potential bottom ash as a replacement materials of sand production in cement bricks.*

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.4 (SAINS SOSIAL):

The aim of this research is to develop an effective model as a guide towards project restoration. This model could be used to mitigate the issue of abandoned residential construction projects in Malaysia, hoping this could lead towards achieving zero abandonment of residential projects in the country in the coming future. Therefore, there are some objectives that has been identified which will lead to the achievement of this aim:

(i). *to identify the significant factors for abandoned project restoration;*
(ii). *to identify the significant factors for the discontinuation on proceeding with the restoration of an abandoned project or non-revival of an abandoned project; and*
(iii). *to develop, validate and test the Abandoned Project Restoration Model (APRM).*

Adaptasi petikan dari Doraisamy (2017)

1.5 Persoalan Projek/Kajian *(Jika Berkaitan)*

Persoalan kajian pada asasnya merupakan soalan khusus yang ingin dijawab oleh penyelidik berpandukan objektif kajian. Ia perlu ditulis dalam bentuk soalan. Sekiranya persoalan kajian melibatkan pengujian hipotesis (misalnya membuat perbandingan, menentukan kewujudan perhubungan, membuat ramalan dan sebagainya), hipotesis tersebut perlu dinyatakan.

Contoh 1.5 (TEKNIKAL):

This study will answer the following research questions:

(a) Which protocol implementation is susceptible to manipulation attacks?
(b) What sequence of messages computed can be used to mount the attack?

Berdasarkan petikan dari Kothari et. al (2011)

Contoh 1.5 (SAINS SOSIAL):

In order to achieve the research objectives, three research questions are raised to help the researcher in achieving the research objectives. The research questions are as follows:

Question 1: What are the factors in proceeding with the revival of abandoned projects in Malaysia?

Question 2: Is there measures given leading to project revival, if so how far has it been effective/helpful?

Question 3: If there are measures leading to project revival are lacking and not effective, what are the reasons behind it?

Adaptasi petikan dari Doraisamy (2017)

1.6 Skop Kajian

Skop kajian menjelaskan had pelaksanaan kajian/projek yang dijalankan. Penjelasan ini penting bagi memastikan penilai dapat memahami sempadan kajian berkenaan. Pelajar perlu menjelaskan batasan atau limitasi dalam kajian seperti sampel, kajian, tempoh kajian, limitasi tempat, skop, metodologi kajian dan sebagainya.

Contoh 1.6 (TEKNIKAL):

This study focuses on the engineering properties of the cement bottom ash bricks (focus). The materials used in the cement bottom ash bricks are sand, cement and water (material). There were two types of fine aggregate that had been used in bricks manufactured which are river sand that taken from the river and bottom ash that had been taken from the Sultan Abdul Aziz Shah Power Station, Kapar (location). Ordinary Portland Cement (OPC) had been used as a binder in cement sand bricks (types/manufactured brand). The specimens size of the bricks is 225 x 100 x 70 mm and had been tested for engineering properties which are compressive strength, density and elasticity (testing).

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.6 (SAINS SOSIAL):

The problem of abandoned projects in the construction industry is a global phenomenon and the construction industry in Malaysia is no exception. This research focuses the issue of abandoned projects on residential construction projects. The abandoned residential projects that exist in Peninsular Malaysia is the main focus. This research is carried out using the mix method approach which are the qualitative and the quantitative methods. The population that is targeted in for the purpose of this research are the construction players surrounding Peninsular Malaysia. The data obtained from the research conducted is further analysed using the SPSS software and also with a software known as Analysis Moment of Structure (AMOS) which comes under its' main system called Structural Equation Modelling (SEM).

Adaptasi petikan dari Doraisamy (2017)

1.7 Kepentingan Projek/Kajian

Kepentingan projek/kajian juga disebut sebagai signifikan kajian yang menghuraikan secara ringkas kepentingan atau nilai dan sumbangan/implikasi projek/kajian yang dijalankan.

Contoh 1.7 (TEKNIKAL):

The research finding will contribute towards the application of bottom ash as replacement for sand hence improves the properties of sand cement bricks. This research involving the study of strength and elasticity of the sand cements bricks with bottom ash replacement when load is applied on it. In other hand, it produced a better strength with the characteristics of sand cement bricks. Since the method that produces real life response, it is greatly time consuming and the reused of by product materials from the power station can reduce the disposal cost and can be quite costly.

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.7 (SAINS SOSIAL):

Construction is a vital sector contributing significantly to the economics of all countries (Najmi, 2011). The construction industry must be dynamic to be able to respond to the changes that the world is constantly facing, as well as the social, economic, and technological challenges affecting all industries. The opportunities and problems in construction are different from those of the last century. The demands of clients, companies and employees differ from time to time, and thus the vision of the construction industry is always developing; to keep up, management must change too (Malaysian Institute of Economic Research, 2011).

Therefore, through this research we are able to test and measure completely the hypothesis and concepts, and also allows for a more comprehensive view of the problem on abandoned projects in this country to be obtained and also to single out as well the factors contributing to this. This research ascertains the causes in continuing and discontinuing a project that has already been abandoned.

Adaptasi petikan dari Doraisamy (2017)

1.8 Takrifan Istilah/Definisi Operasi

Takrifan Istilah/Definisi Operasi ini melibatkan istilah-istilah penting dalam projek/kajian. Ia perlu dijelaskan definisinya agar pembaca dapat memahami dengan lebih jelas projek/kajian yang dijalankan.

1.9 Jangkaan Dapatan Projek/Kajian (Kertas Cadangan)

Penerangan mengenai dapatan atau keputusan projek/kajian yang dijangka akan diperoleh perlu dinyatakan di dalam Kertas Cadangan projek/kajian.

Contoh 1.9 (TEKNIKAL):

At the end of this study it is expected to produce a potential bottom ash as a replacement materials of sand production in bricks, with equal strength, density and elasticity as conventional bricks.

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.9: (SAINS SOSIAL):

At the end of this research it is expected that the most significant factors leading towards the restoration of abandoned projects will be identified to allow further development of the Abandoned Projects Restoration Model (APRM).

Adaptasi petikan dari Doraisamy (2017)

1.10 Rumusan Bab

Rumusan bab merumuskan subtajuk utama yang telah dikemukakan dalam Bab 1 tanpa memperkenalkan bahan baharu dan seterusnya menunjukkan kesinambungan ke bab berikutnya.

BAB 2: KAJIAN LITERATUR/LAPANGAN

Bab 2 menerangkan pendahuluan ringkas kepada tajuk projek/kajian, konsep atau teori yang berkaitan, kajian terdahulu yang ada kaitan dengan bidang projek/kajian dan diakhiri dengan rumusan bab secara ringkas. Kajian literatur merupakan ulasan maklumat yang diperolehi daripada jurnal, buku, prosiding dan kajian lepas untuk sesuatu kajian terbaharu. Ia merupakan satu proses sistematik yang memerlukan penelitian dan kemahiran mencari, mengumpul, membaca serta merumus maklumat dengan terperinci kerana ia dapat memberikan idea dan hala tuju mengenai permasalahan yang sedang dikaji.

Dalam proses membuat kajian literatur, seseorang penyelidik akan mengenal pasti dapatan-dapatan penyelidik lain dalam bidang yang akan dikaji. Rujukan yang digunakan mestilah berkaitan dengan fokus projek/kajian. Jumlah bahan rujukan yang diperlukan adalah sekurang-kurangnya **LIMA (5)** rujukan ilmiah yang diterbitkan dalam jangka masa 5 tahun terdahulu. Elemen utama yang perlu diambil perhatian di dalam membuat analisis rujukan adalah:

(a) mencari kesamaan *(compare);*
(b) mencari ketidaksamaan *(contrast);*
(c) memberi pandangan *(criticsize);*
(d) membandingkan *(synthesize);* dan
(e) meringkaskan *(summarize)*

Oleh itu, kandungan penulisan bab yang disyorkan adalah seperti berikut:

2.1 Pendahuluan Bab

Tajuk umum, isu atau bidang yang menjadi tumpuan perlu dikenal pasti seterusnya menyediakan konteks yang sesuai untuk tinjauan literatur. Trend keseluruhan tajuk, cadangan dalam teori, metodologi, bukti dan kesimpulan atau masalah/perspektif baharu perlu dinyatakan.

2.2 Kajian Terdahulu/Lapangan/Ulasan/Siasatan

2.2.1 *Projek Jenis Kajian*

Hasil rujukan dan ulasan yang diperoleh daripada bahan literatur (kajian, *reviews*, artikel, kajian kes dan sebagainya) yang berkaitan dengan isu yang hendak dikaji. Kajian literatur merupakan asas penting supaya kajian yang dijalankan mempunyai garis panduan dan juga sumber rujukan yang tepat serta jelas. Ianya adalah satu proses sistematik yang memerlukan pembacaan dan perhatian yang terperinci yang membabitkan kesimpulan bertulis yang diringkaskan mengenai isu kajian yang berkaitan yang menjelaskan maklumat lepas dan semasa serta keperluan bagi kajian yang dicadangkan.

2.2.2 *Projek Jenis Nyata*

Hasil rujukan dan ulasan yang diperoleh daripada bahan literatur (kajian, *reviews*, artikel, kajian kes dan sebagainya) atau situasi sebenar keadaan yang berkaitan dengan projek yang akan dijalankan. Pelajar membuat kajian atau siasatan terhadap projek sedia ada di pasaran, kelemahan yang wujud, masalah yang cuba diselesaikan, teori-teori sokongan dan sebagainya. Siasatan ini perlu memberikan gambaran, ringkasan, dan penilaian kritikal terhadap masalah projek. Pembangunan projek juga boleh merujuk kepada dasar pembangunan negara atau dasar kerajaan yang sedia ada.

Contoh 2.2 (TEKNIKAL):

Brick is an extremely an old building material, known to have been used in the Mesopotamia region since the millennium before century.

(Giuseppe and Eduardo, 2009)

British Standard, BS 3921: 1985 has specified certain requirements for clay brick is for use in walling, and they are dimensions, compressive strength, water absorption, soluble salt content, efflorescence and sampling.

(British Standard, 1985)

Contoh 2.2 (SAINS SOSIAL):

A literature review is known as a text of a scholarly paper, which includes the current knowledge including important and real findings, as well as conjectural and methodological contributions to a particular topic. Literature reviews use incidental sources, and do not report new or original experimental work (Baglione, 2012). A literature review is a select analysis of existing research which is relevant to the research topic and shows how it relates to the research investigation. It explains and justifies how the investigation may help answer some of the questions or gaps in the research area (Shields and Rangarjan, 2013).

The literature reviews that was conducted for this research were evaluative, exploratory, and instrumental. Apart from that, narrative review was also used in which it summarises different primary studies which conclusions are drawn into a holistic interpretation based on the reviewers' own experience, existing theories and models (Campbell Collaboration, 2006; Kirkevold, 1997). This type of review contributed towards answering the research questions from Chapter 1.

***According to** Olalusi and Otunola, (2012), when a project has been started at an earlier date, but for some reasons has been stopped, it is described to be an abandoned project. Such abandonment are just not limited to buildings alone, but also to roads, industrial structures, bridges, factories, dams, electricity, communication projects and so on.*

*The issue of abandoned projects for example in Nigeria, has started more than 20 years ago, **where this could be seen in the study of** Akindoyeni, (1989), where he has stated that if projects are to be executed completely, planning is the most important agenda to be carried out, which Ogunsemi (1991) **further added** that the successful completion of a project depends on adequate planning which also includes financial planning.*

*Nigeria is one of the country which has high rates in abandoned projects since many years back. **It was reported by** Osemenan, (1987), that the construction industry of Nigeria has become the world's junk-yard of abandoned projects, where these projects are estimated to be worth of billions.*

***According to another report by** Kotangora, (1993), the issue of abandoned project was not given an adequate attention for a long time which has resulted a negative effect not only towards the construction industry but to the national economy as a whole.*

Adaptasi petikan dari Doraisamy (2017)

2.3 Rumusan Bab

Rumusan perlu dikaitkan dengan bahan rujukan yang memfokuskan tajuk utama dalam literatur dengan bidang yang hendak dikaji. Walau bagaimanapun, subtajuk yang dicadangkan boleh ditambah mengikut kesesuaian projek/kajian yang dilaksanakan.

Gaya Sitasi Rujukan

Dalam menulis kajian literatur, sumber rujukan hendaklah ditunjukkan dengan menyatakan nama pengarang dan tahun penerbitan mengikut teknik rujukan/sitasi (*citation*) yang ditetapkan mengikut program pengajian. Menurut *Oxford Dictionaries Online (2014),* sitasi *(citation)* merupakan petikan atau rujukan dari buku, artikel, atau penulis, terutamanya dalam penulisan ilmiah atau ucapan rasmi. Terdapat beberapa gaya sitasi yang boleh digunakan seperti *American Psychological Association (APA) Style* dan *Institute of Electrical and Electronic Engineers (IEEE) Style.* Sebarang gaya penulisan yang dipilih atau disarankan perlu digunakan secara konsisten. Gaya sitasi yang berlainan dalam satu laporan perlu dielakkan. Contoh menulis gaya sitasi APA ditunjukkan seperti berikut:

(a) Text/sentence… (author, year).
(b) According to author (year), text/sentence …
(c) Two authors can be used ‘and’
(d) Text/sentence … (author et.al., year).
(e) According to author et. al., (year), text/sentence …
(f) Author, (year) has stated/explained/elaborated/given …
(g) Author et al., (year) has stated/explained/elaborated/given …

Nota : et.al digunakan jika terdapat lebih daripada dua penulis.

Berikut dinyatakan beberapa contoh penulisan gaya sitasi seperti di Jadual 7.1.

Jadual 7.1: Penulisan Sitasi dan Senarai Rujukan

<table>
<tr><th>Gaya (Style)</th><th>Contoh Sitasi dan Senarai Rujukan
Sumber: Buku</th></tr>
<tr><td rowspan="2">APA/CSE

(name – year - system)</td><td>Sitasi (Citation)

Menurut United Nations World Tourism Organisation (UNWTO) (2013), pelancongan dunia telah berkembang sebanyak empat peratus pada tahun 2012 dengan mencatat jumlah ketibaan pelancong sebanyak 1035 million dan jumlah pendapatan sebanyak USD1075 billion....Kerajaan Malaysia telah menekankan pembangunan program homestay kerana ia adalah salah satu produk pelancongan yang perlu diperkasakan di negara ini (Mapjabil & Che Ismail, 2012). Asal usul program homestay bermula di Eropah pada tahun 1970-an ... (Mapjabil & Che Ismail, 2012).</td></tr>
<tr><td>Senarai Rujukan

United Nations World Tourism Organisation (UNWTO). (2013). World Tourism Barometer – Tourism Trends and Marketing. Madrid. Muat turun dari http://www.e-unwto.org/doi/pdf/10.18111/wtobarometereng.2013.11.1.1 pada 7 Oktober 2015.

Mapjabil, J. & Che Ismail, S. (2012). Program Homestay di Sungai Semilang, Pulau Pinang: Pembangunan dan Perubahan Persekitaran. Dalam J. Mapjabil & Din, K. H. (Ed). Pelancongan di Malaysia: Isu-isu Penyelidikan Terpilih. Sintok: Universiti Utara Malaysia Press.</td></tr>
</table>

<table>
<tr><th>Gaya (Style)</th><th>Contoh Sitasi dan Senarai Rujukan
Sumber: Buku</th></tr>
<tr><td rowspan="2">IEEE/
Chicago/
CSE
(citation - name-system)</td><td>Sitasi (Citation)

Menurut United Nations World Tourism Organisation (UNWTO)[1] pelancongan dunia telah berkembang sebanyak empat peratus pada tahun 2012 dengan mencatat jumlah ketibaan pelancong sebanyak 1035 billion dan jumlah pendapatan sebanyak USD1075 billion....Kerajaan Malaysia telah menekankan pembangunan program homestay kerana ia adalah salah satu produk pelancongan yang perlu diperkasakan di negara ini[2]. Asal usul program homestay bermula di Eropah pada tahun 1970-an ... [3].</td></tr>
<tr><td>Senarai Rujukan

1. United Nations World Tourism Organisation (UNWTO). World Tourism Barometer – Tourism Trends and Marketing. (Madrid: UNWTO, 2013), 1. Muat turun dari http://www.e-unwto.org/ doi/pdf/10.18111/wtobarometereng. 2013.11.1.1 pada 7 Oktober 2015.

2. Mapjabil, Jabil & Che Ismail, Suriani. Program Homestay di Sungai Semilang, Pulau Pinang: Pembangunan dan Perubahan Persekitaran. Dalam J. Mapjabil & Din, K. H. (Eds). Pelancongan di Malaysia: Isu-isu Penyelidikan Terpilih. (Sintok: Universiti Utara Malaysia Press, 2012). 139

3. Ibid., 140.</td></tr>
</table>

BAB 3: METODOLOGI / REKA BENTUK

Bab ini merangkumi pendahuluan bab, reka bentuk kajian/projek dan rumusan. Metodologi merujuk kepada kaedah yang paling sesuai untuk menjalankan kajian/projek dan menentukan tatacara yang efektif bagi menjawab permasalahan kajian/projek. Huraian berkaitan dengan proses kerja hendaklah dinyatakan dengan jelas dan ianya mesti selari dengan perancangan kerja yang telah dibuat pada carta Gantt. Carta Gantt perlu disertakan dalam bab membandingkan jangka masa yang dirancang dengan jangka masa sebenar yang diambil untuk menyiapkan kajian/projek berkenaan.

Subtajuk yang terdapat dalam bab ini juga bergantung sebahagian besarnya kepada jenis kajian/projek yang dilaksanakan. Sesetengah jenis kajian/projek mungkin memerlukan perbincangan terperinci berkaitan reka bentuk dan instrumen kajian/projek berbanding kajian/projek yang lain. Kaedah dan rujukan kajian/projek yang digunakan perlu dinyatakan dan diterangkan dengan terperinci. Oleh itu, kandungan penulisan bab yang disyorkan adalah seperti berikut:

3.1 Pendahuluan

Pendahuluan bab membincangkan kandungan yang ada dalam bab ini secara ringkas dan padat.

3.2 Reka Bentuk Kajian/Projek

Reka bentuk kajian menghuraikan reka bentuk kajian yang digunakan (sama ada berbentuk penerokaan, deskriptif, sebab akibat atau eksperimen) dan sama ada data yang dikumpul berbentuk kualitatif, kuantitatif atau campuran.

> ***Contoh 3.2 (Teknikal):***
>
> Kajian ini dilaksanakan menggunakan reka bentuk eksperimental...

> ***Contoh 3.2 (Sains Sosial):***
>
> Kajian ini dilaksanakan menggunakan kaedah kuantitatif...

3.2.1 *Projek Jenis Kajian*

(a) Pensampelan

Huraian mengenai teknik persampelan yang digunakan dalam kajian perlu dinyatakan dengan jelas. Persampelan membolehkan membuat inferens (rumusan) dibuat terhadap sesuatu populasi tanpa perlu melibatkan setiap individu dalam populasi tersebut. Sesuatu sampel yang baik adalah sampel yang mewakili populasi kajian. Terdapat tiga langkah dalam proses pemilihan sampel/pensampelan iaitu:

(i). tentukan populasinya;
(ii). tentukan saiz sampel; dan
(iii). pilih sampel yang diperlukan.

Antara teknik pensampelan yang lazim digunakan termasuklah pensampelan rawak mudah (*simple random sampling*), pensampelan sistematik (*systematic sampling*), pensampelan berstrata (*stratified sampling*), pensampelan berkluster (*cluster sampling*), pensampelan kuota, pensampelan bertujuan (*purposive sampling*), pensampelan mudah (*convenience sampling*) dan pensampelan bola salji (*snowball sampling*).

(b) Kaedah Pengumpulan Data

Huraian mengenai kaedah pengumpulan data yang digunakan untuk mencapai objektif projek/kajian termasuk instrumen kajian perlu dinyatakan dengan jelas. Instrumen kajian merupakan satu alat yang digunakan ketika menjalankan sesuatu kajian untuk memperoleh data bagi tujuan mencapai objektif kajian. Instrumen yang boleh digunakan seperti kaedah soal selidik, kaedah pemerhatian, kaedah temubual dan kaedah-kaedah lain yang berkaitan. Pendekatan kajian/projek yang digunakan untuk memperoleh data terbahagi kepada tiga iaitu: (i) kuantitatif (melalui borang soal selidik), (ii) kualitatif (melalui temubual dan pemerhatian) dan (iii) gabungan kedua-dua pendekatan untuk memperoleh data yang tepat.

Contoh 3.2.1b (SAINS SOSIAL):

Kajian ini dilaksanakan menggunakan kaedah kuatitatif melalui penggunaan kaedah soal selidik. Soal selidik diedarkan kepada responden secara bersemuka. Tempoh pengumpulan data akan berlanjutan selama lima bulan, bermula dari Jun sehingga Oktober 2013.

Instrumen kajian adalah berdasarkan skala yang telah dibangunkan oleh Li et. al (2005) yang telah melalui proses validasi yang teliti. Konstruk (apa yang hendak diukur) yang digunakan telah dikenal pasti dan digunakan oleh Wisner dan Tan (2000) dan Basnet et. al (2003). Antaranya termasuk pemilihan pembekal, pakatan strategik dengan pembekal yang terpilih, hubungan dengan pelanggan dan kualiti perkongsian maklumat. Soal selidik yang digunakan terdiri daripada format jenis Likert 5 skala (1 = sangat tidak bersetuju hingga 5 = sangat bersetuju) yang terbahagi kepada tiga bahagian. Bahagian pertama meninjau amalan Pengurusan Rantaian Bekalan (PRB), bahagian kedua adalah berkaitan persepsi hasil prestasi perniagaan kecil dan sederhana berbanding pesaing sementara bahagian ketiga mengumpul maklumat mengenai latar belakang perniagaan...

Adaptasi petikan dari Nik Mohd Masdek & Othman (2014)

Contoh 3.2.1b (SAINS SOSIAL):

Kajian ini dilaksanakan menggunakan kaedah kualitatif (temu duga). Graduan kolej komuniti yang telah melanjutkan pengajian di peringkat ijazah di universiti tempatan akan ditemu duga. Para responden akan dihubungi menerusi telefon dan e-mel. Mereka akan diberi penerangan tentang tujuan kajian dan hak mereka sebagai responden. Semua perbualan dan perbincangan akan dirakam secara audio dan didokumentasikan.

Adaptasi petikan dari Ahmad et. Al (2014)

(c) Kaedah Analisis Data

Huraian mengenai kaedah yang digunakan untuk menyusun, mengolah dan menganalisis data yang telah dikumpul bagi menjawab persoalan kajian perlu dinyatakan. Selain itu, analisis data juga boleh memberikan maklumat tambahan yang dapat memberi pencerahan kepada objektif kajian yang dikaji. Ianya harus dipersembahkan dalam bentuk yang boleh difahami.

Contoh 3.2.1c (SAINS SOSIAL):

Data yang dikumpul diproses dan dianalisis menggunakan statistik deskriptif dan juga analisis korelasi hasil darab momen Pearson (r), menggunakan SPSS versi terkini pada aras signifikan 5%. Kekuatan korelasi dibaca mengikut kategori yang dikemukakan oleh Dancey dan Reidy (2004).

Adaptasi petikan dari Nik Mohd Masdek & Othman (2014)

3.2.2 *Projek Jenis Nyata*

(a) Kaedah/Proses/Teknik Penghasilan Projek

Segala proses pembuatan atau proses kerja termasuk kaedah/teknik pelaksanaan dalam menyiapkan projek ini perlu dinyatakan secara ringkas dan padat. Dalam menghasilkan reka bentuk sesuatu projek, beberapa perkara perlu dipertimbangkan antaranya dari segi pemilihan bahan, konsep reka bentuk, analisis kejuruteraan, analisis pengukuran, ujian makmal dan lukisan kejuruteraan (mengikut keperluan dan kesesuaian kursus Projek dan program pengajian). Setiap reka bentuk yang dibuat juga perlu mengambil kira beberapa faktor seperti faktor pengguna (mengikut umur, jantina, pengalaman dan sebagainya), persekitaran (cuaca, suhu, lokasi dan sebagainya), ergonomik (keselesaan projek), bahan (mudah dicari dan murah harganya), peralatan (kemudahan perolehan, teknologi dan penyelenggaraan) dan keselamatan (berpandukan Akta Keselamatan dan Kesihatan Pekerjaan 1994, OSHA).

Antara perkara yang boleh dibincangkan:

(i). **proses pembuatan**: proses yang terlibat dalam pembangunan projek bermula dari reka bentuk dan huraian mengenai radas/peralatan, teknik pengukuran termasuk punca kesilapan dan cara untuk mengurangkannya, bahan yang digunakan dan cara penghasilan serta pengujian; dan/atau

(ii). **masalah teori/reka bentuk/penyelesaian masalah**: huraian mengenai kaedah atau teknik yang digunakan termasuk senarai ujian yang telah dilakukan.

Contoh 3.2.2a (TEKNIKAL):

Kajian ini akan dilaksanakan menggunakan kaedah kualitatif. Kaedah yang digunakan adalah ujian makmal yang akan dijalankan terhadap sampel-sampel terpilih. Sampel-sampel akan diuji mengikut prosedur atau spesifikasi yang ditetapkan oleh piawaian X. Hasil dapatan ujian akan direkodkan dan dianalisis.

Adaptasi petikan dari Bolton et al (2014)

(b) Bahan dan Peralatan

Huraian yang jelas mengenai penggunaan bahan dan peralatan untuk penghasilan projek. Senarai bahan dan peralatan yang digunakan perlu dinyatakan sebab pemilihan bahan/peralatan tersebut. Setiap bahan dan peralatan yang disenaraikan perlu dinyatakan fungsi, spesifikasi, ukuran dan kuantiti yang digunakan. Pelajar boleh memasukkan perkara berikut (mengikut keperluan dan kesesuaian kursus Projek dan program pengajian):

(i). lukisan kejuruteraan;

(ii). penerangan mengenai reka bentuk produk dari segi saiz produk, bahan yang digunakan, pecahan komponen/bahagian, konsep yang digunakan dan juga fungsinya;

(iii). kos pembuatan dan cadangan harga jualan (kos bahan, kos penggunaan mesin, peralatan, buruh, elektrik, reka bentuk serta kos keseluruhan projek); dan

(iv). pengiraan kos secara terperinci boleh diletakkan di dalam lampiran.

Contoh 3.2.2b (TEKNIKAL):

BAHAN

Penyediaan Sampel

Kepingan filet ayam akan diambil dari kilang pemprosesan daging ayam serta merta selepas penyejukan untuk kajian intervensi pembekuan. Di dalam makmal, semua filet ayam direndam dalam ampaian Camphylobacter sp selama 15 saat dan dibiarkan pada suhu bilik dalam kabinet aliran laminar selama 30 minit untuk menggalakkan pelekatan bakteria. Filet disimpan dalam peti sejuk beku pada suhu – 20°C. Sampel (3 filet) diambil setiap minggu selama 6 minggu dan bilangan Camphylobacter sp ditentukan dengan kaedah pencairan bersiri.

Ujikaji Pembekuan: Penyediaan bakteria Camphylobacter sp.

Strain Campylobacter diasingkan dari daging ayam dan disimpan pada -80°C atas manik seramik (TC, Heywood, UK) dan dikultur secara pemindahan aseptik satu manik ke 30 ml bubur nutrien. Seterusnya sel Camphylobacter sp. akan dikumpul dengan pengemparan pada 2.665 x g selama 10 minit. Bilangan koloni yang terbentuk per mililiter (colony forming unit per ml) akan ditentukan dengan kaedah pencairan bersiri.

Penilaian Sensori

Penilaian sensori akan dinilai oleh 8 orang panel penilai yang bertauliah. Satu senarai ciri-ciri bagi menerangkan bau, rupa, bau setelah dimasak, perisa dan rasa, dan tekstur akan diedarkan. Ahli panel diminta untuk menilai setiap sampel yang diberikan kod 3 digit.

Adaptasi petikan dari Bolton et al (2014)

(c) Kaedah Analisis Data

Huraian mengenai kaedah yang digunakan untuk menyusun, mengolah dan menganalisis data yang diperoleh daripada eksperimen, ujian makmal, ujian pengukuran dan sebagainya yang berkaitan bagi menjawab persoalan kajian perlu dinyatakan dengan jelas. Selain itu, analisis data juga boleh memberikan maklumat tambahan yang dapat memberi pencerahan kepada objektif kajian yang dikaji. Ianya harus dipersembahkan dalam bentuk yang boleh difahami.

> ***Contoh 3.2.2c (TEKNIKAL):***
>
> Semua penghitungan bakteria dari setiap sampel akan dilaporkan sebagai nilai min dan sisihan piawai. Tiga replikat berasingan akan dilaksanakan ke atas eksperimen sejukbeku, dengan semua analisis dilaksanakan secara duplikat. Untuk eksperimen penilaian deria, setiap atribut akan dianalisis menggunakan one-way analysis of variance (ANOVA, SPSS versi terkini) untuk menentukan sama ada terdapat perbezaan yang ketara di antara filet daging ayam mentah, filet daging ayam sejuk beku dan filet ayam setelah dimasak.
>
> Adaptasi dan terjemahan petikan dari Bolton et al (2014)

3.3 Kajian Rintis *(jika berkaitan)*

Kajian rintis merupakan fasa terakhir tinjauan sebelum pengumpulan data bermula adalah untuk mencari permasalahan dalam kajian, termasuk soalan yang lemah dalam soal selidik, arahan yang tidak lengkap dan instrumen yang mengelirukan. Tujuan kajian rintis dijalankan adalah untuk:

(a) menguji tempoh yang diperlukan untuk mendapatkan maklum balas;

(b) menyemak semua item dan arahan agar jelas; dan

(c) menggugurkan item yang tidak menghasilkan data yang diperlukan untuk mencapai objektif dan menjawab persoalan kajian.

3.4 Rumusan

Rumusan subtajuk yang telah dikemukakan di dalam Bab 3 yang merangkumi jenis projek/kajian, cara pelaksanaan projek/kajian serta kaedah pelaporan data. Selain itu, ia juga mengandungi penerangan dan justifikasi terhadap kaedah kajian/projek yang dipilih tanpa memperkenalkan bahan baharu bagi menunjukkan kesinambungan ke bab seterusnya.

BAB 4: DAPATAN KAJIAN DAN PERBINCANGAN

Bab ini memaparkan data dan analisis kajian. Dapatan keseluruhan dan analisis dibentangkan dalam bentuk jadual, rajah dan pernyataan bagi membolehkan penemuan penting dikemukakan. Bab ini perlu disusun mengikut hierarki persoalan kajian bagi menunjukkan bahawa semua persoalan telah terjawab. Dapatan kajian perlu dibincangkan secara kritikal bagi melambangkan keilmiahan sesuatu kajian/projek yang dijalankan mengikut kesesuaian dan keperluan kursus Projek dan program pengajian.

4.1 Pendahuluan

Pendahuluan bertujuan untuk membawa pemikiran pembaca ke arah gambaran dapatan kajian berdasarkan kepada objektif dan persoalan kajian. Bab ini menerangkan secara keseluruhan tentang kajian yang dilaksanakan.

4.2 Dapatan Kajian/Pengujian

4.2.1 *Projek Jenis Kajian*

Dapatan kajian adalah berkaitan dengan keputusan kajian yang dijalankan. Ia perlu mengandungi keputusan analisis yang perlu dilaporkan secara sistematik, diulas secara jelas dan diinterpretasi dengan baik berdasarkan objektif dan persoalan kajian termasuk kadar respon dan profil demografi responden. Dapatan kajian boleh dilaporkan dalam bentuk jadual, rajah dan interpretasi yang menjawab kepada persoalan kajian. Dapatan-dapatan ini sebaiknya disusuli dengan perbincangan ilmiah.

4.2.2 *Projek Jenis Nyata*

Huraian mengenai hasil pengumpulan dan analisis data merangkumi penilaian berkaitan projek yang dibangunkan termasuk kelebihan, kekurangan atau masalah dalam proses pembangunan projek perlu dinyatakan. Ujikaji-ujikaji yang dijalankan ke atas produk yang telah dihasilkan berserta kaedah pengujian dan peralatan yang diguna pakai juga hendaklah diperjelaskan. Seandainya produk

yang terhasil tidak memenuhi spesifikasi yang ditetapkan, perbincangan kaedah yang boleh digunakan bagi mengatasi masalah tersebut boleh dinyatakan. Antara perkara yang boleh dibincangkan:

(a) senarai alatan pengujian;
(b) kaedah pengujian dan kalibrasi;
(c) keselamatan dalam pengujian/langkah berjaga-jaga;
(d) peringkat pertama keputusan pengujian dan kalibrasi;
(e) peringkat akhir keputusan pengujian; dan
(f) membaikpulih dan penyelenggaraan

Hasil keputusan adalah bergantung kepada berapa banyak maklumat yang hendak dipersembahkan contohnya dari segi kos, masa operasi, produktiviti dan lain-lain. Keputusan lazimnya diringkaskan dalam bentuk jadual, rajah dan gambar. Data keputusan ujikaji yang terperinci boleh dilampirkan berasingan di dalam lampiran.

Contoh 4.2 (TEKNIKAL):

A set of experiments was carried out to study the effect of reaction temperature, reaction pressure and molar ratio of methanol to triglycerides in the methyl esters formation. The results revealed that the supercritical treatment of 350oC, 30 MPa and 240 sec with molar ratio of 42 in methanol is the best condition for transesterification of rapeseed oil to biodiesel fuel. In addition, the methyl esters produced are similar to those by the common catalyzed process as it shown in Figure 1.

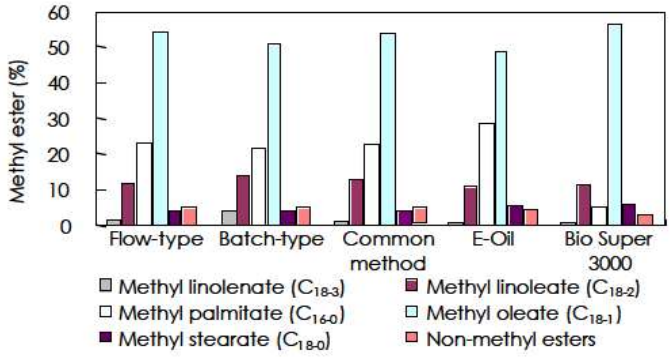


Figure 1. Methyl esters composition of biodiesel fuels prepared by supercritical methanol and those of commercial biodiesel fuels

Adaptasi petikan dari Zieba, Pacula & Drelinkiewicz (2009)

Contoh 4.2 (SAINS SOSIAL):

Jadual 1 ini menunjukkan negara asal responden yang melancong ke Melaka. Berdasarkan dapatan kajian, pelancong yang berasal dari Melaka merupakan pelancong yang paling ramai berbanding pelancong dari negara lain. Peratusan pelancong yang berasal dari Melaka adalah sebanyak 32.1 peratus. Daripada jadual ini juga, pelancong yang datang ke Melaka boleh dipecahkan kepada dua iaitu pelancong dalam negara dan pelancong luar negara. Pelancong dalam negara yang jumlahnya 93.6 peratus adalah pelancong yang datang dari negeri yang ada di dalam Malaysia. Manakala pelancong luar negara yang jumlahnya hanya 6.4 peratus adalah pelancong yang datang dari luar Malaysia.

Jadual 1. Negara/negeri asal pelancong yang datang ke Melaka

Negara asal	Kekerapan	Peratus
Dalam Negara		
Johor	9	6.4
Kedah	6	4.3
Kelantan	2	1.4
Kuala Lumpur	7	5.0
Melaka	45	32.1
Negeri Sembilan	7	5.0
Pahang	14	10.0
Perak	8	5.7
Pulau Pinang	1	0.7
Sabah	3	2.1
Sarawak	2	1.4
Selangor	11	7.9
Terengganu	12	8.6
Malaysia	4	2.9
Luar Negara		
Australia	1	0.7
Netherland	2	1.4
Singapura	6	4.3
Jumlah	140	100.0

Sumber: Data Kajian Lapangan, 2011.

Adaptasi petikan dari Zaimah, Ah, Sum & Ahmad (2015)

4.3 Perbincangan

Huraian yang jelas dan padat mengenai bagaimana dapatan kajian menyokong dapatan kajian lepas, teori atau model yang berkaitan (jika berkaitan). Perbincangan persoalan kajian secara kritis satu persatu berpandukan dapatan kajian dan kajian literatur perlu dikemukakan.

Contoh 4.3 (TEKNIKAL):

Using P. fluorescens, the spread of bacterial contamination from poultry to hands, the chopping board, knife handle, knife blade, dishcloth, fridge handle, microwave handle, microwave buttons, press handle, oven handle, plate, tinfoil and the draining board was readily demonstrated in this study. Gorman et al. (2002) have previously demonstrated cross-contamination of hands, oven handles, counter tops and draining boards with bacteria from poultry and secondary spread in the home. Other studies have also demonstrated the transfer of Campylobacter from poultry to hands, kitchen utensils and ready-to-eat foods directly or via the cutting board (Luber et al. 2006; van Asselt et al. 2008; Fravalo et al. 2009; Tang et al. 2011). Indeed, Luber (2009) concluded that cross-contamination events during food preparation presented a greater risk of illness than the risk associated with undercooking poultry meat.

Adaptasi petikan dari Mohamed-Noor, Shuaib & Abdalla (2012)

Contoh 4.3 (SAINS SOSIAL):

Berdasarkan bukti di atas, dapat dikatakan bahawa kemudahan di homestay ini telah memenuhi permintaan pelancong domestik dan hasil kajian ini selari dengan kajian oleh Kozak, (2001) dan Salleh, et al. (2011). Bagaimanapun kajian oleh Adrianna, et al. (2007) dan Jamaluddin, et al. (2012) cenderung untuk tidak menyokong dapatan kajian ini kerana dalam kajian mereka kemudahan seperti tandas tidak memberi kepuasan kepada pelancong sekaligus menimbulkan masalah kepada mereka. Ini boleh memberi kesan kepada keputusan pelancong untuk datang kembali ke destinasi yang sama. Kajian lepas juga menunjukkan bahawa apabila para pelancong melalui pengalaman yang baik di sesebuah destinasi pelancongan, mereka akan melakukan lawatan semula pada masa hadapan ke kawasan tersebut (Ross, 1993; Kozak & Rimmington, 2000; Hui, Wan & Ho, 2007). Di samping itu, mereka juga akan menceritakan pengalaman baik tersebut dan mencadangkan kepada orang lain supaya mengunjungi destinasi yang mereka telah lawati (Yoon & Uysal, 2005; Salleh, et al. 2007).

Adaptasi petikan dari Zaimah, Ah, Sum & Ahmad (2015)

4.4 Rumusan

Rumusan bab bermaksud merumuskan kata kunci terpenting daripada dapatan kajian. Ia juga perlu menunjukkan kesinambungan ke bab seterusnya.

BAB 5: KESIMPULAN DAN CADANGAN

Bab ini membincangkan dapatan kajian dengan mengaitkan teori-teori (jika berkaitan) dan kajian lampau yang dibincangkan dalam bab kajian literatur. Sebaiknya, perbincangan dapatan kajian ditulis mengikut susunan objektif/soalan/kajian/hipotesis. Penemuan kajian dirumuskan selari dengan objektif/persoalan/hipotesis kajian. Kajian juga boleh mencadangkan sesuatu inovasi atau idea baharu berdasarkan dapatan kajian. Signifikan kajian dan implikasi terhadap bidang kajian perlu dinyatakan. Cadangan kajian penambahbaikan/lanjutan untuk masa hadapan juga boleh dimasukkan dalam bab ini.

5.1 Pendahuluan

Pendahuluan bab ini bertujuan untuk memperihalkan tentang kandungan bab secara keseluruhan.

5.2 Kesimpulan

Kesimpulan kajian mengemukakan rumusan secara keseluruhan kajian/projek yang dilaksanakan, hasil dan pencapaian kajian/projek sama ada mencapai objektif atau sebaliknya, serta perancangan dan harapan untuk kajian/projek akan datang. Kelemahan dan kelebihan perlu dinyatakan dengan ringkas dan tepat. Berikut adalah antara perkara yang boleh disimpulkan, namun ianya bergantung sebahagian besarnya kepada jenis kajian/projek yang dilaksanakan yang memerlukan huraian terperinci:

(a) penilaian;
(b) analisis;
(c) tafsiran;
(d) kajian perbandingan;
(e) ulasan;
(f) pertimbangan; dan
(g) kesimpulan

Penemuan kajian/projek perlu disimpulkan selari dengan dengan objektif dan persoalan kajian/projek.

Contoh 5.2 (TEKNIKAL):

In conclusion, the study demonstrated the dissemination of bacteria from contaminated poultry to hands and food contact surfaces and showed how cook-in-the-bag methods could reduce cross-contamination. It also suggested that although freezing does not completely eliminate Campylobacter, the most significant human pathogen associated with poultry, significant reductions can be obtained. Either or these approaches alone or in combination with improved consumer knowledge of effective hygiene procedures in the kitchen will reduce campylobacteriosis in the future.

Adaptasi petikan dari Mohamed-Noor, Shuaib & Abdalla (2012)

Contoh 5.2 (SAINS SOSIAL):

Hakikatnya pada masa kini, pembangunan pelancongan penyelaman skuba ini telah memberikan satu dimensi baru kepada komuniti pulau. Pembaharuan dalam aspek sosioekonomi penduduk dapat dilihat dengan jelas dan ketara. Namun dalam memperoleh kelebihan dalam sektor pelancongan penyelaman skuba ini, aspek kelestarian mesti diterapkan bagi mengurangkan kesan kepada alam sekitarnya. Kepesatan dalam pembangunan pelancongan ini perlu diselitkan dengan elemen dan program yang boleh memberikan situasi menang-menang kepada semua pihak. Pihak-pihak berkepentingan perlu memberikan lebih peluang kepada 'anak jati' untuk memperoleh manfaat daripada apa yang wujud di kawasan mereka. Penduduk tempatan juga harus pandai mengambil peluang yang ada bagi menjauhkan pengaruh atau eksploitasi pihak luar dalam pembangunan pelancongan penyelaman skuba di kawasan mereka.

Adaptasi petikan dari Mapjabil, Yusoh, Zainol & Marzuki (2015)

5.3 Cadangan

Cadangan kajian ialah penyenaraian idea baharu atau cadangan beberapa kajian lanjutan untuk memantapkan lagi dapatan kajian dalam bidang yang dikaji. Dengan kata lain, harus dikemukakan cadangan baharu yang terhasil daripada penemuan kajian.

Contoh 5.3 (TEKNIKAL):

Finally, Bethea et al. (2016) recently described an approach and associated tool to perform online verification that a sequence of inputs received at the server could have been generated by an honest client. Like MAX, their tool combines the results of symbolic execution with state information derived from concrete execution. However, their tool cannot be used to detect manipulation attacks, because the sequence of inputs generated by an adversarial client may be perfectly valid under the right network conditions..

Adaptasi petikan dari Pagliari, Daghero & Poncino (2020)

Contoh 5.3 (SAINS SOSIAL):

Secara keseluruhan program homestay di Kampung Mesilou boleh dianggap contoh kepada program homestay yang lain di Malaysia kerana kecekapan dan keprihatinan pihak pengurusan homestay ini menjadikan pelancong mendapat kepuasan dalam aspek kemudahan, keselamatan dan perkhidmatan. Usaha mempromosikan program homestay Kampung Mesilou melalui kerjasama antara syarikat swasta dan pihak kerajaan, iaitu *Sabah Tourism Board,* wajar dilakukan. Hal ini kerana, program homestay di Kampung Mesilou mempunyai potensi untuk dikembangkan dan pihak-pihak berkepentingan perlu memaksimumkan manfaat ini. Selain itu, aspek kemudahan dan kualiti perkhidmatan boleh dipertingkatkan lagi melalui kursus-kursus berkaitan dengan industri pelancongan seperti *housekeeping* dan pengurusan yang berterusan melalui kerjasama ahli jawatankuasa dan peserta program homestay Kampung Mesilou serta Jabatan Pelancongan Budaya dan Alam Sekitar Negeri Sabah. Hal ini dianggap penting kerana tanpa kerjasama pihak-pihak ini program homestay di Kampung Mesilou tidak dapat dijayakan. Penglibatan komuniti Kampung Mesilou dalam CBT dan aktiviti industri kecil seperti projek ladang sayur dan ladang ternak susu lembu juga perlu dilakukan secara menyeluruh supaya dapat diketahui tahap penglibatan dan kesan sosio ekonomi.

Adaptasi petikan dari Hussin & Kunjuraman (2015)

5.4 Limitasi Projek

Limitasi projek/kajian dan implikasi terhadap bidang kajian boleh dikemukakan.

5.5 Rumusan

Ringkasan tentang apa yang telah dibentangkan dalam bab ini.

RUJUKAN

Rujukan merupakan sumber dan bahan yang dirujuk dalam pelaksanaan projek/kajian. Setiap bahan yang dirujuk perlu disenaraikan mengikut susunan keutamaan bahan berkenaan pada halaman rujukan. Senarai rujukan harus mengikut format atau kaedah sitasi yang digunakan (rujuk Jadual 7.1: Penulisan Sitasi & Senarai Rujukan dan Bahagian II: Format Penulisan Laporan).

LAMPIRAN

Lampiran merupakan bahan tambahan yang penting dalam menghasilkan projek/kajian seperti data kajian uji kaji projek/kajian, maklumat peralatan, atur cara komputer, contoh soal selidik, peta, gambar dan sebagainya yang terlalu panjang untuk dimasukkan dalam laporan utama. Ianya perlu disenaraikan mengikut kumpulan maklumat berkaitan dan perlu dilabelkan secara berasingan seperti contoh di bawah:

Contoh Lampiran:

Lampiran A: Soal Selidik
Lampiran B: Senarai Responden
Lampiran C: Surat Kebenaran Menjalankan Penyelidikan
Lampiran D: Lukisan dan Reka Bentuk
Lampiran E: Dapatan Analisis Data
Lampiran F: Kos Projek
Lampiran G: Senarai Komponen Hasil Projek

CARTA GANTT

Perancangan aktiviti melibatkan garis masa yang dirancang secara mingguan untuk pembangunan projek/kajian berdasarkan carta alir metodologi (rujuk Rajah 4.4 dan LAMPIRAN B: CARTA GANTT PROJEK PELAJAR). Perancangan aktiviti kerja perlu disediakan dalam bentuk carta perbatuan atau Carta Gantt dengan memperincikan pengagihan tugas di antara ahli kumpulan (jika berkaitan) dan sasaran masa bagi setiap tugasan. Perancangan atau skop kerja mestilah merujuk kepada tugasan sebenar untuk membangunkan projek/kajian berkenaan. Untuk tujuan perancangan kerja, pelajar boleh mengaplikasikan konsep *Plan-Do-Check-Action* (PDCA) di dalam merancang perlaksanaan projek. Penyediaan carta Gantt hendaklah dijelaskan dalam dua proses iaitu (i) perancangan; dan (ii) pelaksanaan.

KOS PROJEK/KAJIAN

Huraian ringkas dan padat mengenai kos yang digunakan untuk melaksanakan projek/kajian.

BAHAGIAN II:
FORMAT PENULISAN LAPORAN

Berikut adalah format untuk menyediakan Kertas Cadangan dan Laporan Akhir Projek. Kesesuaian penulisan projek perlu dirujuk kepada Penyelia Projek yang berkenaan. Maklumat lanjut dalam bentuk ilustrasi seperti di LAMPIRAN H: FORMAT UMUM LAPORAN AKHIR PROJEK.

1. Kertas dan Saiz

Gunakan kertas yang berwarna putih saiz A4 (210 mm x 297 mm) yang bermutu tinggi (80 gram).

2. Jidar *(Margin)*

Pada amnya jidar adalah sama bagi setiap muka surat dan ukurannya seperti yang berikut:

(a) Bahagian atas : 2.5 cm
(b) Bahagian bawah : 2.5 cm
(c) Bahagian kiri : 3.8 cm
(d) Bahagian kanan : 2.5 cm

3. Penomboran Halaman

Setiap halaman dalam “bahagian permulaan” seperti penghargaan, senarai kandungan, senarai jadual dan sebagainya perlu dinomborkan dengan angka kecil Roman (i, ii, iii, iv dan lain-lain) kecuali pada halaman tajuk nombor Roman (i) perlu dihilangkan.

4. Penomboran Bab dan Bahagian Dalam Bab

Bab dan bahagian dalam bab perlu dinomborkan. Struktur penomboran bahagian dalam bab boleh disusun mengikut urutan tahap subtajuk dan tidak melebihi tiga lapisan (rujuk Lampiran H-11 Format Penulisan Pada Awal Bab).

5. Jadual dalam Bahagian Laporan

Semua jadual mestilah menggunakan *Arabic Numeric*. Tajuk jadual perlu diletakkan di atas jadual. Sekiranya tajuk itu hanya satu (1) baris, ia perlu '*center'.* Sekiranya tajuk jadual melebihi satu (1) baris, ia perlu '*align'* ke sebelah kiri. Jadual mesti diberi nombor berdasarkan bab. Contoh, Jadual 1.1 merupakan jadual pertama yang terdapat dalam Bab 1 (rujuk Lampiran H-12 Format Penomboran Jadual dan Rajah).

6. Rajah dalam Bahagian Laporan

Bahan ilustrasi contohnya peta, carta, lukisan, graf, gambarajah dan fotograf disebut "Rajah". Semua rajah mestilah menggunakan *Arabic numeric*. Tajuk rajah perlu diletakkan di bawah rajah. Sekiranya tajuk itu hanya SATU (1) baris, ia perlu '*center'.* Sekiranya tajuk rajah melebihi SATU (1) baris, ia perlu di *allign* ke sebelah kiri. Rajah mesti diberi nombor berdasarkan bab. Contoh, Rajah 1.2 merupakan rajah kedua yang terdapat dalam Bab 1 (rujuk Lampiran H-12 Format Penomboran Jadual Dan Rajah).

7. Penulisan

Format tulisan adalah seperti berikut:

(a) tulisan ditaip dengan menggunakan aksara (*font*) "**Times New Roman**" sahaja. Saiz aksara yang digunakan dalam teks hendaklah bersaiz 12 sahaja. Gunakan format "***Justified***" bagi semua teks.

(b) jarak di antara baris dalam teks *(line spacing*) ialah 1.5 langkau *(1.5 spacing*).

(c) gunakan huruf besar untuk menulis setiap permulaan nombor Bab dan tajuk Bab.

(d) nombor Bab dan tajuk Bab dengan menggunakan "**Bold**", dengan menggunakan aksara (*font*) bersaiz 14 dan '***center***'.

(e) guna muka surat baru bagi setiap permulaan BAB (Contoh: BAB 2).

(f) jarak di antara nombor bab dengan tajuk bab adalah 1.5 langkau *(1.5 spacing*).

(g) jarak di antara tajuk bab dengan baris pertama teks/subtajuk adalah dua langkau *(2 x 1.5 spacing)*.

(h) jarak antara subtajuk dengan baris pertama teks selepasnya ialah 1.5 langkau *(1.5 spacing*).

(i) jarak di antara perenggan adalah 1.5 langkau *(1.5 spacing).*

(j) mulakan subtajuk berserta nombornya dari jidar kiri.

(k) mulakan baris pertama (*first line*) perenggan ke dua dengan ensotan (*indent*) 0.5".

(l) gunakan jenis "*Italic*" bagi semua istilah selain daripada bahasa penulisan laporan.

(m) penulisan Kertas Cadangan dan Laporan Akhir Projek ditulis dalam Bahasa Malaysia atau Bahasa Inggeris (keseluruhannya). Jika terdapat perkataan yang tidak boleh diterjemah di dalam Bahasa Inggeris maka ia boleh ditulis dalam tulisan jenis '*Italic*'.

8. Had Laporan

Panjang Laporan Akhir Projek hendaklah di antara 50 hingga 100 muka surat sahaja. Had ini hanyalah untuk teks sahaja tidak termasuk bahagian hadapan rujukan dan lampiran.

9. Muka Hadapan

Muka hadapan laporan adalah bersaiz 12 *Times New Roman* (rujuk Lampiran H-1: Halaman Muka Hadapan).

10. Halaman Tajuk

Rujuk Lampiran H-2: Halaman Tajuk.

11. Akuan Keaslian dan Hak Milik

Halaman ini menyatakan akuan keaslian dan hak pemilikan hasil kajian/projek (rujuk Lampiran H-3: Halaman Perakuan Keaslian).

12. Penghargaan

Halaman ini hendaklah ditulis satu muka surat sahaja. Penghargaan dirakamkan kepada orang perseorangan atau organisasi yang telah memberikan sebarang bantuan dalam penyediaan projek (rujuk Lampiran H-4: Halaman Penghargaan).

13. Abstrak

Sekiranya penulisan laporan penuh ditulis dalam Bahasa Inggeris maka, abstrak perlu ditulis dalam Bahasa Inggeris dan diikuti dengan terjemahannya dalam Bahasa Melayu. Sebaliknya, jika penulisan laporan penuh adalah dalam Bahasa Malaysia, abstrak perlu ditulis dalam Bahasa Malaysia dan diikuti pula dengan terjemahannya dalam Bahasa Inggeris di muka surat yang berikutnya. Abstrak mestilah ringkas, ditulis **satu langkau dalam satu perenggan (*single spacing*), tidak melebihi 250 patah perkataan dalam satu muka surat sahaja**. Abstrak tidak sama dengan sinopsis atau ringkasan projek (rujuk Lampiran H-5: Halaman Abstrak).

14. Halaman Senarai Kandungan

Halaman kandungan perlu dimulakan pada halaman baru dan mengandungi senarai perkara yang terdapat dalam projek iaitu, Bahagian, Bab dan pecahan-pecahan utama daripada bab-bab berkenaan. Tajuk-tajuk berkenaan hendaklah sama seperti yang terdapat dalam laporan projek (rujuk Lampiran H-6: Halaman Senarai Kandungan).

15. Halaman Senarai Jadual

Senarai jadual perlu mengandungi semua tajuk, subtajuk, nombor jadual dan nombor muka surat jadual yang terdapat dalam laporan projek. Urutan nombor jadual perlu dibuat mengikut bab (rujuk Lampiran H-7: Halaman Senarai Jadual).

16. Halaman Senarai Rajah

Rajah merangkumi gambar rajah, fotograf, lukisan, graf, carta dan peta. Senarai rajah, nombor muka surat dan tempat rajah diletakkan hendaklah dicatatkan dalam senarai

rajah. Urutan nombor rajah hendak dibuat mengikut bab (rujuk Lampiran H-8: Halaman Senarai Rajah).

17. Halaman Senarai Simbol dan Singkatan

Halaman ini menyenaraikan simbol dan singkatan yang terdapat dalam teks (rujuk Lampiran H-9: Halaman Senarai Simbol dan H-10: Halaman Senarai Singkatan).

18. Rujukan

Rujukan merupakan bahan yang dirujuk semasa menyediakan kertas cadangan dan laporan projek. Pelajar diingatkan supaya menyenaraikan bahan yang dirujuk dalam halaman rujukan. Kaedah yang digunakan ialah format APA (*American Psychological Association*) atau format IEEE (*Institute of Electrical and Electronics Engineers*). Berikut adalah senarai kaedah penulisan rujukan dalam teks:

18.1 Format APA

Rujukan disusun mengikut abjad	
(a)	**Buku**
	Nama penulis iaitu nama keluarga dan singkatan yang digunakan. (Tahun terbitan), Judul Buku, Tempat terbitan: Penerbit, m.s **Contoh:** Hibbeler, R.C. (2015). *Engineering Mechanics: Statics* (14th ed.). N Y: Prentice Hall.
(b)	**Bab dalam buku yang disunting**
	Nama Penulis, Nama Keluarga atau Singkatan (tahun terbitan). Judul Artikel. *Judul Buku* (mukasurat). Tempat Terbitan: Penerbit. **Contoh:** Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

Rujukan disusun mengikut abjad	
(c)	**Jurnal**
	Nama Penulis 1 iaitu nama keluarga dan singkatan dan Nama Penulis 2 iaitu nama keluarga dan singkatan. (Tahun terbitan). Judul Artikel: *Judul Jurnal*, *volume*, muka surat. **Contoh:** Abdul Rahim and A. H. dan Bachan, S. (2008). Causes of accidents at construction sites. *Malaysian Journal of Engineering, 20(2):* 242 - 259. Penulis jurnal melebih 2 orang, istilah "et al." diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Abdul Rahim, A. H. et al. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259.
(d)	**Prosiding Persidangan**
	Nama Penulis 1 iaitu nama keluarga dan singkatan dan Nama Penulis 2 iaitu nama keluarga dan singkatan. (Tahun terbitan). Judul Artikel: *Nama Persidangan*, *lokasi*, tarikh, muka surat. **Contoh:** Awang. M and Abdullah S.I. (2011). Facilities Management Competency Imperatives. *International Conference Management - ICM 2011, Penang, Malaysia,* 13-14 Jun 2011. m/s 480 – 496. Penulis artikel prosiding persidangan yang melebihi 2 orang, istilah "et al." diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Awang. M et al. (2011). Facilities Management Competency Imperatives. *International Conference Management - ICM 2011, Penang, Malaysia,* 13-14 Jun 2011. m/s 480 – 496.
(e)	**Majalah**
	Nama Penulis 1 iaitu nama keluarga dan singkatan dan Nama Penulis 2 iaitu nama keluarga dan singkatan. (Tahun terbitan). Judul Artikel: *Judul Majalah*, *volume*, muka surat. **Contoh:** Mathews, J. and Berrett, D. (2005). Other winning equations. *Newsweek, 145(20),* 58-59. 16th May, 2016.

Rujukan disusun mengikut abjad	
	Penulis artikel majalah yang melebihi 2 orang, istilah "et al." diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Mathews, J et al. (2005). Other winning equations. *Newsweek, 145(20),* 58-59. 16th May, 2016.
(f)	**Terbitan Kerajaan**
	Nama Penulis, (tahun). *Judul*. Tempat Terbitan, Penerbit. **Contoh:** Department of Finance and Administration. (2006). *Delivering Australian Government services: Managing multiple channels*. Canberra, Australia.
(g)	**Surat Khabar**
	Nama Surat Khabar. (Tahun). Judul artikel. *Judul suratkhabar*, muka surat. **Contoh:** The Canberra Times. (2007). Internet pioneer to oversee network redesign. *The Canberra Times*, p. 15. 28th May, 2007.
(h)	**Laman Sesawang**
	Nama Penulis iaitu nama keluarga dan singkatan. (Tahun terbitan). *Judul*. Diambil daripada alamat web. Tarikh di akses. **Contoh:** Abdul Rahim, A. H. and Bachan, S. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259. Retrieved from http://www.researchgate.net/profile/links/ 53e979a10c f.pdf. on the 2nd. October, 2012. Bagi penulis artikel laman sesawang melebihi 2 orang, istilah "et al." diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Abdul Rahim, A. H. et al. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259. Retrieved from http://www.researchgate.net/profile/links/ 53e979a10c f2fb1b9b6753e979a10cf2fb1b9b671357.pdf. on the 2nd. October, 2012.

18.2 Format IEEE:

Rujukan perlu diberi nombor dan disusun dalam susunan yang terpapar di dalam teks.	
(a)	**Buku**
	Nama penulis. *Tajuk Buku*. Lokasi: nama syarikat yang menerbit, tahun, mukasurat. **Contoh:** W.K. Chen. *Linear Networks Systems*. Belmont, CA: Wadsworth, 1993, pp. 123-35.
(b)	**Artikel dalam jurnal**
	Nama penulis. "Tajuk artikel".*Tajuk jurnal*, vol., mukasurat, tarikh. **Contoh:** G.Pevere. "Infrared Nation." *The International Journal of Infrared Design*, vol. 33, pp.56-99, Jan.1979.
(c)	**Artikel daripada prosiding persidangan (yang diterbitkan)**
	Nama penulis. "Tajuk artikel." *Prosiding persidangan*, tahun, muka surat. **Contoh:** D.B. Payne and H.G. Gunhold. "Digital sundials and broadband technology," in *Proc.IOOC-ECOC,* 1986, pp. 557-998.
(d)	**Internet**
	Nama penulis. "Tajuk." Internet: alamat URL, tarikh kemaskini [tarikh akses]. **Contoh:** M. Duncan. "Engineeering Concepts on Ice." Internet: www.iceengg.edu/staff.html, Oct. 25, 2000 [Nov. 29, 2003].
(e)	**Surat Khabar**
	Nama penulis. "Tajuk artikel." Newspaper (bulan, tahun), seksyen, muka surat. **Contoh:** *B. Bart. "Going Faster." Globe and Mail (Oct. 14, 2002), sec. A p.1.* *"Telehealth in Alberta." Toronto Star (Nov. 12, 2003), sec. G* pp. 1-3.

18.3 Kaedah Menulis Rujukan dalam Halaman Rujukan

Penulisan teks rujukan adalah disusun mengikut abjad seperti contoh berikut:

18.3.1 Format APA

Penulisan teks rujukan adalah disusun mengikut abjad seperti contoh berikut:

Rujukan disusun mengikut abjad
Abdul Rahim, A. H. et al. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259.
Department of Finance and Administration. (2006). *Delivering Australian Government services: Managing multiple channels*. Canberra, Australia: Author.
Hibbeler, R.C. (2015). *Engineering Mechanics: Statics* (14th ed.). N Y: Prentice Hall.
The Canberra Times. (2007). Internet pioneer to oversee network redesign. *The Canberra Times*, p. 15. 28th May, 2007.
Mathews, J. and Berrett, D. (2005). Other winning equations. *Newsweek, 145(20),* 58-59. 16th May, 2005.
Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

18.3.2 Format IEEE

Dalam menulis menggunakan format IEEE, rujukan perlu diberi nombor dan disusun dalam susunan yang terpapar dalam teks. Apabila merujuk kepada rujukan dalam teks, perlu meletakkan bilangan rujukan dalam kurungan berbentuk segi empat.

Rujukan disusun mengikut nombor
[1] S.K. Kenue, "Limited angle multifrequency deffiaction tomography," *IEEE Trans. Sonic Ultrason*, vol. SU-29, no. 6, pp. 213-217, July 1982.
[2] P.M. Morse and H. Feshback, *Methods of Theoretical Physic*. New York: McGraw Hill, 1953.
[3] P.S. Meszaros, S.Lee and A. Laughlin, "Information processing and information technology career interest and choice amoung high school students," *Reconfiguring the Firewall*, Wellesley: A K Peters, 2007, 77-86.
[5] R. Frinkel, R. Taylor, R. Bolles, R. Paul, "An overview of AL, programming system for automation," *in Proc. Fourth Int. Join Conf Artif.Intel*., pp. 758-765, Sept. 3-7, 2006.
[13] B. Paynter, "Robodinos: what could possibly go wrong?", *Wired*, 20 Juli 2009, [Online]. Tersedia: http://www.wired.com/entertainment/magazine/17-08/st_robotdinos [Diakses: 25 Juli 2010].
[15] S.K. Kenue, "Limited angle multifrequency deffiaction tomography," *IEEE Trans. Sonic Ultrason*, vol. SU-29, no. 6, pp. 213-217, July 1982.

19. Halaman Senarai Lampiran

Halaman ini adalah sebagai pilihan bergantung kepada kandungan laporan. Ia mengandungi bahan-bahan ilustrasi tambahan atau data asal atau petikan yang terlalu panjang untuk dimasukkan di dalam teks laporan dan dapat memberi penerangan tambahan kepada teks dengan tidak menganggu tumpuan pembaca. Lampiran perlu dilabelkan mengikut abjad, seperti Lampiran A, Lampiran B dan seterusnya.

PENUTUP

Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, Kementerian Pengajian Tinggi (KPT) dihasilkan dengan kandungannya disusun secara ringkas dan komprehensif bagi memastikan ianya mudah difahami oleh semua pihak yang terlibat. Dengan adanya buku panduan ini, pengurusan dan pelaksanaan kursus Projek dapat dilaksanakan dengan baik, seragam dan terancang. Penggunaan buku panduan ini perlu disesuaikan mengikut keperluan sesuatu program pengajian dan situasi di politeknik.

Adalah diharapkan agar buku panduan ini dapat membantu semua pihak terutamanya pensyarah dan pelajar dalam melaksanakan kursus Projek yang berupaya mencapai hasil pembelajaran yang ditetapkan dan tahap penghasilan projek yang membanggakan dan berkualiti. Susunan bab dalam buku ini diolah sedemikian rupa bagi memudahkan pihak yang terlibat memahami peranan dan tanggungjawab masing-masing sebagai pelaksana, penyelaras dan pengurus. Aktiviti penghasilan projek berupaya memupuk pembinaan budaya ilmu melalui perkongsian maklumat secara pintar antara pelajar dengan pelajar dan/atau pelajar dengan pensyarah/masyarakat/industri melalui aktiviti berkenaan. Pelaksanaan Projek turut diharapkan dapat menyemai usaha penjanaan ilmu dalam kalangan pelajar bagi menyediakan bakal graduan yang berilmu, kreatif dan inovatif. Namun, perkara yang digariskan dalam buku panduan ini memerlukan sokongan, permahaman dan penghayatan untuk memastikan pelaksanaan Projek pelajar dan hasilnya memenuhi objektifnya serta dimanfaatkan sebaik mungkin sekaligus dapat meningkatkan kecekapan pengurusan dan kualiti pengajaran dan pembelajaran (PdP) di Politeknik Malaysia.

PENYATAAN KUAT KUASA

Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia, Edisi 2021, Kementerian Pengajian Tinggi (KPT) ini berkuat kuasa kepada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi dan institusi di bawah kawalannya mulai Sesi Disember 2020.

RUJUKAN

Abdul-Manaf, M.A. (2009). Analisis *kejadian kegagalan struktur pada bangunan awam di Johor*. Universiti Teknologi Malaysia: Laporan Projek Sarjana Muda.

Agensi Kelayakan Malaysia. (2007). *Kerangka Kelayakan Malaysia*.

Angterian, M.H., Mat-Ali, M.A. & Mat-Yasin, M.H. (2014). Lubricating Oil Cooling System. *Prosiding National Innovation and Invention Competition Through Exhibition 2014*.

Bolton, D., Meredith, H., Walsh, D & McDowell, D. (2014). Poultry Food Safety Control Interventions in the Domestic Kithen. *Journal of Food Safety*. 34:34 – 41.

Er, A. C. (2013). Pembangunan pelancongan lestari di Melaka: Perspektif Pelancong. *Malaysia Journal of Society and Space*. 9(3):12 – 23.

Kerzner. H. (2009). *Project Management: A System Approach to Planning, Scheduling and Controlling 10th Edition*.

Hussin, R. & Kunjuraman, V. (2014). Pelancongan Mapan Berasaskan Komuniti (CBT) Melalui Program *Homestay* di Sabah, Malaysia. *Malaysia Journal of Society and Space*. 10(3):160 – 174.

Jabatan Pendidikan Politeknik Kementerian Pendidikan Tinggi. (2015). Blueprint POLYGreen.

Jabatan Pengajian Politeknik Kementerian Pendidikan Tinggi. (2015). Buku Panduan Perancangan dan Pengurusan Harta Intelek (IP) dan Pengkomersialan Produk Inovasi Politeknik Malaysia.

Jabatan Pendidikan Politeknik Kementerian Pendidikan Tinggi. (2015). *Garis Panduan Dana Pembudayaan Penyelidikan – RAGS*.

Jabatan Pengajian Politeknik. (2014). *Arahan-Arahan Peperiksaan dan Kaedah Penilaian*.

Jabatan Pengajian Politeknik. (2014). *Dasar dan Prinsip Perancangan dan Penyampaian Kurikulum Program Pengajian.*

Jabatan Pengajian Politeknik. (2014). *Dokumen Kurikulum Program Pengajian Politeknik Kementerian Pendidikan Tinggi*.

Jabatan Pengajian Politeknik. (2012). *Garis Panduan Projek Pelajar Politeknik KPM Edisi 2012*.

Jabatan Pengajian Politeknik. (2011). *A Guide to Academic Writing Research and Innovation Jabatan Pengajian Politeknik*.

Kothari, N. et al., (2011). Finding Protocol Manipulation Attacks. *ACM SIGCOMM Computer Communication Review - SIGCOMM '11*. 41(4): 26 -37.

Mahmood, A. et al., (2012). Galactagogue Effects of *Musa x Paradisiaca* Flower Extract on Lactating Rats. *Advances in Bioresearch.* 3(4): 46 – 53.

Mansor, N. (2012). Keberkesanan Perkhidmatan Unit Psikologi, Kaunseling dan Kerjaya dalam Membantu Kerjaya Pelajar Politeknik. *Universiti Tun Hussein Onn Malaysia: Tesis Sarjana.*

Mapjabil, J. et al., (2012). Implikasi Sosioenomi Pembangunan Pelancongan Penyelaman Scuba Terhadap Komuniti Pulau di Malaysia: Satu Tinjauan Awal. *Malaysia Journal of Society and Space*. 8(5): 26 – 38.

Mohammad, N. (2012). Mengkaji Terma dan Sifat-Sifat Mekanikal Siling Berpenebat Fiber Sabut Kelapa. *Universiti Tun Hussein Onn Malaysia: Tesis Sarjana.*

Mustafa, A. & Ghazali, M. (2009). *House Buyers' Satisfaction Of Housing Projects*.

Nawi, M. N. M. et al., (2011). *Barriers to Implementation of the Industrialised Building System (IBS) in Malaysia*.

Masdek, N. R & Othman, M. F. (2014). Supply Chain Management Practices As A Source of Competitive Advantage for Food Processing SMEs in Peninsular Malaysia. *Economic and Technology Review*. 9(a): 19 -28.

Politeknik Kota Kinabalu. (2014). *Buku Log dan Garis Panduan Projek Pelajar Politeknik Kota Kinabalu Edisi 2014*.

Saka, S. & Kusdiana, D. (2001). Biodiesel Fuel From Rapeseed Oil As Prepared in Supercritical Methanol. *Fuel*. 80(2): 225 – 231.

Ulaganathen, K. et al., (2013). Rain Attenuation Prediction Using Frequency Scaling Technique at Tropical Region for Terrestrial Link. *Progress In Electromagnetics Research Symposium Proceedings*. Taipei, March 25 – 28, 2013: 191 – 194.

Universiti Kebangsaan Malaysia. (2010). *Dasar Harta Intelek Universiti Kebangsaan Malaysia*.

LAMPIRAN

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LAMPIRAN A

BORANG PENDAFTARAN PROJEK

LAMPIRAN A

BORANG PENDAFTARAN PROJEK

AHLI KUMPULAN			
Nama	**No. Pendaftaran**	**Kelas**	**No. Tel.**
1.			
2.			
3.			
4.			

MAKLUMAT PROJEK		
A. CADANGAN TAJUK		
B. KETERANGAN PROJEK	**1**	**Pernyataan Masalah:** (i). (ii). (iii).
	2	**Objektif Projek/Kajian:** (i). (ii). (iii).
	3	**Skop Projek/Kajian:**
	4	**Lampiran Lakaran Projek dan Carta Alir Pelaksanaan Projek *(jika perlu)***
NAMA PENYELIA PROJEK		
TANDATANGAN PENYELIA PROJEK		
TARIKH		

LAMPIRAN B

CARTA GANTT
PROJEK PELAJAR

LAMPIRAN B

CARTA GANTT PROJEK PELAJAR

SESI :
JABATAN :
KURSUS/ KOD :

MINGGU/ AKTIVITI PROJEK	STATUS	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16
	R																
	L																
	R																
	L																
	R																
	L																
	R																
	L																
	R																
	L																

Nota:
R: Tarikh rancang
L: Tarikh laksana

* Minggu Aktiviti Carta Gantt perlu disesuaikan mengikut kursus Projek dan program pengajian

LAMPIRAN C

BORANG PERMOHONAN PERTUKARAN TAJUK PROJEK

LAMPIRAN C

POLITEKNIK MALAYSIA

BORANG PERMOHONAN PERTUKARAN TAJUK PROJEK

AHLI KUMPULAN				
Bil	**Nama Pelajar**	**No. Pendaftaran**	**No. Telefon**	**Kelas**
1				
2				
3				
4				

Tajuk Asal	
Tajuk Baharu	
Sebab Pertukaran Tajuk	

Tarikh: ……..
(Tandatangan Pelajar)
Nama :

Sokongan Penyelia Projek:
Saya (menyokong / tidak menyokong)* permohonan pertukaran tajuk projek pelajar diatas.

Ulasan :
.....
.....

Tarikh: ……..
(Tandatangan Penyelia)
Nama:
Cop:

Kelulusan Penyelaras Kursus Projek:

Permohonan pertukaran tajuk projek ini (diluluskan / tidak diluluskan). Ulasan :
.....
.....

Tarikh: ……..
(Tandatangan Penyelaras)
Nama:
Cop:

LAMPIRAN D

BORANG PERMOHONAN PENGGUNAAN KEMUDAHAN MAKMAL/BENGKEL

LAMPIRAN D

BORANG PERMOHONAN
PENGGUNAAN KEMUDAHAN MAKMAL/BENGKEL

Makmal / Bengkel: .....
(Selain Bengkel Projek)

Bil	Nama Pelajar	No. Pendaftaran	Tarikh	Masa
1				
2				
3				
4				

SENARAI PERALATAN/BAHAN YANG DIPERLUKAN

Bil	Item	Unit	Tandatangan Penerima	Tandatangan Pemulangan	Catatan

Sokongan Penyelia Projek

Saya dengan ini mengesahkan bahawa permohonan ini disokong dan keselamatan pelajar di makmal/bengkel adalah di bawah tanggungjawab saya.

.....
(Tandatangan Penyelia)
Nama :
Tarikh :

Ulasan Penyelaras Makmal/Bengkel

Permohonan ini diluluskan/tidak diluluskan.

.....
(Tandatangan Penyelaras Makmal/Bengkel)
Nama :
Tarikh :

LAMPIRAN E

CONTOH SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI

LAMPIRAN E

CONTOH SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI

Rujukan kami:
Tarikh:

NAMA SYARIKAT/ ORGANISASI

Tuan,

MEMOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI BAGI PROJEK PELAJAR SEMESTER ..... (KURSUS ..... , PROGRAM ……)

Adalah dimaklumkan bahawa pelajar-pelajar berkenaan adalah pelajar yang berdaftar di Jabatan ……....., Politeknik.....

Nama	No. Pendaftaran	No. KP	No. Telefon	E-Mel
1.				
2.				
3.				
4.				

2. Bagi memenuhi syarat penganugerahan Diploma....., pelajar hendaklah melaksanakan kajian dan menghasilkan projek selari dengan keperluan kursus .....

3. Sehubungan dengan itu, saya mewakili pihak politeknik ingin memohon kepakaran dan kerjasama daripada pihak tuan dalam membantu pelajar menyiapkan projek ini. Untuk sebarang pertanyaan, pihak tuan boleh menghubungi Penyelia Projek yang bertanggungjawab iaitu ..... di talian .....

4. Kerjasama dan sokongan yang diberikan oleh pihak tuan didahului dengan ucapan ribuan terima kasih.

Sekian.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

……
Ketua Jabatan
Jabatan .....
b.p Pengarah
Politeknik ……..

LAMPIRAN F

CONTOH
RUBRIK PENILAIAN

LAMPIRAN F

Rubric for Involvement Evaluation

Use the following criteria as the basis for evaluating involvement of the student in implementing the project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Attendance	Student unattendance is<10%				/ 5
Involvement	Student is involved in 90% of project activities	Student is involved < 40% of project activities.	Student is involved < 90% of project activities.	Student is involved > 90% of project activities.	/ 5
	Effort	Did little, almost no work or did all the work. Did not support team members.	Did average amount of work, but could have done more. Support team members, but could helped others more.	Did fair share of work. Supported others in their share.	/ 5
	Contribution to Discussions and Decision	Make little contribution to team discussions and decision. Contribution was of poor quality.	Make average contributions to team discussions and decision. Contribution was of average quality.	Contribution beyond average to the team discussions and decision. Contribution was of high quality.	/ 5
	Team Spirit	Removed from commitment to the team effort, or over bearing and inconsiderate of team	Respected team members, considerate and cooperative, more than half of the time.	Exceptionally helpful, respectful and considerate of other team members.	/ 5
	Dependability	Unreliable, skipped many meeting or arrived late. Generally poor prepared.	Dependable, attended most team meeting, generally punctual prepared more than half of the time.	Exceptionally dependable, always attended meeting on time. Fully prepared.	/ 5

CONTOH

LAMPIRAN F

Rubric for Log Book Evaluation

Use the following criteria as the basis for evaluating Log Book of student's project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Log Book	Project Activity Plan/ *Gantt* Chart	Did not perform project activity plan.	Perform planning for project activities using the *Gantt* Chart.	Did not perform project activity plan.	/ 5
	Weekly notes on project activities	Did not record all weekly project's activities in logbook	Record all weekly project's activities in logbook.	Record completely all weekly project's activities in logbook.	/ 5
	Continuous improvement based on feedback by project supervisor	Did not perform continuous improvement based on feedback by project supervisor.	Perform continuous improvement based on feedback by project supervisor.	Perform continuous improvement based on feedback by project supervisor, complete with a comprehensive result and report.	/ 5
	Verification by project supervisor every 2weeks	Students did not showed logbook for verification as scheduled.	Students showed logbook for verification not as scheduled.	Students showed logbook for verification as scheduled.	/ 5

CONTOH

LAMPIRAN F

Rubric for Presentation Evaluation

Use the following criteria as the basis for evaluating student's project presentation.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Presentation	Content related to implemented project	• Presentation contained little to no valuable material and not related to implemented project.	• Presentation had a good amount of material, benefited and related to implemented project	• Presentation had an exceptional amount of valuable material and was extremely beneficial and related to implemented project.	/ 5
	Use of visual aids	• Student uses superfluous visual aids or no visual aids.	• Student occasionally uses visual aids that rarely support the presentation.	• Student's visual aids explain and reinforce the presentation.	/ 5
	Communication skill	• No effort to make eye contact with audience, merely reads notes. • No enthusiasm. • Audience cannot follow presentation.	• Occasional but unsustained eye contact with audience. • Monotonous tone and/or low volume disengages audience.	• Presenter does not merely reads, but presents making constant eye contact with the audience. • Body language reflects comfort and enthusiasm interacting with audience. • Appropriate volume of voice. • Audience can follow easily.	/ 5
	Teamwork	• Removed from commitment to the team effort, or over bearing and inconsiderate of team members. • Only one of the members takes over and leads the group. There is no coordination among team member.	• Respected team members, considerate and cooperative, more than half of the time. • There is good balance in the amount of time and content covered by each member. But still have some problems of coordination.	• Exceptionally helpful, respectful and considerate of other team members. • There is good balance in the amount of time and content covered by each member. It is evident that members have rehearsed or at least are coordinated in the delivery.	/ 5

CONTOH

LAMPIRAN F

Rubric for Final Report Evaluation

Use the following criteria as the basis for evaluating Final Report of student's project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Final Report	Follow standard format (table of contents)	• Work fails to follow required report format. • Sequence of information is difficult to follow. No apparent structure or continuity. • Lack of appropriate sections or many items are in the wrong section.	• Report format is generally consistent. • Information is presented in a logical manner, which is easily followed. • Some information is in the wrong section.	• Report format is consistent throughout including heading styles, fonts, margins, white space, etc. • Information is presented in a logical, interesting way, which is easy to follow. • All information is located in the appropriate section.	/ 5
	Abstract/ introduction/ acknowledgement	• Abstract is somewhat vague and/or wordy. • It is somewhat difficult to determine the objective, approach, key results and/or conclusions. • Introduction is vague. It does not support the research and is irrelevant to the area studied. • Acknowledgements and bibliography are inaccurate and incomplete.	• Abstract contains statements of objective, approach, key results, and conclusions. • Introduction is fairly thorough. It somewhat supports the research and is somewhat relevant to the area studied. • Acknowledgements and bibliography are generally thorough. But some minor omissions are noted.	• Abstract consists of concise statements of objective, approach, key results and conclusions. • Introduction is detailed and thorough. It clearly supports the project and is clearly relevant to the area studied. • Acknowledgements and bibliography are thorough and complete.	/ 5

CONTOH

LAMPIRAN F

Aspects	Keypoints	Scaling			Score
		1-2 (Poor)	3-4 (Moderate)	5 (Excellent)	
Final Report	Include graphics/ tables/ diagrams	• Graphics, tables, charts, diagrams, pictures, and/or models are unrelated or offer little support of the work.	• Graphics, tables, charts, diagrams, pictures, and/or models are related. • There is some mislabeling of graphics or design mistakes (e.g., a picture is confusing because it doesn't have a caption).	• The work is well supported by carefully illustrated and useful tables, charts, diagrams, pictures, and/or a model-all properly labeled and captioned.	/ 5
	Clear explanation/ description of the contents	• Explanation and description are incorrect and/or irrelevant; based on minimal research. • Content is minimal OR there are several factual error.	• Explanation and description are complete, accurate, and relevant information; based on adequate research. • Includes essential knowledge about the topic. Knowledge of the text appears to be good.	• Explanation and description are complete, accurate, and relevant information; based firmly on extensive and careful research. • Covers topic indepth with details and examples. Knowledge of the text is excellent.	/ 5
	Include costing/ bill of materials	• Total cost from bill of materials has not been listed and calculated.	• Total cost from bill of materials has been listed and calculated. Item description, quantity, price per unit, and total price have been specified.	• Total cost from bill of materials has been listed and calculated. • Item description, quantity, price per unit, total price, and vendor name have all been specified.	/ 5
	Conclusion/ Impact of Project/ Project further work	• Concluding paragraph and discussion is not apparent.	• Conclusion is partially clear, effective and enhances the impact of the report. • Reflective thinking gives a good overall picture of the project.	• Conclusion is clear, effective and enhances the impact of the report. • Includes suggestions for how the project could be improved and has ideas for further study.	/ 5

CONTOH

LAMPIRAN F

Rubric for Model Evaluation

Use the following criteria as the basis for evaluating model for student's project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Content and Concept	The project offers a solution to a problem.	• The project does not offer a solution to a problem.	• The project offers a solution to a problem.	• The project offers the ultimate/ final solution to a problem and improve the efficiency.	/ 5
	The project sources are cited, reliable and replicable.	• The project sources are not cited, reliable and replicable.	• The project sources are cited at least 4 scholarly sources in the field; sources cited were authoritative and relevant to the project.	• The project sources are cited at least more than 4 scholarly sources in the field; sources cited were authoritative and relevant to the project.	/ 5
	The project aligns with the curriculum & standards.	• The project does not align with the curriculum & standards. • The project did not challenge the students to perform much research.	• The project aligns with the curriculum & standards. • The project contains some research but mostly involves technical information taught within the scope of the curriculum.	• The project fulfills the requirement of with the curriculum &meets standards. • A significant portion of the project involves technical information outside the scope of the curriculum.	/ 5
Casing and Layout	The model size is appropriate.	• The model size is inappropriate.	• The model size is appropriate and meets a few criteria of design specification.	• The model size is appropriate and meets the original design specification.	/ 5
	Attractive control panel layout and labeling.	• Unattractive control panel layout and labeling.	• Attractive control panel layout and labeling.	• Control panel has an attractive and creative design, including layout and labeling which makes it easy for handling and operating.	/ 5

CONTOH

LAMPIRAN F

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Casing and Layout	Use good quality material.	• Do not use good quality material.	• Use good quality material.	• Use good quality material. • The material is at economical cost but it still offer high reliability.	/ 5
	Neat wiring layout and finishes.	• Wiring layout and finishing are disorder and messy.	• The wiring layout and finishing looks neat and organized.	• Using proper system, specific tool or component to make wiring and layout looks neat and organized. • The arrangement will make the future task such as troubleshooting easier.	/ 5
Functional	The project works well.	• The project does not working at all.	• The project works well but not fully hundred percent as expected. • There is some problem with reliability.	• The project works well, hundred percent as expected. • Fulfill the design specification. • The project is reliability.	/ 5
	Good safety elements and procedure.	• No safety consideration in the design. • There is an evident showing the project is not safe.	• Consider safety aspect in the project design. • The project is safe.	• The project is proven to be safe and meets requirement of safety standard such as electrical safety standard.	/ 5
	Clear operating instruction manual.	• No operating instruction manual.	• Clear operating instruction manual. • The instruction is easy to understand and follow.	• Attractive, creative and clear operating instruction manual. • The operating instruction manual looks created by profesional designer.	/ 5

CONTOH

LAMPIRAN F

Rubric for Innovation and Creativity Evaluation

Use the following criteria as the basis for evaluating student's project presentation.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Innovation/ Creativity	Originality	Project contained little to no valuable originality.	Project had a good valuable originality.	Project had an exceptional amount of valuable originality and extremely beneficial.	/ 5
	Adaptation/Enhancement/ modification	Creativity of project is not apparent.	Creativity of project is partially clear, effective and enhances the impact.	Creativity of project is clear, effective and enhances the impact.	/ 5
	Efficiency	No efficiency in term of time, cost, productivity, application and replicability.	Partially efficiency in term of time, cost, productivity, application and replicability.	Efficiency is clear in term of time, cost, productivity, application and replicability.	/ 5

CONTOH

LAMPIRAN G

BUKU LOG PROJEK

POLITEKNIK .....

BUKU LOG PROJEK

PROGRAM: _____

NAMA PELAJAR:	
NO. PENDAFTARAN:	
SESI:	

NOTA:

- Dokumen ini merupakan cadangan Buku Log yang boleh diguna pakai oleh program pengajian di politeknik.
- Namun, ia bergantung kepada keperluan kurikulum program pengajian yang berkenaaan dan boleh diubahsuai mengikut kesesuaian yang diperlukan.

< NAMA JABATAN >
< KURSUS >
< SESI >

BUKU LOG PROJEK

MAKLUMAT PELAJAR			
Nama			
No. Pendaftaran			
No. Telefon		**E-Mel**	
Alamat Semasa			

AHLI KUMPULAN	
Nama	**No. Pendaftaran**
1.	1.
2.	2.
3.	3.
4.	4.

MAKLUMAT PROJEK	
Tajuk Projek/Kajian:	
Penyelia Projek:	

KANDUNGAN

Bil.	Tajuk	Muka Surat
1.	Pengenalan	x
2.	Panduan Penggunaan Buku Log	x
3.	Borang Pendaftaran Projek (Lampiran A)	x
4.	Muka Hadapan Buku Log Projek	x
5	Isi Kandungan Buku Log Projek	x
6	Laporan Aktiviti Mingguan	x
7	Carta Gantt Projek (Lampiran B) *(nyatakan aktiviti secara terperinci)*	x

PANDUAN PENGGUNAAN BUKU LOG

Arahan dalam penggunaan Buku Log:

(1). Buku Log perlu diserahkan kepada Penyelia Projek untuk dinilai dan disahkan **sekurang-kurangnya seminggu sekali;**

(2). Buku Log perlu dibawa bersama setiap kali mengadakan perjumpaan dan perbincangan bersama Penyelia Projek untuk tujuan pengesahan; dan

(3). Buku Log perlu diserahkan kepada Penyelia Projek bersama Laporan Akhir Projek untuk penilaian.

FORMAT BUKU LOG

Maklumat yang perlu dimasukkan di dalam Buku Log aktiviti pelaksanaan projek pelajar:

(1). Pelajar perlu mencatat aktiviti dan tugasan sepanjang minggu;

(2). Pelajar perlu memperincikan segala perancangan di ruangan Laporan Kemajuan Projek agar selari dengan perancangan yang telah dinyatakan di dalam carta Gantt;

(3). Pelajar perlu menyatakan pencapaian sebenar atau status projek terkini pada ruangan yang disediakan;

(4). Bahagian Cadangan Tugasan perlu diisi oleh pelajar dengan menyatakan cadangan yang berkaitan sebagai langkah penambahbaikan kepada projek; dan

(5). Penyelia Projek perlu memberi komen atau maklum balas pada setiap tugasan yang telah dijalankan oleh pelajar.

LAMPIRAN G-1

LAPORAN AKTIVITI MINGGUAN

Minggu:	**Tarikh:**	**Masa:**
Pelajar perlu kemaskini laporan setiap minggu dan sertakan lampiran berkaitan sebagai sokongan.		
Laporan Kemajuan Projek		
Cadangan Tugasan (pertemuan seterusnya)		
Maklum Balas Penyelia Projek: **Disahkan oleh:** …… (Tandatangan Penyelia Projek) Tarikh:		

REKOD KEHADIRAN SESI PEMANTAUAN
MINGGU 1 – MINGGU 4

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 1				Minggu 2				Minggu 3				Minggu 4			
Tandatangan Penyelia Projek																		

REKOD KEHADIRAN SESI PENYELIAAN
MINGGU 5 – MINGGU 8

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 5				Minggu 6				Minggu 7				Minggu 8			
Tandatangan Penyelia																		

REKOD KEHADIRAN SESI PENYELIAAN
MINGGU 9 – MINGGU 12

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 9				Minggu 10				Minggu 11				Minggu 12			
Tandatangan Penyelia																		

REKOD KEHADIRAN SESI PENYELIAAN
MINGGU 13 – MINGGU 16

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 13				Minggu 14				Minggu 15				Minggu 16			
Tandatangan Penyelia																		

LAMPIRAN G-2

FORMAT LAPORAN KEMAJUAN PROJEK PELAJAR

LAPORAN KEMAJUAN PROJEK PELAJAR

Untuk membolehkan pelaksanaan pemantauan secara berkala terhadap kemajuan pelajar dalam menjalankan **Projek** semasa latihan WBL, pelajar **MESTI** mengemukakan:

Carta Perancangan Projek kepada penyelia masing-masing di politeknik selewat-lewatnya pada minggu ke-2 semester; dan

Laporan Pemantauan Kemajuan ini perlu dimuat naik ke *Google Drive* dll sekurang-kurangnya pada setiap **DUA (2)** minggu. Penyelia pelajar dikehendaki untuk melengkapkan dan memberi maklum balas sebagai tujuan perekodan pelaksanaan pemantauan kemajuan setiap pelajar dibawah penyeliaan masing-masing (Bahagian II).

To enable better/periodic monitoring of students' progress in carrying out their final year projects, students MUST submit:

*(i). a **Project Planning Chart** to their supervisor at polytechnic by Week 2 of semester, and*

*(ii). a **Progress Report** uploaded eg: (Google Drive etc.) to supervisor at least every two (2) weeks. Student's supervisor is required to complete a report and provide feedbacks for his/her student progress (Part II).*

BAHAGIAN I: (Untuk dilengkapkan oleh PELAJAR dan dihantar kepada Penyelia Projek Akhir pelajar)

PART I: (To be completed by the STUDENT and submittted to the supervisor)

Nama Pelajar *(Name of Student):* _____ No. Pendaftaran *(Student ID):* _____

Kod Projek *(Project Code):* _____

Tajuk Projek *(Project Title):* _____

Nama Penyelia *(Name of Supervisor):* _____

Bilangan Perjumpaan (kali ke berapa dalam semester): 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 *(potong yang tidak berkaitan)* dan tempoh Laporan Kemajuan: dari _____ hingga _____.

This report is the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, or 9th (delete where appropriate) student progress report and covers the reporting period from: _____ to _____.

Page: 1/3

LAPORAN KEMAJUAN PROJEK PELAJAR

Garis Kasar Kemajuan Projek

Bab yang telah siap dan Kemajuan ***(lampirkan Rancangan Kerja Asal)***
Proportion of original work plan completed (please attach the original work plan)

Kekangan/Permasalahan ***(jika ada)*** **dan Cadangan yang bekaitan**
Constraints/Problems/Advantages/Benefits (if any) and Suggestions

Rancangan Kerja Seterusnya ***(lampirkan Rancangan Kerja yang dirancang)***
Work Plan for the next ***(attach the work plan)***

Tandatangan Pelajar **Tarikh:**
Signature of student: _____ *Date:* _____

Page: 2/3

LAPORAN KEMAJUAN PROJEK PELAJAR

BAHAGIAN II: (Untuk dilengkapkan oleh PENYELIA PROJEK pelajar)
***PART II:** (To be completed by Student's Supervisor)*

Nama Penyelia:
Supervisor's Name: _____

Maklum Balas (Komen)
Feedback (Comments):

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
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_____
_____
_____
_____
_____
_____
_____

Tarikh
Date: _____

Tandatangan (Penyelia)
Signature (Supervisor): _____

Page: 3/3

LAMPIRAN H

FORMAT UMUM
LAPORAN AKHIR PROJEK

Lampiran H-1
FORMAT HALAMAN MUKA HADAPAN

2.5 cm

5 cm dari atas

POLITEKNIK UNGKU OMAR

3 cm

(18 point, bold, uppercase)

KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

3.8 cm

2.5 cm

(18 point, bold, uppercase, single spacing)

ALI BIN ABU SHAH

(18 point, bold, 1.5 spacing)

(01DKA17F1016)

JABATAN KEJURUTERAAN AWAM

(18 point, bold)

3 cm

JUN 2020

(18 point, bold, uppercase. Bulan adalah mengikut bulan kelulusan *binding)*

5 cm dari bawah

2.5 cm

Lampiran H-2
FORMAT HALAMAN TAJUK

2.5 cm

5 cm dari atas

POLITEKNIK UNGKU OMAR

(18 point, bold, uppercase)

3 cm

KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

(18 point, uppercase, single spacing)

ALI BIN ABU SHAH
(01DKA17F1016)

(14 point, bold, 1.5 spacing)

3.8 cm

2.5 cm

Laporan ini dikemukakan kepada Jabatan Kejuruteraan Awam sebagai memenuhi sebahagian syarat penganugerahan Diploma Kejuruteraan Awam

(14 point, single Spacing)

2 cm

JABATAN KEJURUTERAAN AWAM

(18 point, bold)

2 cm

JUN 2020 ← *(18 point, bold, uppercase.* Bulan adalah mengikut bulan kelulusan *binding)*

5 cm dari bawah

2.5 cm

Lampiran H-3
FORMAT HALAMAN PERAKUAN KEASLIAN

2.5 cm

2.5 cm

AKUAN KEASLIAN DAN HAK MILIK ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

1. Saya, **ALI BIN ABU SHAH (NO KP: 991010-10-1001)** adalah pelajar **Diploma Kejuruteraan Awam, Politeknik Ungku Omar**, yang beralamat di **Jalan Raja Musa Mahadi, 31400 Ipoh, Perak**.
   (Selepas ini dirujuk sebagai 'Politeknik tersebut').

3.8 cm

2.5 cm

2. Saya mengakui bahawa 'Projek tersebut di atas' dan harta intelek yang ada di dalamnya adalah hasil karya/ reka cipta asli saya tanpa mengambil atau meniru mana-mana harta intelek daripada pihak-pihak lain.

3. Saya bersetuju melepaskan pemilikan harta intelek 'Projek tersebut' kepada 'Politeknik tersebut' bagi memenuhi keperluan untuk penanugerahan **Diploma Kejuruteraan Awam** kepada saya.

Diperbuat dan dengan sebenar-benarnya diakui)
oleh yang tersebut;)
ALI BIN ABU SHAH) …….…….
(No. Kad Pengenalan: 991010-10-1001)) ALI BIN ABU SHAH

Di hadapan saya, ARIF BIN BIDIN (730820-09-5313)) ……..……..…….
sebagai Penyelia Projek pada tarikh: ……..…….) ARIF BIN BIDIN

2.5 cm

2.5 cm

Lampiran H-4
FORMAT HALAMAN PENGHARGAAN

2.5 cm

PENGHARGAAN ← (*14 point, bold, uppercase)*

2 x 1.5 *spacing*

Penulis ingin merakamkan penghargaan ikhlas kepada penyelia projek, diatas bimbingan dan perbincangan yang diberikan sepanjang tempoh projek ini dilaksanakan.

Penghargaan ini juga diberikan kepada sesiapa sahaja yang samaada secara langsung atau tidak langsung membantu dalam penghasilan projek ini.

3.8 cm

2.5 cm

Nota:
Hanya satu muka surat sahaja

2.5 cm

2.5 cm

Lampiran H-5
FORMAT HALAMAN ABSTRAK

2.5 cm

ABSTRAK ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

Projek ini diaplikasikan daripada pemerhatian berdasarkan cara manual yang digunakan sekarang iaitu mencucuk pelbagai makanan. Objektif projek ini dihasilkan adalah untuk merekabentuk sebuah alat yang berupaya mencucuk makanan untuk kegunaan industri kecil atau desa dalam sektor makanan. Tambahan lagi, terdapat beberapa skop kajian yang telah ditetapkan dalam projek ini iaitu, menghasilkan 10 cucuk makanan pada satu masa, mereka alat yang berfungsi tanpa sumber kuasa dan mereka alat yang mampu menyaingi teknik manual sedia ada. Kesemua ini ditetapkan bagi menyelesaikan beberapa masalah yang timbul dengan penggunaan kaedah sedia ada antaranya, kesukaran untuk mencucuk makanan yang licin dan banyak menggunakan tangan dan faktor keselamatan kurang kerana kecederaan boleh diakibatkan oleh mata lidi pencucuk. Bahan bagi projek ini juga perlu mempunyai ciri - ciri khas iaitu tidak berkarat dan tidak menjejaskan makanan, berdasarkan kajian literatur yang dijalankan derlin dan aluminium adalah yang paling sesuai untuk projek ini. Manakala bagi proses pembentukkan komponen, kajian metodologi digunakan bagi merancang proses penghasilan projek dengan menggunakan carta alir sebagai panduan untuk perancangan penghasilan dan pengujian projek. Hasilnya keseluruhan projek ini berjaya dihasilkan dengan kadar purata penjimatan masa berbanding kaedah tradisional sebanyak 36.67%. Berdasarkan keputusan ini, hasil analisa dan perbincangan yang telah dijalankan, dapat dirumuskan bahawa Alat Pencucuk Makanan ini telah mencapai objektif yang telah dibincangkan. Selain itu, alat ini juga terbukti mampu menjimatkan masa berbanding cara tradisional.

(satu perenggan sahaja;12 point, Times New Roman)

3.8 cm

2.5 cm

(12 point, Times New Roman, 1 spacing)

2.5 cm

Lampiran H-6
FORMAT HALAMAN SENARAI KANDUNGAN

2.5 cm

2.5 cm

SENARAI KANDUNGAN ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

BAB	PERKARA	MUKA SURAT
	AKUAN KEASLIAN DAN HAK MILIK	ii
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	SENARAI RAJAH	viii
	SENARAI SIMBOL	x
	SENARAI SINGKATAN	xi
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	1.2 Latar Belakang Kajian	1
	1.3 Penyataan Masalah	2
	1.4 Objektif Kajian	2
	1.5 Persoalan Kajian	2
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	1.7 Kepentingan Kajian	3
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2	KAJIAN LITERATUR / LAPANGAN	
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	3.2.3 Kaedah Analisis Data	23
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4	DAPATAN KAJIAN DAN PERBINCANGAN	
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	4.3 Perbincangan	31
	4.4 Rumusan	32
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	5.3 Cadangan	35
	5.4 Limitasi Kajian	36
	5.5 Rumusan	37
	RUJUKAN	41
	LAMPIRAN	43

(12 point, bold, uppercase)

2 x 1.5 *spacing*

(12 point, bold, uppercase)

(Capitalise each word)

3.8 cm

2.5 cm

2.5 cm

2.5 cm

Lampiran H-7
FORMAT HALAMAN SENARAI JADUAL

2.5 cm

SENARAI JADUAL ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

NO. JADUAL	TAJUK	MUKA SURAT
3.1	Menunjukkan jadual matrik pemilihan rekabentuk	26
4.1	Keputusan Ujian	35

3.8 cm

2.5 cm

Nota:

- Line spacing 1.5
- Left Justify
- No.Jadual mengikut BAB

2.5 cm

Lampiran H-8
FORMAT HALAMAN SENARAI RAJAH

2.5 cm

2.5 cm

SENARAI RAJAH ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

NO. RAJAH	TAJUK	MUKA SURAT
2.1	Gambar acuan yang digunakan pada mesin KSE-ST28, buatan Singapura	9
2.2	Gambar rekabentuk alat pencucuk makanan	13
3.1	Tiang penyokong – L	27
3.2	Kerja pemasangan penekan	37

3.8 cm

2.5 cm

Nota:

- No Rajah mengikut BAB

2.5 cm

Lampiran H-9
FORMAT HALAMAN SENARAI SIMBOL

2.5 cm

2.5 cm

SENARAI SIMBOL ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

Simbol	
f	Frekuensi
m	Jisim
P	Tekanan
r	Jejari

3.8 cm

2.5 cm

Nota:

- Susun simbol mengikut susunan huruf/alphabet

2.5 cm

Lampiran H-10
FORMAT HALAMAN SENARAI SINGKATAN

2.5 cm

2.5 cm

SENARAI SINGKATAN

2 x 1.5 *spacing*

MPOB	Malaysian Palm Oil Board
FAMA	The Federal Agriculture Marketing Authority

3.8 cm

2.5 cm

Nota:

- Susun singkatan berdasarkan susunan huruf/alphabet

2.5 cm

Lampiran H-11
FORMAT PENULISAN PADA AWAL BAB

2.5 cm

2.5 cm

BAB 1

PENGENALAN

(Chapter Heading Center, bold, upper case, 14 point, 1.5 spacing)

(Numbering start at 1.1 and not 1.0)

2 x 1.5 *spacing*

1.1 PENDAHULUAN ← *(Main Heading: flushed left, bold, upper case, 12 point)*

1 x 1.5 *spacing*

(Indent first line for each paragraph -0.5")

Motor arus terus telah menjadi satu komponen yang penting untuk aplikasi dalam julat kuasa dan kelajuan yang tinggi. Kawalan motor arus terus yang mudah dan prestasi yang baik akan menjamin motor arus terus untuk digunakan secara meluas pada masa depan. Projek ini tertumpu kepada rekaaan satu sistem kawalan kelajuan motor arus terus dengan menggunakan pengawal mikro PIC 16F877A.

3.8 cm

2.5 cm

1 x 1.5 *spacing*

1.2 PEMODULATAN LEBAR DENYUT (PWM)

1 x 1.5 spacing

Teknik *Pulse Width Modulation (PWM)* digunakan di mana isyarat ini dibekal oleh mikro pengawal. Pengawal mikro berperanan sebagai pengawal gandaan,

2.5 cm

Lampiran H-12
FORMAT PENOMBORAN JADUAL DAN RAJAH

2.5 cm

2.5 cm

1.2.1 Pemodulatan Lebar Denyut (Pwm)

(Sub Heading Flushed left, bold, capitalise each word, 12 point)

1 x 1.5 *spacing*

Teknik *Pulse Width Modulation (PWM)* digunakan di mana isyarat ini dibekal oleh mikro pengawal. Pengawal mikro berperanan sebagai pengawal gandaan, *P* di dalam projek ini. Isyarat *PWM* di tunjukkan seperti rajah 1.2 di bawah.

1 x 1.5spacing

(Indent first line for each paragraph -0.5")

Rajah 1.2: Pemodulatan Lebar Denyut

(11 point, single spacing)

1 x 1.5 *spacing*

1.2.2 Kelajuan Motor

1 x 1.5 *spacing*

Keputusan menunjukkan bahawa bacaan daripada pengekod optik yang dibina adalah boleh dipercayai seperti Jadual 1.1 berikut.

3.8 cm

2.5 cm

Jadual 1.1: Keputusan Bacaan Pengkod Optik

Sumber:

All table hide left and right line

Font size- minimum 9 point)

2.5 cm

Lampiran H-13
FORMAT HALAMAN RUJUKAN (APA 5TH EDITION FORMAT)

2.5 cm

2.5 cm

RUJUKAN ← *(Left align, bold, upper case, font 14)*

1 x 1.5 *spacing*

Abdul Rahim, A. H., Muhd Zaimi, A. M., Bachan, S. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259.

Department of Finance and Administration. (2006). *Delivering Australian Government services: Managing multiple channels*. Canberra, Australia: Author.

Hibbeler, R.C. (2015). *Engineering Mechanics: Statics* (14th ed.). N Y: Prentice Hall.

Internet pioneer to oversee network redesign. (2007, May 28). *The Canberra Times*, p. 15.

Mathews, J., Berrett, D., Brillman, D. (2005, May 16). Other winning equations. *Newsweek, 145(20),* 58-59.

Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

(Hanging Indent. Use a hanging indent for the entries longer than one line. Indent 1/2'' from the set margins, after the first line of each entry.)

(12 point, Times New Roman, and 1.5 spacing)

3.8 cm

2.5 cm

2.5 cm

Lampiran H-14
FORMAT HALAMAN LAMPIRAN

2.5 cm

2.5 cm

LAMPIRAN ← *(Uppercase, center, bold, font 14, single spacing)*

1 x 1.5 *spacing*

LAMPIRAN A	Soal Selidik
LAMPIRAN B	Senarai Responden
LAMPIRAN C	Surat Kebenaran Menjalankan Penyelidikan

(Capitalise each letter, bold, font 12)

3.8 cm

2.5 cm

2.5 cm

LAMPIRAN I

PERAKUAN KEASLIAN DAN HAK MILIK

LAMPIRAN I

AKUAN KEASLIAN DAN HAK MILIK

AKUAN KEASLIAN DAN HAK MILIK

TAJUK PROJEK:
KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

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Diperbuat dan dengan sebenar-benarnya diakui)
oleh yang tersebut;)
ALI BIN ABU SHAH) …….
(No. Kad Pengenalan: 991010-10-1001)) ALI BIN ABU SHAH

Di hadapan saya, ARIF BIN BIDIN (730820-09-5313)) …….
sebagai Penyelia Projek pada tarikh: ……..…….) ARIF BIN BIDIN

LAMPIRAN J

BORANG INVENTORI PROJEK PELAJAR

LAMPIRAN J

BORANG INVENTORI PROJEK PELAJAR

<table>
<tr><th>PERKARA</th><th>MAKLUMAT</th></tr>
<tr><td>Program:</td><td></td></tr>
<tr><td>Jabatan:</td><td></td></tr>
<tr><td>Semester/ Tahun:</td><td></td></tr>
<tr><td>Tajuk Kajian/Projek:</td><td></td></tr>
<tr><td>Jenis Kajian/Projek:</td><td></td></tr>
<tr><td>Kategori Kluster Penyelidikan:</td><td>Tanda “ / ” pada yang berkenaan:
<table>
<tr><td></td><td>Sains Tulen</td><td></td><td>Sains Sosial</td></tr>
<tr><td></td><td>Sains Gunaan</td><td></td><td>Sastera & Sastera Ikhtisas</td></tr>
<tr><td></td><td>Teknologi & Kejuruteraan</td><td></td><td>Warisan Alam & Budaya</td></tr>
<tr><td></td><td>Sains Kesihatan & Klinikal</td><td></td><td>ICT</td></tr>
</table></td></tr>
<tr><td>Ahli Kumpulan:</td><td>1. Nama:
No. Pendaftaran Pelajar:
2. Nama:
No. Pendaftaran Pelajar:
3. Nama:
No. Pendaftaran Pelajar:</td></tr>
<tr><td>Penyelia:</td><td>Nama:
No. Kad Pengenalan:</td></tr>
<tr><td>Penyelia Bersama:</td><td>1. Nama:
No. Kad Pengenalan:
2. Nama:
No. Kad Pengenalan:</td></tr>
<tr><td>Multi-Disiplin:</td><td></td></tr>
<tr><td>Kolaborasi: (Industri/Komuniti)</td><td>Nyatakan maklumat lengkap industri/komuniti yang terlibat dalam pembangunan projek berserta peranan dan sumbangan pihak industri.</td></tr>
<tr><td>Objektif Kajian/Projek:</td><td></td></tr>
</table>

PERKARA	MAKLUMAT
Skop Kajian/Projek:	
Penglibatan Pelajar: (merujuk kepada skop kajian/projek)	
Abstrak Kajian/Projek:	
Infografik Kajian/Projek:	*(Tampalkan gambar projek yang dihasilkan)*
Peringkat: *(sekiranya ada menyertai pertandingan)*	Jabatan/ Politeknik/ JPPKK/ Kebangsaan/ Antarabangsa
No. Pendaftaran Harta Intelek (*jika ada*)	

Disemak oleh: _____ Tandatangan Penyelaras Kursus Projek Nama dan Cop:	Disahkan oleh: _____ Tandatangan Penyelaras Projek Pelajar Jabatan Nama dan Cop:

Nota: *Borang ini perlu diisi oleh pelajar dan dihantar kepada Penyelaras Kursus Projek/Jabatan dalam bentuk salinan keras (hardcopy) dan salinan lembut (softcopy) (Borang LAMPIRAN J dan gambar hasil projek dalam format jpeg/bitmap) bersama Laporan Akhir dan hasil projek.*

LAMPIRAN K

TEMPLAT POSTER PERTANDINGAN INOVASI PROJEK PELAJAR

LAMPIRAN K

TEMPLAT POSTER PERTANDINGAN INOVASI PROJEK PELAJAR

INNOPLEN 2019

(Innovation, Product Launching & Entrepreneurship)

TAJUK INOVASI: REMPAH LARUT

INSTITUSI: POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH, JITRA KEDAH

PESERTA	NO. KAD PENGENALAN
1. NOR HIZWANA BT MISROM	970921106246
2. NURUL MASTURA BT ABDUL GHANI	981118026224
3. NURUL ATHIRAH ANATI BT ZAKARIA	980911025724
4. NURUL BASYIRAH BT KAMARUZZAMAN	980616085548
5. NOR ARNI ASYIKIN BT MOHD ROHIMI	981108025762

Abstrak

Tapiocca Group Enterprise ini dihasilkan adalah untuk memperlihatkan secara menyeluruh dan terperinci berkenaan produk baru yang dikeluarkan oleh syarikat untuk mencapai matlamat penyediaan makanan yang lengkap dengan nutrisi dan kalori serta dalam masa yang sama dapat memelihara alam sekitar bagi memenuhi keperluan pelanggan dan masyarakat untuk menjimatkan masa apabila menggunakan produk ini.

Syarikat Tapiocca Group Enterprise mengeluarkan produk makanan yang dapat menjimatkan dan memudahkan pelanggan atau lebih dikenali sebagai 'Rempah Larut'. Idea pembuatan produk ini mula dicetuskan apabila mendapat persetujuan bersama dengan melihat adanya peluang untuk menembusi pasaran rempah yang wujud di Malaysia ini dan juga setelah mengetahui masalah pelanggan iaitu kekangan masa untuk memasak dengan bahan yang melambatkan masa mereka bagi melakukan sesuatu pekerjaan yang lain.

Penyataan Masalah

- Pelanggan yang kekangan masa untuk memasak dengan bahan yang melambatkan masa mereka untuk melakukan sesuatu pekerjaan yang lain.
- Kurang Keyakinan oleh pengguna dalam pengeluaran produk baru
- Sukar untuk mendapatkan bahan secara berkala
- Memudaratkan kesihatan pengguna sekiranya menggunakan plastik yang mempunyai bahan kimia

Objektif

1. Menjadi pengeluar perencah makanan yang menggunakan bahan semula jadi pertama di Malaysia.
2. Mensasarkan keuntungan sebanyak 80% dalam masa 3 tahun pertama
3. Mencapai unit jualan sebanyak 100 000 dalam masa setahun
4. Memberi kesedaran tentang alternatif baru terhadap pembungkusan makanan kepada pelanggan.
5. Menawarkan rempah yang boleh dimasak dengan mudah, cepat, dan selamat dengan kelebihan istimewa iaitu pembungkusan utama yang dapat melarutkan terus dalam masakan.

Kepentingan Inovasi

- Menjadi lebih mudah serta menjimatkan masa dengan penggunaan produk ini
- Dapat memudahkan pengguna membawa kemana-mana
- Dapat memelihara alam sekitar
- Menjamin atau meningkatkan kualiti produk yang bagus untuk pengguna
- Dapat memelihara kesihatan pengguna dengan produk rempah larut yang terhindar daripada bahan terlarang.

Perincian Inovasi

Tapiocca Group Enterprise mengeluarkan produk berasaskan rempah jenama 'Rempah Larut' yang menggunakan pembungkusan daripada alam semula jadi iaitu tepung ubi kayu yang lain daripada produk sedia ada sekarang. Syarikat juga mengeluarkan pembungkusan itu sendiri selain daripada rempah jenama sendiri. Produk ini mempunyai kualiti dan manfaat yang baik kepada pengguna. Menjadi pengeluar pertama mengeluarkan produk makanan yang mempunyai pembungkusan yang dapat memelihara alam sekitar.

Produk yang ringan dan kecil ini juga mudah dibawa kemana-mana sahaja jika hendak melancong kerana ia amat mudah untuk digunakan di dalam masakan dan tidak memerlukan masa yang lama untuk menyediakan makanan. Ia sangat sesuai untuk orang yang sibuk dan yang suka melancong. Oleh itu, syarikat dapat menggantikan plastik untuk pembungkusan yang tidak pernah digunakan oleh produk-produk lain. Kos pengeluaran produk dari segi bahan mentah adalah rendah. Ia dapat menyokong pemasaran hijau(alam sekitar).

Tapiocca Group Enterprise yakin bahawa produk rempah berasaskan pembungkusan daripada alam semula jadi yang dapat dilarutkan terus ke dalam makanan ini dapat memberi kemudahan yang dijamin selamat kepada pelanggan yang memerlukan produk ini.

Potensi Pasaran dan Keusahawanan

- Dapat mencapai jualan yang tinggi pada setiap tahun
- Dapat meningkatkan pelanggan yang setia pada produk syarikat
- Dapat memasuki pasaran tempatan dengan cepat
- Dapat bekerjasama dengan pasaran luar
- Pasaran berkembang dengan maju apabila pelanggan sudah mengetahui tentang kewujudan produk syarikat.
- Meningkatkan keuntungan yang ditetapkan oleh syarikat dari semasa ke semasa.

Gambar / Lukisan Inovasi

LAMPIRAN L

PANDUAN PENGENDALIAN PEMANTAUAN DAN PENILAIAN PROJEK SECARA DALAM TALIAN

LAMPIRAN L

PANDUAN PENGENDALIAN PEMANTAUAN DAN PENILAIAN PROJEK SECARA DALAM TALIAN

(A). Panduan Pemantauan Penyelia Projek Pelajar:

Bil.	Proses Penyeliaan/Aktiviti Penyeliaan
1.	Penyelia menyediakan satu folder khas melalui aplikasi *Google Drive* dan sebarang aplikasi yang berkaitan yang mengandungi fail-fail/folder berikut: (a) menyediakan folder yang berasingan untuk setiap kumpulan yang diselia; (b) menyediakan sub-folder untuk setiap individu pelajar dalam folder kumpulan yang diselia dan dinamakan dengan nama pelajar tersebut.
2.	Berdasarkan panduan pada perkara 1, setiap folder pelajar harus mengandungi: (a) Buku Log dan Laporan yang lengkap dengan Borang Rubrik yang dihantar pada penghujung semester; (b) Draf Laporan Akhir Projek yang lengkap termasuk Rujukan dan Lampiran; (c) setiap draf bab mengandungi komen/cadangan daripada penyelia. (d) sebarang bukti perbincangan mengenai penulisan laporan antara penyelia bersama pelajar melalui aplikasi *WhatsApp/e-mel* dan sebarang aplikasi yang bekaitan harus disimpan (dalam bentuk *screenshot* di dalam folder pelajar).
3.	Setiap perjumpaan/perbincangan dengan pelajar harus dilaksanakan secara dalam talian dan dirakam (sekurang-kurangnya lima rakaman perjumpaan/perbincangan dalam talian perlu dilaksanakan). Setiap rakaman video harus dinamakan mengikut tarikh perbincangan/ mesyuarat dalam talian, dan disimpan di dalam folder kumpulan projek masing-masing secara dalam talian.
4.	Untuk proses pembangunan produk, setiap pelajar dalam kumpulan perlu menunjukkan /mendemonstrasikan/menggambarkan proses kerja yang digunakan sewaktu Fasa Rekabentuk Produk, Fasa Pembangunan Produk dan Fasa Ujian/Validasi Produk yang bersesuaian dalam urutan yang betul secara bertulis dan melalui rakaman video.

(B). Panduan Sesi Penilaian Pembentangan Projek Pelajar:

Bil.	Proses Penyeliaan/Aktiviti Penyeliaan
1.	Penyelaras Kursus Projek menyediakan Jadual Pembentangan Kursus Projek yang akan dijalankan secara dalam talian dan pemakluman mengenainya kepada pensyarah dan pelajar yang terlibat termasuk Panel Penilai luar *(jika berkaitan).*
2.	Sesi pembentangan secara dalam talian boleh dijalankan dengan menggunakan platform Google Meet/MS Teams/Zoom dan sebagainya yang bekaitan.
3.	Sesi pembentangan pelajar sebaik-baiknya dirakam dari mula hingga tamat keseluruhan sesi tersebut sebagai pembuktian pelaksanaan.
4.	Video rakaman sesi pembentangan projek pelajar boleh dimuat naik ke dalam *Google Drive* dan sebarang aplikasi yang berkaitan bagi tujuan perekodan dan rujukan.

***Nota*:** Panduan yang digariskan ini boleh diubah dan disesuaikan mengikut keperluan kursus, program pengajian dan politeknik masing-masing.

AHLI JAWATANKUASA PENULISAN

Penaung:

Dr. Mohd Rashahidi @ Rusdi bin Mohamood
Pengarah Kanan (Akademik)
Jabatan Pendidikan Politeknik dan Kolej Komuniti

Penasihat:

En. Noor Azizan bin Itam
Pengarah
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Pengerusi:

Dr. Siti Noridah binti Ali
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Timbalan Pengerusi:

En. Ahmad Syaffiq bin Md Baharudin
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Penyunting:

Dr. Siti Noridah binti Ali
En. Ahmad Syaffiq bin Md Baharudin
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Pereka Kulit Buku:

Pn. Nurul Fadzillah binti Abdul Wahab
Politeknik Muadzam Shah (PMS)

Penulis:

BAHAGIAN I

Bab 1: Pengenalan
Ts. Anuar bin Abdul Wahab (PSIS)
Hj. Rohimi bin Yusof (PBD)

Bab 2: Peranan dan Tanggungjawab
En. Mohd Hanapi bin Jusoh (PSMZA)
Pn. Norhayati binti Yusof (PTSB)

Bab 3: Perancangan Projek
En. Ahmad Kamil bin Kamarudin (PJK)
Pn. Siti Nor A'khidah binti Samsudin (POLIMAS)

Bab 4: Pelaksanaan Projek
Ts. Dr. Sunitha V. Doraisamy (PUO)
En. Shahrom Nurrizam Romli (BPN)

Bab 5: Harta Intelek Projek
Pn. Zunaidah binti Razali (PPI)
Pn. Suhaila Azura binti Abd Salam (PSMZA)

Bab 6: Buku Log
En. Ilmi bin Mohd Ariffin (BK)
Pn. Salmiyah binti Che Ahmad (POLIMAS)

Bab 7: Penulisan Laporan
Dr. Siti Noridah Ali (BIPD)
En. Annas bin Alamshah (KK Ampang)

BAHAGIAN II

Format Penulisan Laporan
En. Ahmad Syaffiq bin Md Baharudin (BIPD)
Dr. Siti Noridah binti Ali (BIPD)

Terima kasih atas sumbangan

En. Hainol Akbar bin Zaman, Pn. Damaisari binti Mohd. Nani, Pn. Zarith Sofia binti Abu Zahri, En. Haspirudin bin Basiron, Pn. Azrinawati bt Samaon, Pn. Siti Zalina binti Mokhtar, Dr. Umawathy a/p Techanamurthy dan Pn. Nurul Damia' binti Abdul Ghafur

Sekalung Penghargaan

Ucapan setinggi-tinggi penghargaan kepada semua pihak yang terlibat secara langsung serta semua pihak yang telah bekerjasama dalam pemurnian Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, KPT dan Pasukan Penulis Buku Panduan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2016, Kementerian Pendidikan Tinggi dan Edisi 2012, Jabatan Pendidikan Politeknik.

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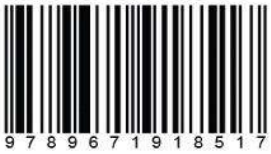

SECTION A (i) PERFORMANCE APPRAISAL (15%)
Assessed between 8 to 10 week of industrial training placement. Please rate students' performance based on attribute and scale below:

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E1 (ENGINEERING LI/INDUSTRY EVALUATION)

	Beginning (1)	Need Improvement (2)	Acceptable (3)	Accomplish (4)	Exemplary (5)	Score
Perform the assigned task accordingly based on job requirement (10%)						
Organize the task	Unable to understand and plan the task/duties.	Need full guidance to reflect the instruction given	Need further explanation and revised task to reflect the instruction given	moderate guidance to reflect the instruction given	Systematic and reflect to the instruction given	/5
Make an action plan for unforeseen issue	Missing consequences of issue, does not propose solution and unable to execute follow up actions	Describe the consequence of unrelated issue. Propose solution with full guidance of others and able to execute follow up actions only when requested	Describe the consequence of non-technical issue. Propose solution with moderate guidance by others and rarely able to execute follow up actions.	Describe the consequence of technical issue only. Propose only one solution and able to execute follow up actions.	Describe the consequence of all issues and propose more than one solutions to it and able execute follow up actions	/5
Perform task using appropriate tool/technique/ procedure	Unable to use even with full guidance	Able to use the correct tool with full guidance	Able to choose and use with moderate guidance	Able to choose and use with minimum guidance	Able and know how to use accurately	/5
Display quality of Work	Consistently fail to meet expectation, making improvement or timeliness	Often difficult to meet expectation, making improvement when being requested and meet the timeliness standard	Usually meet expectation, making moderate improvement and timeliness	Frequently exceed expectation, making improvement and meet the timeliness standard	Exceed expectation, making improvement and timeliness	/5
Complete reporting	Unable to explain activities performed.	Task/job reporting/explanation is unclear with activities performed.	Task/job reporting/explanation needs improvement and moderately consistent with activities performed	Only main task/job reporting/explanation consistent with activities performed.	All task/job reporting/explanation are correct and consistent with activities performed.	/5
					TOTAL	**/25**
Initiate responsibilities as engineering technician while dealing with societal, health, safety, legal, cultural and other issues (5%)						
Adhere organization rules and policies	Resists established work policies and safety standard	Often does not meet standards in complying with work policies and safety standard	Understand and adheres to organizational work policies and safety standard with few exceptions.	Suggests/implements improvements and exceeds work policies and safety standard	Serves as a role model with regard to work policies and safety standards	/5
Responsibilities and accountability	Always irresponsible and show no accountability	Rarely accepts responsibilities for own action or others/organization	Only accepts responsibilities for own action only	Usually accepts responsibilities for own action and others/organization	Always show responsibility and accountability for own action and others/organization	/5
					TOTAL	**/10**

SECTION A (ii) PERFORMANCE APPRAISAL (40%)
Assessed between 17 to 20 week of industrial training placement.
Please rate students' performance based on attribute and scale below:

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E1 (ENGINEERING LI/INDUSTRY EVALUATION)

	Beginning (1)	Need Improvement (2)	Acceptable (3)	Accomplish (4)	Exemplary (5)	Score
Perform the assigned task accordingly based on job requirement (20%)						
Organize the task	Unable to understand and plan the task/duties.	Need full guidance to reflect the instruction given	Need further explanation and revised task to reflect the instruction given	moderate guidance to reflect the instruction given	Systematic and reflect to the instruction given	/5
Make an action plan for unforeseen issue	Missing consequences of issue, does not propose solution and unable to execute follow up actions	Describe the consequence of unrelated issue. Propose solution with full guidance of others and able to execute follow up actions only when requested	Describe the consequence of non-technical issue. Propose solution with moderate guidance by others and rarely able to execute follow up actions.	Describe the consequence of technical issue only. Propose only one solution and able to execute follow up actions.	Describe the consequence of all issues and propose more than one solutions to it and able execute follow up actions	/5
Perform task using appropriate tool/technique/ procedure	Unable to use even with full guidance	Able to use the correct tool with full guidance	Able to choose and use with moderate guidance	Able to choose and use with minimum guidance	Able and know how to use accurately	/5
Display quality of Work	Consistently fail to meet expectation, making improvement or timeliness	Often difficult to meet expectation, making improvement when being requested and meet the timeliness standard	Usually meet expectation, making moderate improvement and timeliness	Frequently exceed expectation, making improvement and meet the timeliness standard	Exceed expectation, making improvement and timeliness	/5
Complete reporting	Unable to explain activities performed.	Task/job reporting/explanation is unclear with activities performed.	Task/job reporting/explanation needs improvement and moderately consistent with activities performed	Only main task/job reporting/explanation consistent with activities performed.	All task/job reporting/explanation are correct and consistent with activities performed.	/5
					TOTAL	/25
Initiate responsibilities as engineering technician while dealing with societal, health, safety, legal, cultural and other issues (5%)						
Adhere organization rules and policies	Resists established work policies and safety standard	Often does not meet standards in complying with work policies and safety standard	Understand and adheres to organizational work policies and safety standard with few exceptions.	Suggests/implements improvements and exceeds work policies and safety standard	Serves as a role model with regard to work policies and safety standards	/5
Responsibilities and accountability	Always irresponsible and show no accountability	Rarely accepts responsibilities for own action or others/organization	Only accepts responsibilities for own action only	Usually accepts responsibilities for own action and others/organization	Always show responsibility and accountability for own action and others/organization	/5
					TOTAL	/10
Display ability to work in a team and independently based on the given task (5%)						
Cooperation	Unable to work in group based tasks. Very self-oriented	Need guidance to collaborate and support others. Incline to argue and self-oriented	Collaborate and be supportive of the preferred tasks only. Respect and avoid any argument, help when being asked	collaborative and supportive. Respect and avoid any argument, help when being asked by other	Always being collaborative and supportive. Respect, avoid any argument, and voluntary help other to complete the task	/5
					TOTAL	/5
Display self-education in completing the task given (5%)						
Effort	Not interested in exploring and learning any new skill even after encouragement	Need guidance to learn a new skill and need to be encouraged	Find ways to explore and learn only preferred skills. Need to be encouraged	Find ways to explore and learn that related to the work requirement, self-motivated	Always proactive and find ways to explore and learn, self-motivated	/5
					TOTAL	/5

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E1 (ENGINEERING LI/INDUSTRY EVALUATION)

	Beginning (1)	Need Improvement (2)	Acceptable (3)	Accomplish (4)	Exemplary (5)	Score
Practice professional ethics and responsibilities as engineering technician (5%)						
ATTENDANCE, PUNCTUALITY, AND RELIABILITY • Completes required working hours • Notifies any absentee at the beginning of working day • Provides adequate notice for time off • Break time according to the schedule	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
APPEARANCE • Adheres to employer's dress code • Presents a neat and clean appearance • Wears clothing suitable to the job, task, and environment	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
ATTITUDE • Displays a willingness to cooperate • Accepts constructive criticism • Displays and communicates empathy to customers and co-workers • Projects self-confidence and sincerity	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
RESPECT • Treats supervisors and fellow employees with respect, courtesy, and tactful. • Does not engage in harassment of any kind	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
					TOTAL	/20

SECTION B: LOGBOOK (5%)
Assessed between 17 to 20 week of industrial training placement. Please rate students' performance based on attribute and scale below:

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E1 (ENGINEERING LI/INDUSTRY EVALUATION)

	Beginning (1)	Need Improvement (2)	Acceptable (3)	Accomplish (4)	Exemplary (5)	Score
Explain the task by using effective verbal/visual communication skill (5%)						
Arrange and Explain	Content is not arranged and does not explain the task and using inappropriate technical terminology	Content is arranged based on unrelated or preferred activities, comprehensive handwriting, explain without supporting documentation and using un adequate technical terminology	Content is arranged only based on main activities, comprehensive handwriting, explained but lack of supporting document and using adequate technical terminology	Content is arranged accordingly to weekly/monthly activities, good handwriting, explained with supporting documentation and used of appropriate technical terminology	Content is arranged accordingly to daily activities, neat handwriting, descriptively explained with supporting documentation and used of correct technical terminology	/5
Create	Unable to create any creative visual information in the logbook	Create poor creative visual information in the logbook but irrelevant to the task elaboration	Create moderate creative visual information in the logbook which relevant to the task elaboration	Create good creative visual information in the logbook which relevant to the task elaboration	Create excellent creative visual information in the logbook which is relevant to the task elaboration	/5
					TOTAL	/10

Based on the student performance in workplace, please rate their English proficiency	**RATING**				
	(5) Excellent	**(4) Good**	**(3) satisfactory**	**(2) Unsatisfactory/Limited**	**(1) Weak/ Very Limited**
(a) Communication					
(b) Writing					

Comments/Recommendations:

To be completed by Industry

Signature :

Name :

Designation :

Date :

Company/Organization Stamp:

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E2 (ENGINEERNG LI/ VISITING LECTURER EVALUATION)

KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

Student Name:			
Registration No:		**Programme/Polytechnic:**	

VISITING LECTURER EVALUATION

ENGINEERING INDUSTRIAL TRAINING course will provide students with first-hand experience in an engineering-practice environment in industry. Students will practice their knowledge and skill based on knowledge learned in polytechnic through industry supervision to acquire the craft skill and essential. Students also need to demonstrate their responsibilities and professional ethic, communication, teamwork, and life-long learning skills at the workplace.

Please rate the students' performance accordingly to the evaluation form as stated in course learning outcome below:

Course Learning Outcomes (CLO)	VISITING LECTURER			Indicator of Programme Learning Outcome (PLO)
	Logbook *(Section A)*	Student Character Validation *(Interview industry through online/face to face)*		
		Supervisor *(Section B (i))*	Co-worker *(Section B (ii))*	
Explain the task by using effective verbal/visual communication skill in performing job requirement **(A4/PLO 10)**	**10%** ***(Logbook and Interview for verification)***			**PLO 10**: Level of communication accordingly to the type of activity perform.
Practice professional ethics and responsibilities as an engineering technician **(A5/PLO 8)**		**5%**	**5%**	**PLO 8**: Understanding and level of practice in professionalism and ethics.
Mark:	**10%**	**5%**	**5%**	
Total Mark:	**20%** **(Visiting Lecturer - Institution)**			

SECTION A: LOGBOOK (5%) AND INTERVIEW (5%)

Please rate students' performance based on attribute and scale below:

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E2 (ENGINEERNG LI/ VISITING LECTURER EVALUATION)

	Beginning (1)	Need Improvement (2)	Acceptable (3)	Accomplish (4)	Exemplary (5)	Score
Logbook : Explain the task by using effective verbal/visual communication skill (5%)						
Arrange & Explain task/activity in logbook	Content is not arranged, does not explain the task and using inappropriate technical terminology	Content is arranged based on unrelated or preferred activities, comprehensive handwriting, explain without supporting documentation and using un adequate technical terminology	Content is arranged only based on main activities, comprehensive handwriting, explained but lack of supporting document and using adequate technical terminology	Content is arranged accordingly to weekly/monthly activities, good handwriting. explained with supporting documentation and used of appropriate technical terminology	Content is arranged accordingly to daily activities, neat handwriting, descriptively explained with supporting documentation and used of correct technical terminology	/5
Create creative visual information	Unable to create any creative visual information in the logbook	Create poor creative visual information in the logbook but irrelevant to the task elaboration	Create moderate creative visual information in the logbook which relevant to the task elaboration	Create good creative visual information in the logbook which relevant to the task elaboration	Create excellent creative visual information in the logbook which is relevant to the task elaboration	/5
Clarify unclear task	Does not mention an unclear task	Does not clarify unclear tasks, no discussion and follow up	Clarify unclear task without any supporting discussion evidence. follow up for improvement only when instructed	Clarify unclear task using supporting discussion evidence either with supervisor or staff. follow up for improvement when instructed	Clarify unclear tasks using supporting discussion evidence with others parties. Always follow up for improvement	/5
					TOTAL	/15
Interview : Explain the task by using effective verbal/visual communication skill (5%)						
Interview preparation	Document is not well prepared and incomprehensible	Document is not well prepared and barely comprehensible	Document is prepared with gap and comprehensible	Document is well prepared and comprehensible	Document is well prepared and neat	/5
Use technical terminology to describe the task/activities	Unable to describe work process	Describe work process using inappropriate technical terminology during the interview session	Describe work process using appropriate technical terminology occasionally during the interview session.	Describe work process using appropriate technical terminology most of the time during the interview session	Describe work process using appropriate technical terminology and varied vocabulary effectively throughout the interview session	/5
Explanation of log book (Student Activities - Daily planning, Level of interaction, Content of logbook & familiarity)	Unable to relate working skills to the assigned task	Rarely able to relate working skills to the assigned task during the interview session	Able to relate working skills to the assigned task very well now and then during the interview session	Able to relate working skills to the assigned task very well most of the time during the interview session	Able to relate working skills to the assigned task very well throughout the interview session	/5
					TOTAL	/15

Signature : Designation/Stamp :

Name of visiting lecturer : Date :

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E2 (ENGINEERNG LI/ VISITING LECTURER EVALUATION)

SECTION B (i): STUDENT CHARACTER VALIDATION (5%)
Please rate students' performance based on attribute and scale below:

Student Name :						
Registration No. :			**Programme & Polytechnic**			
	Beginning (1)	**Need Improvement (2)**	**Acceptable (3)**	**Accomplish (4)**	**Exemplary (5)**	**Score**
Practice professional ethics and responsibilities as engineering technician						
ATTENDANCE, PUNCTUALITY, AND RELIABILITY • Completes required working hours • Notifies any absentee at the beginning of working day • Provides adequate notice for time off • Break time according to the schedule	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
APPEARANCE • Adheres to employer's dress code • Presents a neat and clean appearance • Wears clothing suitable to the job, task, and environment	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
ATTITUDE • Displays a willingness to cooperate • Accepts constructive criticism • Displays and communicates empathy to customers and co-workers • Projects self-confidence and sincerity	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
RESPECT • Treats supervisors and fellow employees with respect, courtesy, and tactful. • Does not engage in any kind of harassment	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
					TOTAL	**/20**

Name of supervisor : Designation / stamp :	Date :

DUT600610- ENGINEERING INDUSTRIAL TRAINING
APPENDIX E2 (ENGINEERNG LI/ VISITING LECTURER EVALUATION)

SECTION B (ii): STUDENT CHARACTER VALIDATION (5)
Please rate students' performance based on attribute and scale below:

Student Name :						
Registration No. :			**Programme & Polytechnic**			
	Beginning (1)	**Need Improvement (2)**	**Acceptable (3)**	**Accomplish (4)**	**Exemplary (5)**	**Score**
Practice professional ethics and responsibilities as engineering technician						
ATTENDANCE, PUNCTUALITY, AND RELIABILITY • Completes required working hours • Notifies any absentee at the beginning of working day • Provides adequate notice for time off • Break time according to the schedule	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
APPEARANCE • Adheres to employer's dress code • Presents a neat and clean appearance • Wears clothing suitable to the job, task, and environment	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
ATTITUDE • Displays a willingness to cooperate • Accepts constructive criticism • Displays and communicates empathy to customers and co-workers • Projects self-confidence and sincerity	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
RESPECT • Treats supervisors and fellow employees with respect, courtesy, and tactful. • Does not engage in any kind of harassment	Unable to practice even with supervision	Practiced under supervision	Comply and practice moderately of the time during industrial training	Good and practice most of the time during industrial placement	Excellent and consistently practiced	/5
					TOTAL	/20

Name of Co-worker :	Date :
Designation / stamp :	

KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

Student Name:			
Registration No:		**Programme/Polytechnic:**	

INSTITUTION EVALUATION

ENGINEERING INDUSTRIAL TRAINING course will provide students with first-hand experience in an engineering-practice environment in industry. Students will practice their knowledge and skill based on knowledge learned in polytechnic through industry supervision to acquire the craft skill and essential. Students also need to demonstrate their responsibilities and professional ethic, communication, teamwork, and life-long learning skills at the workplace.

Please rate the students' performance accordingly to the evaluation form as stated in course learning outcome below:

Course Learning Outcomes (CLO)	INSTITUTION		Indicator of Programme Learning Outcome (PLO)
	Final Report (Section A)	Presentation (Section B)	
Write a report based on given task accordingly to technical practice **(C3/PLO 10)**	**10%** ***(Report)***		**PLO 10**: Level of communication accordingly to the type of activity perform.
Explain the task by using effective verbal/visual communication skill in performing job requirement **(A4/PLO 10)**		**5% (triangulation of final report & 5% presentation)**	
Mark:	**10%**	**10%**	
Total Mark:	**20% (Institution)**		

SECTION A: FINAL REPORT (10%)

Please rate students' performance based on attribute and scale below:

		Very Poor (1)	Poor (2)	Fair (3)	Good (4)	Excellence (5)	Score
	Write a report based on given task according to technical practice (10%)						
Executive Summary	Summary of four (4) important aspects in final report Industrial training information, Job scope description, Industrial training experience and conclusion	Unable to derive any aspect/key element of the final report into an abstract.	Able to derive one (1) aspect/key element of the final report.	Able to derive two (2) of important aspect/key element of the final report.	Able to derive three (3) of important aspect/key element of the final report.	Able to derive all important aspects/ key element of the final report.	/5
Introduction & company background	Relate introduction to elements; industrial training information, company background with organization charts and job scope description	Incomplete and does not relate to any element.	Introduction is complete and relate to 1(one) out of 3(three) element.	Introduction is complete and relate to 2(two) out of 3(three) element.	Introduction is complete and relate to all element.	Introduction is complete, well written and relate to all element.	/5
Training summary report	Summary of activities during industrial training consistent to the log book report	Incomplete summary of 20 weeks industrial training activities.	Complete a summary of industrial training activities insufficiently.	Complete a summary of 20 weeks industrial training activities adequately.	Complete a summary of 20 weeks industrial training activities sufficiently.	Complete a summary of 20 weeks industrial training activities extensively.	/5
Technical report	Information of technical task are consistent to the log book report	Incomplete sequence of activities.	Able to explain insufficient sequence of activities.	Able to explain a brief sequence of activities.	Able to explain a clear sequence of activities.	Able to explain a comprehensively clear and sequenced activities.	/5
	Illustration/picture; technique of graphical, illustration or other appropriate method and techniques that are suitable to the technical report explanation	Technical task explanation is without supporting by picture/illustration.	Picture/illustration unrelated to the technical task explanation. Text citation not always present and do not connect to the picture/illustration.	Picture/illustration moderate relate to the technical task explanation. Text citation usually present and identify the picture/illustration.	Picture/illustration mostly relate to the technical task explanation. Each picture/illustration cited in the text and identified.	Picture/illustration relate and complement to technical task explanation. Each picture/illustration cited in the text and identified.	/5
Conclusion and Recommendation	Relate conclusion and recommendations to elements; self-development, job prospect and industrial training experience	Uncompleted and does not relate to any element.	Conclusion is complete and relate to 1(one) out of 3(three) element.	Conclusion is complete and relate to 2(two) out of 3(three) element.	Conclusion is complete and relate to all element.	Conclusion is complete and well written and relate to all element.	/5
						TOTAL	/30

SECTION B: PRESENTATION (10%)
Please rate students' performance based on attribute and scale below:

	Very Poor (1)	Poor (2)	Fair (3)	Good (4)	Excellence (5)	Score
Explain the task by using effective verbal/visual communication skill (5%)						
Triangulation of final report & presentation	Presentation are not relevant to the final report information	Presentation inconsistent to the final report information	Presentation are moderate consistent to the final report information	Presentation are consistent to the final report information	Presentation are concise, clear and consistent to the final report information	/5
					TOTAL	/5
Explain the task by using effective verbal/visual communication skill (5%)						
Industrial training information (job scope, company profile, daily activities summary and main technical task)	Unable to explain information regarding industrial training.	Ability to explain only one of important information of industrial training.	Ability to explain two (2) of four (4) important information of industrial training.	Ability to explain three (3) of four (4) important information of industrial training.	Ability to explain all important information of industrial training.	/5
Creativity	Ability to prepare a very poor visual aid which is messy and not connect to the speech.	Ability to prepare a poor visual aid which is lack of creativity and not connect to the speech.	Ability to prepare an adequately neat and creative design of visual aid which is connect to the speech.	Ability to prepare mostly neat and creative design of visual aid which is connect to the speech.	Ability to prepare a neat and creative design of visual aid which complement to the presentation.	/5
Interaction	Not able to understand and respond to question.	Ability to understand and answer question but not able accurately answer the question.	Ability to understand and answer to the given question satisfactorily.	Ability to fully understand, respond and make justification to the given question.	Ability to fully understand, respond and make justification to the given question very well.	/5
					TOTAL	/15

To be completed by Institution

Signature :

Name :

Designation :

Date :

Stamp :

BORANG HYBRID BLENDED
JABATAN POLITEKNIK DAN KOLEJ KOMUNITI

ENGINEERING DESIGN							
Theory	3	Practical	1	Tutorial	0		
Total Hrs	42		14		0	GL Hours	56

1

Online L/T Hours :	28
Practical (F2F) :	28
Tutorial (F2F) :	0

56	DL Hours Fulfiled
50	Blended

Items:	Norm(hrs)	Required	HRS	Notes
Asynchronous		12	12	Online Content
Synchronous		14	14	Online Collab
eAssessment		2	2	Online Assessment
F2F Classes		28	28	F2F Collab
DL Fulfilled		56		

Pengiraan secara Automatik: Syn+Asyn+F2F

Total Online HRS =	28		28	Hrs
Total BLENDED LEARNING hours designed =	28		28	Hrs
Percentage of Dependent Learning (Theory) hours addressed (Must be 100%) =			100	%

TIME TABLE CALCULATION

As Practiced Timetable =	4.0	Hrs/W	
Blended Asyn+Syn+F2F Timetable =	4.0	Hrs/W	A
(F2F Hours) - with Physical Classroom mentioned =	2.0	Hrs/W	B
(Synchronized Hours) - Space not mentioned =	1.0	Hrs/w	C
(Asynchronized+eAssessment Hours) - Space not mentioned =	1.0	Hrs/w	D

Penyusunan waktu Jadual Waktu secara automatik: Masa Asyn+Syn+F2F

Total F2F Hours=	2.0
Total Online Hours=	2.0
Total hours/week=	4.0

BORANG HYBRID BLENDED
JABATAN POLITEKNIK DAN KOLEJ KOMUNITI

CAD							
Theory	1	Practical	2	Tutorial	0		
Total Hrs	14		28		0	GL Hours	42

1

Online L/T Hours :	16
Practical (F2F) :	26
Tutorial (F2F) :	0

42	DL Hours Fulfiled
38	Blended

Items:	Norm(hrs)	Required	HRS	Notes
Asynchronous		0	0	Online Content
Synchronous		14	14	Online Collab
eAssessment		2	2	Online Assessment
F2F Classes		26	26	F2F Collab
DL Fulfilled		42		

Pengiraan secara Automatik: Syn+Asyn+F2F

Total Online HRS =	16		16	Hrs
Total BLENDED LEARNING hours designed =	16		16	Hrs
Percentage of Dependent Learning (Theory) hours addressed (Must be 100%) =			100	%

TIME TABLE CALCULATION

Penyusunan waktu Jadual Waktu secara automatik: Masa Asyn+Syn+F2F

As Practiced Timetable =	3.0	Hrs/W	
Blended Asyn+Syn+F2F Timetable =	3.0	Hrs/W	A
(F2F Hours) - with Physical Classroom mentioned =	1.9	Hrs/W	B
(Synchronized Hours) - Space not mentioned =	1.0	Hrs/w	C
(Asynchronized+eAssessment Hours) - Space not mentioned =	0.1	Hrs/w	D

Total F2F Hours=	1.9
Total Online Hours=	1.1
Total hours/week=	3.0

BORANG HYBRID BLENDED
JABATAN POLITEKNIK DAN KOLEJ KOMUNITI

TROUBLESHOOTING & MAINTENANCE FOR MECHANICAL COMPONENTS

Theory	3	Practical	1	Tutorial	0		
Total Hrs	42		14		0	GL Hours	56

Online L/T Hours :	28
Practical (F2F) :	28
Tutorial (F2F) :	0

56	DL Hours Fulfiled
50	Blended

Items:	Norm(hrs)	Required	HRS	Notes
Asynchronous		12	12	Online Content
Synchronous		14	14	Online Collab
eAssessment		2	2	Online Assessment
F2F Classes		28	28	F2F Collab
DL Fulfilled		56		

Total Online HRS =	28		28	Hrs
Total BLENDED LEARNING hours designed =	28		28	Hrs
Percentage of Dependent Learning (Theory) hours addressed (Must be 100%) =			100	%

TIME TABLE CALCULATION

As Practiced Timetable =	4.0	Hrs/W	
Blended Asyn+Syn+F2F Timetable =	4.0	Hrs/W	A
(F2F Hours) - with Physical Classroom mentioned =	2.0	Hrs/W	B
(Synchronized Hours) - Space not mentioned =	1.0	Hrs/w	C
(Asynchronized+eAssessment Hours) - Space not mentioned =	1.0	Hrs/w	D

Total F2F Hours=	2.0
Total Online Hours=	2.0
Total hours/week=	4.0

1

Pengiraan secara Automatik: Syn+Asyn+F2F

Penyusunan waktu Jadual Waktu secara automatik: Masa Asyn+Syn+F2F

BORANG HYBRID BLENDED
JABATAN POLITEKNIK DAN KOLEJ KOMUNITI

PACKAGING DESIGN							
Theory	3	Practical	1	Tutorial	0		
Total Hrs	42		14		0	GL Hours	56

1

Online L/T Hours :	28		
Practical (F2F) :	28	56	DL Hours Fulfiled
Tutorial (F2F) :	0	50	Blended

Items:	Norm(hrs)	Required	HRS	Notes
Asynchronous		12	12	Online Content
Synchronous		14	14	Online Collab
eAssessment		2	2	Online Assessment
F2F Classes		28	28	F2F Collab
DL Fulfilled		56		

Pengiraan secara Automatik: Syn+Asyn+F2F

Total Online HRS =	28		28	Hrs
Total BLENDED LEARNING hours designed =	28		28	Hrs
Percentage of Dependent Learning (Theory) hours addressed (Must be 100%) =			100	%

TIME TABLE CALCULATION

As Practiced Timetable =	4.0	Hrs/W	
Blended Asyn+Syn+F2F Timetable =	4.0	Hrs/W	A
(F2F Hours) - with Physical Classroom mentioned =	2.0	Hrs/W	B
(Synchronized Hours) - Space not mentioned =	1.0	Hrs/w	C
(Asynchronized+eAssessment Hours) - Space not mentioned =	1.0	Hrs/w	D

Penyusunan waktu Jadual Waktu secara automatik: Masa Asyn+Syn+F2F

Total F2F Hours=	2.0
Total Online Hours=	2.0
Total hours/week=	4.0

BL Report

Institution : Politeknik Sultan Salahuddin Abdul Aziz Shah
Department : JABATAN KEJURUTERAAN MEKANIKAL
Programme : DIPLOMA KEJURUTERAAN MEKANIKAL
BL Name : Sesi 2:2022/2023

No.	Platform Name	Lecturer Name	Group Name	No of Students	Course Intro	eContent Forum/ Discussion	Online Assessment	BLDT	Group Blended Status	Blended Status
1	DJJ20053	SOMCHAI A/L ENOI ENOI	DKM2C SESI 2 2022/2023	20	100 %	0 %	50 %	Yes	No	No
		SOMCHAI A/L ENOI ENOI	DKM2D SESI 2 2022/2023	14	100 %	5 %	39 %	Yes	No	
		ZULKHAIRI B KHAIRUDIN KHAIRUDIN NURUS SADIQIN BINTI ABDUL RAZAK KHAN NURUS	DMP2A SESI 2 2022/2023	20	100 %	78 %	65 %	Yes	No	
2	DJJ20073 FLUID MECHANICS	undefined		0	100 %	0 %	0 %	No	No	No
3	DJJ30103	SHARIZA AZWIN BINTI YAHYA Yahya	DKM3A SESI 2 2022/2023	37	100 %	31 %	100 %	Yes	No	No
4	DJJ30093	NOOR HAZNIDA BINTI BAKAR BAKAR	DMP2A SESI 2 2022/2023	19	100 %	63 %	100 %	Yes	No	No
5	DJJ30122	NURAZLINDA BINTI	DKM3A	0	0 %	0 %	0 %	Yes	No	No

		YAHYA @ MUHAMMED YAHYA	SESI 2 22/23							
6	DJJ42022	ISNURAINI BINTI KASSIM @ ISMAIL Mrs.	DMP5A SESI 2 2022/2023	17	100 %	100 %	100 %	Yes	Yes	Yes
7	DJJ40153	MOHD ELIAS BIN DAUD DAUD	DKM4A SESI 2 2022/2023	35	100 %	98 %	40 %	Yes	No	No
		MOHD ELIAS BIN DAUD DAUD	DMP4A SESI 2 2022/2023	32	100 %	100 %	50 %	Yes	No	
8	DJJ50203	NOR LIZA BT KASIM NOR LIZA	DKM5A SESI 2 2022/2023	5	100 %	8 %	0 %	Yes	No	No

Appendix C3-2h

POLITEKNIK MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

KOLEJ KOMUNITI MALAYSIA

BUKU PANDUAN

PELAKSANAAN AKTIVITI PENSYARAH PELAWAT INDUSTRI (PPI)

POLITEKNIK DAN KOLEJ KOMUNITI MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

EDISI 2022

EDISI 2022

KEMENTERIAN PENGAJIAN TINGGI
BPPIPOLYCC EDISI 2022

BUKU PANDUAN

PELAKSANAAN AKTIVITI PENSYARAH PELAWAT INDUSTRI (PPI)

POLITEKNIK DAN KOLEJ KOMUNITI MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

Edisi 2022

DOKUMEN INI DILULUSKAN PENGGUNAANNYA DI PERINGKAT POLITEKNIK DAN KOLEJ KOMUNITI MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

Terbitan Edisi 2022

Hak cipta terpelihara. Mana-mana bahagian di dalam buku ini tidak dibenarkan untuk disalin, disimpan dalam apa-apa bentuk sama ada secara elektronik, mekanikal, penggambaran semula dan perakaman atau apa cara yang memungkinkan untuk diterbitkan semula tanpa izin daripada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi.

Diterbitkan oleh:
Bahagian Instruksional dan Pembelajaran Digital
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pengajian Tinggi
Aras 6, Galeria PjH
Jalan P4W, Persiaran Perdana, Presint 4
62100 Putrajaya

Perpustakaan Negara Malaysia Data-Pengkatalogan-dalam-Penerbitan

e ISBN: 978-967-19185-6-2

Buku Panduan Pelaksanaan Aktiviti Pensyarah Pelawat Industri (PPI)
Politeknik dan Kolej Komuniti Malaysia
Edisi 2022

Pengenalan : 2013
Semakan Pertama : 2016
Semakan Kedua : 2022

PRAKATA

Bahagian Instruksional dan Pembelajaran Digital (BIPD), Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) ingin merakamkan penghargaan terima kasih di atas sokongan dan kerjasama semua pihak dalam membangunkan Buku Panduan Pelaksanaan Aktiviti Pensyarah Pelawat Industri (PPI) Politeknik dan Kolej Komuniti Malaysia.

Buku Panduan ini adalah sebagai panduan dan rujukan bagi warga Politeknik dan Kolej Komuniti Malaysia dan semua pihak yang terlibat dalam pelaksanaan aktiviti PPI bagi memastikan program pengajian yang ditawarkan di politeknik dan kolej komuniti kekal relevan dan berkesan. Kerjasama daripada semua pihak membolehkan politeknik dan kolej komuniti mencapai matlamat dalam melahirkan graduan yang mampu bersaing di pasaran pekerjaan dan seterusnya menjadikan politeknik dan kolej komuniti sebagai institusi yang signifikan dalam pembangunan negara.

Sebarang komen atau cadangan amat dialu-alukan agar Buku Panduan Pelaksanaan Aktiviti Pensyarah Pelawat Industri (PPI) ini ditambah baik dari semasa ke semasa.

BAHAGIAN INSTRUKSIONAL DAN PEMBELAJARAN DIGITAL
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pengajian Tinggi
Aras 6, Galeria PjH
Jalan P4W, Persiaran Perdana, Presint 4
62100 Putrajaya

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SINGKATAN

ABM	Anggaran Belanja Mengurus
Ar.	Arkitek Profesional
AutoCAD	*Auto Computer-Aided Design*
CCNA	*Cisco Certified Network Associate*
CEH	*Certified Ethical Hacker*
CISCO	*Commercial & Industrial Security Corporation*
CISEC	*Collaboration, Industrial Services and Employability Centre*
CoE	*Center of Excellence*
CompTIA A+	*Computing Technology Industry Association A+*
COPPA	*Code of Practice for Programme Accreditation* (Kod Amalan Akreditasi Program)
CQI	*Continuous Quality Improvement*
Cr.	*Counselor Register*
CV	*Curriculum Vitae*
EKK	Elaun Kakitangan Kontrak
ETAC	*Engineering Technology Accreditation Council*
IBM SkillsBuild	*International Business Machines Corporation Technology and Technical Accreditation Council*
ILO	*International Labour Organization*
IPTA	Institusi Pengajian Tinggi Awam
IPTS	Institusi Pengajian Tinggi Swasta
Ir.	*Professional Engineer*
JPPKK	Jabatan Pendidikan Politeknik dan Kolej Komuniti
LAr.	Arkitek Landskap
LI	Latihan Industri
LO	*Local Order*
MBOT	*Malaysia Board of Technologists*

NGO	*Non-governmental Organization*
OS	Objek Sebagai
PdP	Pembelajaran dan Pengajaran
PPI	Pensyarah Pelawat Industri
PPPI	Penyelaras Pensyarah Pelawat Industri
PPPM (PT)	Pelan Pembangunan Pendidikan Malaysia (Pendidikan Tinggi)
SSM	Suruhanjaya Syarikat Malaysia
TP	Timbalan Pengarah
TPA	Timbalan Pengarah (Akademik)
TPP	Timbalan Pengarah (Pengurusan)
TPSA	Timbalan Pengarah (Sokongan Akademik)
Ts.	*Technologists* (Ahli Teknologi)
TTAC	*Technology and Technical Accreditation Council*
TVET	*Technical and Vocational Education and Training*
UNESCO	*United Nations Educational Scientific and Cultural Organization*
WBL	*Work Based Learning*

ISTILAH

institusi	Merangkumi semua politeknik dan kolej komuniti di bawah Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi
work ready	*Having the skills necessary for employment* / mempunyai kemahiran yang diperlukan untuk pekerjaan
graduan	Mahasiswa yg akan menerima ijazah pada hari penyampaian ijazah. **(Kamus Dewan Edisi Keempat)**
synchronous / segerak	Interaksi di antara pelajar dan Pensyarah Pelawat Industri dalam masa nyata *(real time)* berkaitan pengalaman, kepakaran, teknologi dan lain-lain berkaitan industri. *Contoh*: seminar bersemuka, *Google Meet*, *Microsoft Teams* dan *Zoom*
asynchronous / tidak segerak	Interaksi di antara pelajar dan Pensyarah Pelawat Industri bukan dalam masa nyata berkaitan pengalaman, kepakaran, teknologi dan lain-lain berkaitan industri. *Contoh* : Rakaman webinar dan rakaman video
holistik	Bersifat saling berkait antara satu sama lain sebagai suatu sistem bersepadu yang menyeluruh, bukan sekadar menyentuh aspek-aspek tertentu sahaja.
online training module	Satu siri modul latihan dalam talian yang dihadiri oleh pelajar bagi mendapatkan sijil kompetensi yang diiktiraf oleh organisasi.
objek sebagai	Perbelanjaan atau hasil yang dijeniskan di bawah Objek Am (11000)
objek lanjut	Perbelanjaan atau hasil yang dijeniskan di bawah Objek Lanjut (11101)
webinar	Persidangan video berasaskan web secara langsung yang menggunakan internet untuk menghubungkan individu hosting webinar (industri) kepada pelajar. Hos boleh menunjukkan diri mereka bercakap, bertukar ke skrin komputer mereka untuk persembahan slaid atau demonstrasi.
e-learning tools	*e-learning* adalah sebarang pengajaran dan pembelajaran (PdP) yang menggunakan rangkaian elektronik (LAN, WAN atau Internet) untuk penyampaian isi kandungan, interaksi ataupun pemudahcaraan. Internet, Intranet, satelit, tape audio/video, TV interaktif dan CD-ROM adalah sebahagian dari media elektronik yang dimaksudkan di dalam kategori ini.
programme information	Bahagian utama di dalam dokumen kurikulum yang menjelaskan secara menyeluruh mengenai sesuatu program pengajian yang terdiri daripada:- (a) latar belakang program (b) pemetaan (*Matrix*) (c) struktur program (d) hasil pembelajaran

programme structure	Struktur program terdiri daripada komponen kursus wajib (compulsory course), kursus teras umum (common core course), teras disiplin (discipline core course), kursus pengkhususan (concentration/specialisation course), kursus elektif (elective course) dan latihan industri (industrial training) dan perlu mematuhi spesifikasi kurikulum seperti yang dinyatakan dalam standard program.
common core course	Kursus teras umum (*common core*) bagi sesebuah program yang merujuk kepada standard bidang.
discipline course	Kursus teras disiplin (*discipline core*) bagi sesebuah program yang merujuk kepada standard bidang.
elective course	Kursus elektif yang perlu diikuti untuk memenuhi syarat memperoleh diploma atau ijazah sarjana muda. Kursus-kursus ini biasanya dinyatakan dengan jelas dalam struktur program pengajian yang berkuat kuasa.
compulsory course	Kursus yang wajib diambil oleh semua pelajar yang mendaftar di politeknik dan kolej komuniti. Kursus-kursus wajib ini perlulah mematuhi standard bidang program.
pre test	Soalan yang diberikan kepada peserta sebelum sesi perkongsian bersama industri.
post test	Soalan yang diberikan kepada peserta selepas sesi perkongsian bersama industri.
breakout room	*Host* membahagikan pelajar kepada kumpulan-kumpulan kecil.
public speaking	Proses komunikasi yang dilakukan di hadapan khalayak ramai/umum.

BAB 1
KONSEP

1.1 LATAR BELAKANG

Kerajaan berusaha membangunkan generasi pemimpin masa hadapan yang mampu melonjakkan Malaysia ke tahap yang lebih tinggi. Seiring dengan matlamat ini, sistem pendidikan Malaysia dibangunkan untuk memastikan generasi muda Malaysia dapat berkembang secara holistik, mempunyai nilai-nilai murni, ilmu dan kemahiran yang diperlukan untuk meraih kejayaan dalam dunia yang penuh dengan cabaran dan persaingan yang kian berubah. Justeru, Pelan Pembangunan Pendidikan Malaysia (Pendidikan Tinggi) 2015-2025 atau PPPM (PT) 2015-2025 telah dibangunkan dengan memberikan penekanan terhadap 10 lonjakan utama.

Buku Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Pendidikan Tinggi)

Lonjakan-lonjakan ini berupaya mendorong kepada kecemerlangan berterusan dalam sistem pendidikan tinggi. Lonjakan ini juga menjelaskan kaedah menangani isu berkaitan prestasi utama sistem, terutamanya kualiti dan kecekapan serta pengaruh persekitaran global yang mencorakkan landskap pendidikan tinggi.

Salah satu daripada 10 lonjakan tersebut ialah **Graduan TVET berkualiti**. Dalam mengukur pencapaian lonjakan ini, sebanyak **EMPAT (4)** strategi telah dikenal pasti dan salah satu daripada strategi tersebut ialah "Kurikulum Berlandaskan Industri". Dalam menjayakan strategi ini, institusi akan melibatkan industri dalam menambah baik program sedia ada dan menjadikannya lebih relevan. Antara aktiviti penambahbaikan ini ialah penglibatan pengamal industri dalam proses pembelajaran dan pengajaran (PdP) melalui aktiviti Pensyarah Pelawat Industri (PPI). Pelaksanaan aktiviti PPI ini membolehkan para pelajar memperoleh pengetahuan dan berkongsi pengalaman serta teknologi terkini secara terus dari pengamal industri sama ada di bilik kuliah atau di industri.

1.2 RASIONAL

Aktiviti PPI merupakan sebagai salah satu pendekatan yang diperkenalkan bagi membantu institusi mempelbagaikan kaedah PdP untuk meningkatkan kefahaman pelajar dalam bidang pengajian yang diikuti. Ianya memenuhi Kod Amalan Akreditasi Program (Agensi Kelayakan Malaysia, 2010, ms.19) iaitu standard asas perkara 2.2.1(6) yang menyatakan:

> *"WAJIB diwujudkan kepelbagaian dalam kaedah pengajaran-pembelajaran untuk mencapai matlamat kelapan-lapan domain hasil pembelajaran di samping memastikan bahawa pelajar bertanggungjawab ke atas pembelajaran mereka sendiri"*

Ia juga dinyatakan dalam *Engineering Technology Education Programme Accreditation Standard* (ETAC, 2020, ms.11) Perkara 8.3 Criterion 3:

> "*Other contributing components to the curriculum such as a variety of teaching and learning (delivery) modes, assessment and evaluation methods shall be designed, planned and incorporated within the curriculum to enable students to effectively develop the range of cognitive and practical skills, as well as positive attitudes as required in the Programme Outcomes. The teaching and learning processes shall be reviewed from time-to-time to embrace contemporary industrial advancements. The teaching and learning methods shall enable students to take full responsibility for their own learning and prepare them for lifelong learning*".

Selain itu, ianya juga memenuhi *Engineering Technology Education Programme Accreditation Standard* 2020 (ETAC, 2020, ms.15) Perkara 8.3 Criterion 3 yang menyatakan:

> "*Training in engineering or engineering technology practice shall also be integrated throughout the curriculum as it is a key. In addition, exposure to engineering technician practice may also be obtained through a combination of the following:*
>
> *(i). lectures/talks by guest lecturers from industry;*
> *(ii). teaching staff with industrial experience;*
> *(iii). courses on professional ethics and conduct;*
> *(iv). industry visits;*
> *(v). an industry-based final project;*
> *(vi). regular use of a logbook in which industrial experiences are recorded;*
> *(vii). study of industry policies, processes, practices and benchmarks;*
> *(viii). interviewing engineering and engineering technology practitioners;*
> *(ix). industry based investigatory assignments*
> *(x). direct industry input and advice to problem solving and projects assessment; and*
> *(xi). industrial case studies"*

Penglibatan pihak berkepentingan dalam penggubalan kurikulum secara langsung membantu program pengajian mencapai objektif yang dirangka. Kenyataan ini disokong dalam dokumen Technology and Technical Accreditation Manual (TTAC) (MBOT, 2019, ms.16) yang menyatakan:

> *"Evidence of the stakeholders involvement in the curriculum design, delivery and assessment is required to ensure the programme meets the stakeholders' expectations and to continuously improve the key aspects of the programme."*

Penglibatan industri melalui aktiviti PPI akan membolehkan pelajar mengaitkan ilmu yang diperolehi dari bilik kuliah dengan situasi sebenar di industri, membolehkan pelajar memperoleh pengalaman dalam prospek kerjaya dan meningkatkan kemahiran komunikasi profesional pelajar seperti yang dinyatakan oleh Burns and Chopra, 2017:

> "*Successful industry engagement activities provide students with life-changing experiences that can: (a) enhance students' networking connections with professionals who can potentially provide employment references and future job positions, (b) give students an opportunity to gain practical experience by observing and applying the methods and theories learned in classroom to real-world scenarios, (c) allow students to gain experience in their prospective career path, and (d) improve students' professional communication skills*".
>
> *(Burns and Chopra, 2017)*

Kepentingan PPI juga digarap dalam Perkara 5.11 Dasar dan Prinsip Perancangan dan Penyampaian Kurikulum Program Pengajian Edisi 2014 yang menekankan perlunya penglibatan industri yang lebih intensif dalam PdP bagi melahirkan graduan yang sedia bekerja *(work ready).* Keperluan kepada graduan yang *work ready* menjadikan kebolehpasaran graduan sebagai salah satu Petunjuk Kejayaan Utama (KSI) institusi Malaysia.

Merujuk kepada *Technical & Vocational Education and Training for the Twenty-first Century – UNESCO & ILO Recommendation* (UNESCO*,* 2001, ms. 44) Perkara 79:

> *"Skilled professionals working outside education should be invited to teach in school, universities or other educational institutions in order to link the world of work more closely to the classroom."*

Penekanan yang diberikan oleh pihak UNESCO dan ILO juga dilihat sebagai satu saranan penting dalam membantu institusi untuk pelaksanaan aktiviti PPI. Berdasarkan rasional ini, maka Buku Panduan Pelaksanaan Aktiviti PPI ini dibangunkan bagi menyelaras perlaksanaan aktiviti dan seterusnya memastikan ianya mendokong inisiatif-inisiatif yang telah digariskan.

1.3 KERANGKA KONSEP

Rajah 1.1: Kerangka Konsep Pensyarah Pelawat Industri (PPI)

Rajah 1.1 menunjukkan kerangka konsep PPI yang melibatkan **TIGA (3)** proses utama iaitu Perancangan, Pelaksanaan dan Hasil Ke Arah Graduan Holistik. Berikut adalah penerangan mengenai proses-proses tersebut:

1.3.1 Perancangan

(i). *Pelajar*
Mencakupi elemen kesediaan pelajar dari aspek kompetensi dan pengalaman. Pelaksanaan aktiviti PPI terbaik ialah dengan melihat kepada pengalaman terhad pelajar dalam sesuatu disiplin agar ianya dapat dilengkapkan dengan penglibatan industri.

(ii). *Kurikulum*
Merangkumi kandungan kurikulum yang relevan dengan perkembangan teknologi masa kini. Dalam sesetengah keadaan, pelaksanaan aktiviti PPI dilihat mampu memberikan kefahaman yang jelas kepada pelajar berdasarkan kandungan kurikulum yang telah ditetapkan.

(iii). *Prasarana*
Merangkumi segala aspek berkaitan kemudahan, fasiliti dan infrastruktur bagi pelaksanaan aktiviti PPI sama ada ianya dilaksanakan di institusi atau industri.

(iv). *Kewangan*
Merangkumi dana dan peruntukan dalam penganjuran aktiviti, bayaran kepada PPI, elaun pelajar dan kos lain yang berkaitan. Perbelanjaan aktiviti PPI juga harus diseimbangkan dengan jumlah peruntukan sedia ada yang diterima oleh institusi.

(v). *Industri*
Merangkumi kesediaan pihak industri dalam bekerjasama dan menerima pelajar bagi pelaksanaan aktiviti PPI. Kerelevenan industri juga harus dititikberatkan agar pelaksanaan aktiviti PPI mampu memberikan impak yang besar kepada kumpulan sasaran.

1.3.2 Pelaksanaan

(i). *Aktiviti*
Merangkumi aktiviti-aktiviti yang telah diaturkan dalam perancangan pelaksanaan aktiviti PPI. Perincian bagi aktiviti ini diterangkan dalam Bab 2.

(ii). *Medium*
Merangkumi saluran atau kaedah yang digunakan bagi pelaksanaan aktiviti PPI. Perincian bagi aktiviti ini diterangkan dalam Bab 3.

(iii). *Refleksi*
Refleksi merupakan maklum balas pelajar melalui Borang Refleksi Pelajar selepas mengikuti aktiviti PPI. Borang Refleksi Pelajar boleh dirujuk di **Lampiran 4**. Refleksi ini merangkumi proses untuk melihat perkembangan pembelajaran pelajar bagi mencapai objektif sesuatu aktiviti. Hasil dapatan refleksi ini juga dilihat sebagai satu peluang penambahbaikan kualiti berterusan atau *Continuous Quality Improvement* (CQI) bagi pelaksanaan aktiviti PPI pada masa akan datang. Maklum balas yang dibuat oleh pelajar perlu dianalisis dan dilaporkan dalam Laporan Aktiviti PPI di **Lampiran 3**.

1.3.3 Hasil ke Arah Graduan Holistik

Graduan holistik dan seimbang adalah mereka yang berilmu dan berakhlak merentasi dimensi intelek, rohani, emosi dan fizikal untuk membantu perkembangan peribadi serta berupaya untuk menyumbang secara aktif kepada masyarakat di peringkat kebangsaan dan antarabangsa. Ianya meliputi pengetahuan keusahawanan, sains dan teknologi serta memiliki sikap, nilai dan etika positif serta progresif melalui pendidikan, latihan dan pembelajaran sepanjang hayat. Politeknik dan Kolej Komuniti Malaysia berkeyakinan **EMPAT (4)** atribut di bawah adalah tunggak utama dalam usaha memperkasakan graduan supaya mempunyai jati diri yang kukuh dan berkemampuan mengaplikasikan pengetahuan kepada amalan.

(i). *Akademik*
Merangkumi pencapaian akademik pelajar dan seterusnya peningkatan terhadap kompetensi pelajar berdasarkan pengalaman pembelajaran yang diperolehi sepanjang aktiviti PPI.

(ii). *Eksplorasi*
Merangkumi daya imaginasi, pemikiran kritis dan kreatif serta inovatif pelajar melalui pelaksanaan aktiviti PPI.

(iii). *Personaliti*
Merangkumi sikap yang baik, bertanggungjawab, adaptasi terhadap persekitaran dan gaya kepimpinan.

(iv). *Keterkaitan*
Merangkumi aspek komunikasi secara lisan atau tidak dengan pihak atasan, rakan kerja berpasukan dan *commercial awareness* (bersesuaian dengan perkembangan semasa).

1.4 KEPENTINGAN

Penglibatan industri yang memberi impak secara langsung ke atas PdP:

1.4.1 Institusi:

(i). Memperluas skop kurikulum dengan perkongsian kepakaran bersama industri;

(ii). Meningkatkan kualiti PdP program pengajian di institusi Malaysia;

(iii). Memperluas pengetahuan dan akses kepada teknologi terkini dalam bidang pengajian;

(iv). Menjadi institusi pendidikan pilihan untuk para pelajar lepasan sekolah dan komuniti untuk melanjutkan pendidikan berteraskan TVET; dan

(v). Menjadikan pendidikan TVET lebih relevan dan signifikan dalam menyumbang kepada pembangunan negara.

1.4.2 Pelajar

(i). Menyediakan peluang untuk membina kemahiran insaniah, keusahawanan dan laluan kerjaya selepas tamat belajar;

(ii). Menggalakkan penglibatan pelajar secara aktif dalam proses PdP;

(iii). Memberi pendedahan dan idea awal untuk perancangan dan pelaksanaan projek pelajar;

(iv). Mewujudkan peluang eksplorasi ilmu dan teknologi dalam sektor industri;

(v). Memberi pendedahan kepada etika kerja profesional dan persekitaran pekerjaan sebenar di industri; dan

(vi). Meningkatkan daya saing pelajar dalam pasaran pekerjaan.

1.4.3 Industri

(i). Menjalinkan hubungan kerjasama dan sinergi antara industri dan institusi;

(ii). Menggalakkan penglibatan dalam pembangunan kurikulum TVET Malaysia bagi memenuhi keperluan industri;

(iii). Menyumbang kepada kemajuan negara melalui perkongsian kepakaran, ilmu dan amalan sebenar di industri kepada generasi baru;

(iv). Membantu mempromosikan industri; dan

(v). Membantu membina asas ekonomi masyarakat yang produktif.

1.5 RUMUSAN

Perlaksanaan aktiviti PPI ini dilihat berupaya membantu kepada pencapaian strategi bagi memastikan hasrat negara dalam PPPM (PT) 2015-2025 dapat dicapai menjelang tahun 2025. Penetapan sasaran juga diwujudkan bagi mengukur kecekapan dan keberkesanan perlaksanaaan aktiviti PPI bagi memastikan ianya mendokong inisiatif strategik lonjakan ke-4 yang telah digariskan selain menjadi salah satu Petunjuk Kejayaan Utama (KSI) IPT Malaysia.

BAB 2
PERANCANGAN

2.1 PENGENALAN

Perancangan pelaksanaan aktiviti PPI merupakan satu inisiatif institusi dalam merangka setiap aktiviti bagi memantapkan sesi perkongsian dengan industri di samping meningkatkan dan mempelbagaikan kaedah PdP kepada pelajar. Perancangan ini adalah berdasarkan keberhasilan graduan holistik bagi mengoptimumkan peruntukan dibawah TVET (PPPMPT, 2015). Selain itu, pelaksanaan aktiviti PPI dapat memberikan pendedahan pengalaman industri secara langsung kepada pelajar sebelum menjalani Latihan Industri (LI) dan *Work Based Learning* (WBL).

2.2 MATLAMAT

Tujuan perancangan aktiviti PPI ini adalah bagi membantu institusi membuat persediaan awal berkenaan aktiviti yang akan dilaksanakan berdasarkan keperluan program pengajian serta penggunaan peruntukan yang disalurkan dalam menjayakan setiap aktiviti PPI di institusi.

2.3 KANDUNGAN

2.3.1 Tujuan

Menjadikan pendidikan TVET yang memenuhi permintaan industri dan memberi nilai tambah kepada kualiti pelajar.

2.3.2 Sasaran

Pelaksanaan aktiviti yang mencapai jam interaksi aktiviti PPI dalam proses PdP.

2.3.3 Definisi Operasi

(i). **PPI** adalah pengamal industri yang menyumbang kepakaran mereka dalam pelaksanaan PdP di institusi merangkumi proses perancangan, penyampaian dan penilaian PdP ke arah menghasilkan graduan yang *work ready* dan holistik.

(ii). **Industri** bermaksud organisasi luar yang berkaitan bidang, terdiri daripada sektor awam atau swasta, NGO (Non-governmental organizations), badan profesional, CoE (Center of Excellence) dan lain-lain.

(iii). **Pengamal Industri** terdiri daripada ahli industri yang berkaitan bidang dan ahli akademik di IPTA/IPTS. Kriteria lain bagi pengamal industri yang boleh dipertimbangkan sebagai penceramah bagi aktiviti PPI adalah seperti berikut:

(a) individu mempunyai pengetahuan, kepakaran dan pengalaman berkaitan lebih dari **TIGA (3)** tahun; atau

(b) ahli akademik yang mendapat pengiktirafan profesional sebagai contoh Ir/Ts/Sr/Ar/Cr/LAr atau mana-mana pengiktirafan profesional yang diperakui oleh Kerajaan Malaysia dan bersesuaian dengan bidang.

Nota: Ahli akademik daripada institusi yang sama boleh dilantik sebagai PPI dengan jumlah kumulatif jam interaksi **tidak melebihi 20%** sasaran PPI tahun semasa.

(c) sedang berkhidmat dalam bidang tertentu (rujuk 2.3.3 (ii)); atau

(d) jika penceramah pernah berada dalam sektor industri dan telah berpindah ke dalam sektor awam iaitu:

- tidak lebih dari **TIGA (3)** tahun perpindahan dari industri ke sektor awam; atau
- melebihi **TIGA (3)** tahun perpindahan dari industri ke sektor awam dan masih meneruskan pengalaman industri dengan bukti.

(e) perlu sertakan *Curriculum Vitae* (CV) atau Profil Pengamal Industri bagi tujuan pembayaran dan kelayakan.

(iv). **Interaksi** bermaksud pertemuan PPI dengan pelajar melalui pelbagai aktiviti PPI sama ada secara bersemuka atau dalam talian (*online*) iaitu segerak dan tidak segerak (s*ynchronous/asynchronous*).

Nota: Kriteria interaksi dalam talian yang boleh dipertimbangkan sebagai aktiviti PPI adalah seperti persidangan video, rakaman video, webinar atau rakaman webinar dan modul *Online Training*.

(v). **Kandungan** bagi aktiviti PPI adalah perkongsian berfokus kepada pengalaman, kepakaran, teknologi dan lain-lain berasaskan industri selari dengan kandungan kurikulum pelajar.

(vi). **Jam interaksi** ialah tempoh masa interaksi aktiviti PPI melibatkan pelajar bagi program Diploma (semester 1 hingga semester 5), Diploma *Work Based Learning* (WBL) (semester 1 hingga semester 3/4/5) dan Sarjana Muda (semester 1 hingga semester 6). Penerangan lanjut di Bab 4. Pelajar yang sedang

menjalani Latihan Industri (LI) dan *Work Based Learning* (WBL) dikecualikan daripada jam interaksi aktiviti PPI.

(vii). **Jumlah jam interaksi** ialah jumlah kumulatif jam interaksi bagi semua aktiviti PPI yang dijalankan oleh sesuatu program pengajian dalam setahun. Penerangan lanjut di Bab 4.

(viii). **Program pengajian** ialah susunan kursus yang distrukturkan untuk suatu tempoh tertentu mengikut peringkat pembelajaran yang bertujuan untuk mencapai hasil pembelajaran yang telah ditentukan dan lazimnya menjurus kepada penganugerahan suatu kelayakan. Program pengajian yang terlibat adalah program peringkat **Sarjana Muda dan Diploma**. Program Sijil Kolej Komuniti, Sijil Kemahiran Khas dan Pra Diploma dikecualikan daripada aktiviti PPI dan ianya tertakluk kepada ketetapan semasa.

(ix). **Program Matang** merupakan Program Baharu yang telah ditawarkan dan mempunyai sekurang-kurangnya pelajar di semester **DUA (2)** pada tahun kiraan.

Jadual 2.1 menunjukkan contoh program Diploma A mula ditawarkan pada Sesi I: 2021/2022, maka ianya tidak akan dikira dalam pengiraan jam PPI pada Sesi I: 2021/2022. Sasaran jam mula diambil kira pada Sesi II: 2021/2022.

Jadual 2.1: Jumlah Sasaran Bagi Program Baharu Peringkat Diploma

PROGRAM	SESI KEMASUKAN PELAJAR	JUMLAH SASARAN JAM PERLU DICAPAI TAHUN SEMASA
A	Sesi I : 2021/2022	dikecualikan
	Sesi II: 2021/2022	wajib 100% pencapaian
	Sesi I : 2022/2023	
	Sesi II: 2022/2023	
	Sesi I : 2023/2024	

Jadual 2.2 menunjukkan contoh program Ijazah A mula ditawarkan pada Sesi Akademik I: 2020/2021, maka ianya tidak akan dikira dalam pengiraan jam PPI pada Sesi Akademik I: 2020/2021. Sasaran jam mula diambil kira pada Sesi Akademik II: 2020/2021.

Jadual 2.2: Jumlah Sasaran Bagi Program Baharu Peringkat Ijazah

PROGRAM	SESI KEMASUKAN PELAJAR	JUMLAH SASARAN JAM PERLU DICAPAI TAHUN SEMASA
A	Sesi Akademik I : 2020/2021	dikecualikan
	Sesi Akademik II : 2020/2021	wajib 100% pencapaian
	Sesi Akademik I : 2021/2022	
	Sesi Akademik II : 2021/2022	
	Sesi Akademik I : 2022/2023	

2.4 SASARAN AKTIVITI PPI

Semua program pengajian di institusi perlu mencapai 100% pencapaian jumlah jam interaksi yang ditetapkan (tertakluk kepada ketetapan semasa oleh JPPKK).

2.5 PERANCANGAN AKTIVITI PPI

2.5.1 Penyediaan Perancangan Aktiviti

Perancangan ini disediakan oleh Penyelaras PPI Jabatan/Ketua Program/Kursus dan diserahkan kepada Penyelaras PPI (PPPI) institusi (**Lampiran 1a**) untuk tujuan penyelarasan aktiviti PPI di peringkat institusi. Dokumen yang sama juga perlu disimpan di peringkat Ketua Program/Kursus untuk dipantau oleh Ketua Jabatan/Timbalan Pengarah (Akademik)/Timbalan Pengarah. PPPI institusi perlu menghantar salinan (**Lampiran 1**) kepada JPPKK bagi memenuhi keperluan serta pencapaian sasaran yang ditetapkan mengikut ketetapan semasa yang ditetapkan oleh JPPKK.

2.5.2 Penyediaan Perancangan Kewangan

Dalam pelaksanaan aktiviti PPI, institusi boleh menggunakan peruntukan Anggaran Belanja Mengurus (ABM) yang diperuntukkan di bawah OS 24000, OS 25000, OS 26000, OS 27000, OS 29000 dan OS 42000 seperti berikut:

(i). OS 24000 – Sewaan

(a) Objek Sebagai (OS) ini merekodkan semua bayaran berkenaan dengan sewaan atau pajakan tanah, bangunan, kemudahan dan alat kelengkapan tetapi tidak termasuk sewaan atau pajakan alat perhubungan.

(b) sewaan kenderaan untuk pengangkutan orang dan barang-barang di mana bayaran sekali gus dibuat kepada penyewa tanpa apa-apa kos tambahan berhubung dengan perkhidmatan lain yang berkaitan dengan pengangkutan seperti insurans, bayaran kos buruh dan sebagainya.

(c) sewaan kenderaan tidak termasuk pengangkutan orang dan barang yang dituntut di bawah OS 21000 dan 22000 dan juga sewaan kenderaan untuk pengangkutan orang jemputan dan barang-barangnya yang hendaklah direkodkan di bawah Objek Lanjut 29400.

(ii). OS 25000 - Bahan-bahan Makanan dan Minuman

(a) perbelanjaan yang dibuat atas pembelian tahunan bahan-bahan makanan dan minuman.

(b) Objek Lanjut 25403 makanan bermasak hendaklah digunakan untuk merekod perbelanjaan bekalan makanan bermasak untuk kegunaan pejabat sahaja contohnya bekalan makanan bermasak yang dibayar oleh Kementerian Kesihatan untuk pesakit-pesakit di hospital. Kod ini tidak termasuk bekalan makanan untuk tujuan keraian pejabat ataupun para jemputan yang hendaklah direkodkan di bawah Objek Kumpulan Lanjut 29400 - Keraian, Hospitaliti dan Honorarium.

(c) apabila makanan dan minuman disediakan oleh pihak luar sebagai satu perkhidmatan misalnya ‘catering’ maka semua kos yang terlibat hendaklah direkodkan di bawah Objek Lanjut 29126 - Perkhidmatan Persediaan Makanan.

(iii). OS 26000 - Bekalan Bahan Mentah dan Bahan-bahan untuk Penyelenggaraan dan Pembaikan.

OS ini bertujuan merekodkan perbelanjaan untuk dua jenis bekalan iaitu:

(a) bekalan bahan mentah termasuk getah, kayu, logam, galian bukan logam, bahan kimia dan sebagainya, dan

(b) bekalan bahan-bahan penyelenggaraan dan pembaikan termasuk alat ganti, petroleum, baja, racun serangga dan racun tumbuhan, alat kecil pertanian, makanan ternakan dan sebagainya untuk tujuan penyelenggaraan dan pembaikan yang dibuat oleh jabatan sendiri.

OS ini tidak termasuk apa jua perbelanjaan penyelenggaraan dan pembaikan yang dibuat oleh pihak luar di mana semua kos yang terlibat hendaklah direkodkan di bawah OS 28000 – Penyelenggaraan dan Pembaikan Kecil Yang Dibeli.

(iv). OS 27000 Bekalan dan Bahan-bahan Lain

OS ini merekodkan perbelanjaan semua bekalan dan bahan-bahan selain daripada bekalan bahan-bahan makanan dan minuman, bahan mentah dan bahan-bahan untuk penyelenggaraan dan pembaikan sendiri yang disenaraikan di bawah OS 25000 dan 26000. Walau bagaimanapun peraturan-peraturan di bawah mesti diikuti untuk merekod sesuatu perbelanjaan di bawah OS ini iaitu:

(a) Barang-barang Luak (expendable items). Semua pembelian barang-barang luak tanpa mengambil kira harga setiap unit.

(b) Barang-barang Tak Luak (non-expendable items):

- hanya pembelian barang-barang tak luak yang berharga kurang daripada RM1000 setiap unit; atau
- berharga RM1000 atau lebih setiap unit dan tidak disenaraikan di bawah OS 34000 atau 35000.

(v). OS 29000 - Perkhidmatan Ikhtisas dan Lain-lain Perkhidmatan yang Dibeli dan Hospitaliti

OS ini merekodkan semua jenis perkhidmatan yang dilaksanakan oleh pihak luar tetapi tidak termasuk penyelenggaraan dan pembaikan (yang direkodkan di bawah OS 28000 untuk pembaikan kecil atau OS 30000 untuk pembaikan besar sebagai tambahan kepada aset). Bayaran

kepada pekerja-pekerja kontrak, sambilan dan separuh masa yang tidak menyandang jawatan tetap juga direkodkan di bawah OS ini.

(vi). OS 42000 - Pemberian Dalam Negeri

OS ini merekodkan bayaran-bayaran dalam bentuk pemberian, bantuan, caruman dan subsidi yang ditujukan untuk mana-mana pihak dalam negeri.

2.5.3 Panduan pembayaran bagi penceramah/pensyarah yang menggunakan peruntukan perbendaharaan.

(i). Elaun dan bayaran **ANGGOTA PERKHIDMATAN AWAM** merujuk kepada **Pekeliling Perbendaharaan Malaysia WP1.8** bagi **Peraturan Mengenai Kadar-Kadar dan Syarat-Syarat Bayaran Sagu hati Kepada Pensyarah/Penceramah Dan Fasilitator Sambilan.** Jadual 2.3 menunjukkan kadar bayaran saguhati bagi pegawai tetap, kontrak, sementara, sambilan dan sangkut yang memberi syarahan/ceramah sambilan atau menjadi fasilitator sambilan.

Jadual 2.3: Kadar Bayaran Saguhati

Kumpulan Perkhidmatan	Kadar Bayaran Sagu hati		Had Maksimum Sebulan
	Pensyarah/ Penceramah Sambilan	Fasilitator Sambilan	
Kumpulan Pengurusan Tertinggi	RM300.00 sejam	RM100.00 sejam	Tidak melebihi ½ daripada gaji bulanan pegawai
Kumpulan Pengurusan & Profesional (Gred 53 & 54)	RM200.00 sejam	RM100.00 sejam	
Kumpulan Pengurusan & Profesional (Gred 45 - 52)	RM150.00 sejam	RM90.00 sejam	
Kumpulan Pengurusan & Profesional (Gred 41 - 44)	RM120.00 sejam	RM80.00 sejam	
Kumpulan Sokongan	RM80.00 sejam	RM60.00 sejam	

*Tertakluk kepada peruntukan sedia ada jabatan

(ii). Elaun dan bayaran bagi **BUKAN PEGAWAI AWAM** adalah merujuk **Pekeliling Perbendaharaan Malaysia WP 10.9 yang berkuat kuasa pada 15 Januari 2021** bagi penetapan kadar disediakan dalam Jadual 2.4 dan Jadual 2.5. Jadual 2.4 menunjukkan kadar bayaran penceramah dan fasilitator **BUKAN PEGAWAI AWAM** mengikut kelayakan akademik. Penggunaan kadar kepada mana-mana yang terendah dan menguntungkan kerajaan dibenarkan.

Jadual 2.4: Penetapan Kadar Maksimum
Bayaran Penceramah dan Fasilitator
BUKAN PEGAWAI AWAM mengikut kelayakan akademik

KADAR ASAS MENGIKUT KELAYAKAN AKADEMIK			
Kelulusan	**Penceramah**	**Fasilitator**	**Persijilan Profesional (khas untuk penceramah)**
Diploma	RM 100 sejam	RM 60 sejam	Tambahan RM100 sejam
Sarjana Muda	RM 200 sejam	RM 80 sejam	
Sarjana	RM 300 sejam	RM 100 sejam	
Ph.D.	RM 400 sejam	RM 120 sejam	

Nota:
(a) Persijilan Profesional perlulah diiktiraf oleh badan profesional yang berkelayakan dan diiktiraf oleh Kerajaan Malaysia. (Contoh: ACCA, CIMA, CITP dan lain-lain); dan
(b) Penggunaan kadar adalah mengikut kepada mana-mana yang terendah dan menguntungkan kerajaan.

(*Sumber*: Pekeliling Perbendaharaan Malaysia WP 10.9 dan Arahan Pentadbiran Kewangan JPPKK Bil 3 2021 - Garis Panduan Penetapan Kadar dan Perolehan Perkhidmatan Kepakaran Daripada Kalangan Bukan Pegawai Awam Dalam Program Rasmi Kerajaan PP/WP10.9 bagi JPPKK (Lampiran A))

Jadual 2.5 menunjukkan kadar bayaran penceramah dan fasilitator **BUKAN PEGAWAI AWAM** selain mengikut kelayakan akademik. Penggunaan kadar adalah kepada mana-mana yang terendah dan menguntungkan kerajaan.

Jadual 2.5: Penetapan Kadar Maksimum Bayaran Penceramah dan Fasilitator **BUKAN PEGAWAI AWAM** selain mengikut kelayakan akademik

Kategori	Kadar	
	Per Jam	Per Program
Tenaga kerja kreatif, artis, pakar budaya, penceramah, pengacara, pancaragam, *social media influencer* (SMI) dan lain-lain seumpama dengannya	RM 300 sejam	RM 3000 sejam
Nota: Penggunaan kadar adalah mengikut kepada mana-mana yang terendah dan menguntungkan kerajaan.		

(*Sumber*: Pekeliling Perbendaharaan Malaysia WP 10.9 dan Arahan Pentadbiran Kewangan JPPKK Bil 3 2021 - Garis Panduan Penetapan Kadar dan Perolehan Perkhidmatan Kepakaran Daripada Kalangan Bukan Pegawai Awam Dalam Program Rasmi Kerajaan PP/WP10.9 bagi JPPKK (Lampiran A))

Nota: Semua aktiviti pembayaran adalah merujuk kepada pekeliling perbendaharaan ataupun arahan pentadbiran kewangan semasa yang diguna pakai dan ianya tertakluk kepada perubahan-perubahan arahan Perbendaharaan Malaysia atau JPPKK.

2.6 RUMUSAN

Perancangan pelaksanaan aktiviti PPI ini amat penting dalam meningkatkan kebolehpasaran pelajar selaras dengan peranan institusi sebagai peneraju TVET. Melalui perancangan aktiviti PPI yang rapi dan berkesan, ianya dapat memberi impak dalam proses PdP bagi memastikan matlamat tercapai. Hubungan yang baik antara pihak institusi dan industri juga harus dikekalkan bagi kelangsungan pelajar yang bakal dilahirkan agar lebih berdaya saing dan produktif selari dengan kehendak industri. Kesimpulannya, dengan kombinasi ketelitian perancangan aktiviti PPI dan sokongan padu dari pihak pengurusan dan industri, diharapkan akan dapat melahirkan graduan TVET berkualiti yang holistik dan berketrampilan.

BAB 3
PELAKSANAAN AKTIVITI

3.1 PENGENALAN

Pelaksanaan aktiviti PPI memberi peluang kepada pelajar untuk mempelajari, mengalami dan melihat sendiri amalan dan sistem kerja di organisasi/industri, suasana pekerjaan, persekitaran organisasi/industri, teknologi terkini serta prosedur kerja yang sebenar. Aktiviti ini memberi pengalaman pembelajaran baharu yang mengaitkan teori di dalam bilik kuliah dengan amalan organisasi di industri.

Lawatan pembelajaran berasaskan pengalaman ke industri mengembangkan orientasi mental pelajar dengan memberi gambaran sebenar apa yang berlaku di industri di samping dapat memotivasikan pembelajaran, menerapkan nilai-nilai murni, pengurusan masa, personaliti dan kepimpinan.

Aktiviti PPI perlu dipelbagaikan untuk memberi ruang dan peluang kepada pelajar mengadaptasi segala ilmu dan pengalaman dari aktiviti yang dijalankan. Aktiviti PPI yang dilaksanakan mampu melahirkan pelajar yang berkualiti melalui pendedahan bersama industri.

3.2 MATLAMAT

Tujuan pelaksanaan aktiviti PPI ini adalah bagi membantu institusi membuat persediaan terhadap proses pelaksanaan aktiviti dari sebelum, semasa dan selepas berdasarkan keperluan program pengajian serta peruntukan yang disalurkan untuk menjayakan setiap aktiviti PPI di institusi.

3.3 KAEDAH PELAKSANAAN AKTIVITI PPI

Terdapat pelbagai kaedah yang dicadangkan untuk pelaksanaan aktiviti PPI seperti berikut:

(i). Syarahan/Kuliah;

(ii). Seminar/Forum/Taklimat;

(iii). Pembelajaran berasaskan pengalaman di industri (lawatan akademik);

(iv). Pembentangan Cadangan Projek/Sesi *Pitching* /Pembentangan Projek Pelajar/demonstrasi projek pelajar yang melibatkan panel industri sebagai penilai aktiviti tersebut;

(v). Kursus-kursus kemahiran/pensijilan industri (contoh: Autodesk AutoCAD, Autodesk Inventor, CompTIA A+, CISCO, CCNA, CEH, IBM SkillsBuild dan sebagainya);

(vi). Penyelia Bersama Projek Pelajar (Penyelia dari Industri);

(vii). Juri Aktiviti Akademik Pelajar (pertandingan inovasi/rekacipta/*public speaking*/usahawan/kemahiran teknikal);

(viii). Ceramah/Perbincangan secara bersemuka dan dalam talian;

(ix). Webinar/rakaman webinar dalam talian;

(x). Perkongsian industri berbentuk rakaman video;

(xi). Modul *online training* tentang teknologi terkini; dan

(xii). Pelaksanaan secara kerjasama atau sinergi antara beberapa institusi

Setiap aktiviti yang dilaksanakan hendaklah seiring dengan kandungan kurikulum kursus program pengajian. Perkara ini penting bagi memastikan semua aktiviti yang dilaksanakan menyumbang kepada hasil pembelajaran pelajar. Pilihan organisasi/industri yang bersesuaian amat digalakkan untuk memberikan hasil pembelajaran yang bersesuaian berdasarkan kurikulum kursus.

Ulasan lanjut bagi aktiviti PPI adalah seperti berikut:

3.3.1 Panduan Pelaksanaan Berbentuk Webinar/Rakaman Webinar

(i). Pelaksanaan aktiviti PPI berbentuk webinar/rakaman webinar haruslah dalam tempoh **TIGA (3)** tahun terkini bagi memastikan kerelevanan kandungan termasuk teknologi yang diguna pakai oleh industri.

(ii). Institusi juga perlu memastikan perkongsian tersebut dikongsi oleh industri atau individu yang mempunyai pengalaman dan kepakaran yang bersesuaian.

(iii). Pelaksanaan aktiviti PPI berbentuk **webinar/rakaman webinar** haruslah memenuhi keperluan dokumentasi seperti berikut:

(a). kertas kerja;

(b). surat jemputan/poster/makluman hebahan tentang webinar yang dijalankan daripada penganjur;

(c). senarai kehadiran pelajar, borang refleksi pelajar; dan

(d). Laporan Aktiviti PPI (sertakan bukti gambar pelajar menghadiri webinar).

3.3.2 Panduan Pelaksanaan Berbentuk Rakaman Video

(i). Institusi perlu mendapatkan surat/emel persetujuan industri tertentu sebagai penceramah dan industri tersebut menghasilkan video perkongsian pengalaman/kepakaran/ teknologi **KHAS** bagi tujuan aktiviti PP**I** ini.

(ii). Rakaman video perkongsian daripada industri ini juga haruslah dalam tempoh **TIGA (3)** tahun terkini bagi memastikan kerelevanan kandungan termasuk teknologi yang diguna pakai oleh industri.

(iii). Fasilitator/wakil/penceramah dari industri mestilah berinteraksi bersama pelajar sekurang-kurangnya selama 30 minit sama ada secara bersemuka atau dalam talian (contohnya sesi soal jawab/perkongsian/ulasan).

(iv). Institusi juga perlu memastikan perkongsian tersebut dikongsi oleh industri atau individu yang mempunyai pengalaman dan kepakaran yang bersesuaian.

(v). Video ini kemudiannya boleh dimuat naik di mana-mana platform agar boleh ditonton oleh pelajar yang disasarkan.

(vi). Video rakaman untuk tujuan aktiviti PP**I** ini **bukanlah video yang dipilih secara rawak** melalui laman web tertentu seperti *YouTube* dan sebagainya.

(vii). Pelaksanaan aktiviti PP**I** mengenai **perkongsian industri berbentuk rakaman video** haruslah memenuhi keperluan dokumentasi seperti berikut:

(a). kertas kerja (termasuk profil umum industri/individu yang membuat perkongsian;

(b). surat atau emel persetujuan daripada industri untuk menghasilkan atau membenarkan rakaman video khas bagi tujuan PP**I**;

(c). senarai kehadiran pelajar, borang refleksi pelajar; dan

(d). Laporan Aktiviti PP**I** (sertakan bukti gambar pelajar menonton rakaman video).

3.3.3 Panduan Pelaksanaan Berbentuk Modul *Online Training*

(i). Aktiviti PP**I** berbentuk modul *online training* menggunakan *e-learning tools* pula haruslah memiliki nilai tambah kepada pelajar.

(ii). *Tools* yang digunakan tersebut adalah yang diguna pakai oleh industri dan bukan *tools* yang diguna pakai dalam proses pembelajaran dan pengajaran (PdP) di dalam bilik kuliah.

(iii). Perkongsian ini juga harus melibatkan sesi pengenalan dan penerangan oleh industri yang terlibat.

(iv). Pelaksanaan aktiviti PPI berbentuk **modul tentang teknologi terkini** haruslah memenuhi keperluan dokumentasi seperti berikut:

(a). kertas kerja (termasuk profil umum industri yang menggunakan teknologi yang dikongsi, profil umum individu daripada industri tersebut yang membuat sesi pengenalan dan penerangan (jika berkaitan) serta sinopsis kandungan perkongsian);

(b). senarai kehadiran pelajar, refleksi pelajar; dan

(c). Laporan Aktiviti PPI (sertakan bukti gambar pelajar menjalani PPI tersebut dan bukti sijil atau *"certificate of completion"* apabila pelajar selesai menamatkan modul tersebut).

3.3.4 Panduan Pelaksanaan Secara Kerjasama atau Sinergi antara Beberapa Institusi

(i). Pelaksanaan aktiviti PPI secara kerjasama atau sinergi di antara beberapa institusi dan kerjasama antara jabatan dalam institusi termasuk jabatan sokongan adalah dibenarkan.

(ii). Namun tatacara penghasilan dokumentasi dan tatacara kewangan yang betul perlu diikuti dan perlu disimpan oleh semua institusi/jabatan yang terlibat.

(iii). Pelaksanaan aktiviti PPI ini haruslah memenuhi keperluan dokumentasi seperti berikut:

(a). kertas kerja (mempunyai ahli jawatankuasa yang melibatkan beberapa institusi);

(b). surat jemputan/poster/makluman hebahan tentang program yang dijalankan;

(c). surat pengesahan penerimaan/persetujuan daripada industri (jika berkaitan);

(d). senarai kehadiran pelajar, refleksi pelajar mengikut institusi masing-masing; dan

(e). Laporan Aktiviti PPI (masukkan bukti gambar pelajar institusi masing-masing yang menyertai program PPI ini).

3.3.5 Panduan Pelaksanaan Aktiviti PPI Selain Kaedah 3.3.1 Hingga 3.3.4.

(i). Kaedah pelaksanaan aktiviti PPI ini adalah sama ada secara bersemuka, dalam talian atau gabungan kedua-duanya sekali.

(ii). Bagi pelaksanaan aktiviti melibatkan penjurian, panel penilai dan penyeliaan oleh pihak industri, bentuk interaksi antara pelajar bersama industri boleh disampaikan dalam bentuk ulasan dan/atau cadangan penambahbaikan. Maklum balas ini boleh disampaikan secara terus semasa aktiviti atau secara bertulis menggunakan borang ulasan mengikut kesesuaian aktiviti. Format borang ulasan tertakluk kepada institusi masing-masing.

(iii). Pelaksanaan aktiviti PPI ini haruslah memenuhi keperluan dokumentasi seperti berikut:

(a). kertas kerja;

(b). surat jemputan/lantikan penceramah;

(c). surat/e-mel/makluman pengesahan penerimaan/ persetujuan daripada industri

(d). borang ulasan industri (jika berkaitan);

(e). senarai kehadiran pelajar dan refleksi pelajar; dan

(f). Laporan Aktiviti PPI.

3.4 SURAT PENGESAHAN PENERIMAAN/PERSETUJUAN DARIPADA INDUSTRI

Bagi kaedah pelaksanaan aktiviti yang mewajibkan surat penerimaan/persetujuan daripada industri, templat surat pengesahan tersebut boleh dirujuk seperti di **Lampiran 2.** Walau bagaimanapun**,** sebarang bentuk bukti penerimaan/persetujuan seperti paparan tangkapan skrin atau *screenshot* aplikasi media sosial seperti *whatsapp*, mesej pesanan ringkas atau jawapan penerimaan melalui e-mel juga diterima.

3.5 SKOP TUGAS

3.5.1 Timbalan Pengarah (Akademik) / Timbalan Pengarah Institusi

(i). Meluluskan dan memantau aktiviti PPI yang dilaksanakan di semua jabatan.

3.5.2 Ketua Unit CISEC / Pegawai Perhubungan Industri dan Alumni

(i). Membantu menghubungkan industri dengan institusi dengan mencadangkan/memberikan maklumat industri yang bersesuaian jika terdapat permintaan/keperluan daripada jabatan.

3.5.3 Penyelaras PPI Institusi

(i). Menyemak Laporan Aktiviti PPI dan memberi maklum balas kepada jabatan/program sama ada laporan diterima lengkap atau perlukan pembetulan/penambahan berdasarkan Buku Panduan Pelaksanaan Aktiviti PPI yang sedang berkuat kuasa.

(ii). Mengumpul laporan daripada semua jabatan dan memastikan aktiviti PPI dijalankan mengikut perancangan setiap jabatan. Memaklumkan pencapaian jumlah jam PPI terkini kepada Timbalan Pengarah (Akademik) / Timbalan Pengarah institusi di dalam mesyuarat yang bersesuaian (contohnya Mesyuarat Akademik institusi);

(iii). Menghasilkan **laporan keseluruhan** aktiviti PPI bagi tahun tersebut di institusi; dan

(iv). Melengkapkan Laporan Pencapaian Aktiviti PPI secara sukuan tahun bagi setiap tahun.

3.5.4 Ketua Jabatan / Unit

(i). Memantau aktiviti yang dijalankan oleh semua program di jabatan / unit masing-masing.

3.5.5 Ketua Program

(i). Merancang aktiviti PPI di peringkat Jabatan / Unit;

(ii). Menghantar senarai perancangan aktiviti PPI Jabatan yang telah disahkan oleh Ketua Program/Ketua Jabatan/Unit kepada Penyelaras PPI institusi; dan

(iii). Memastikan aktiviti PPI berjalan dengan lancar mengikut proses pelaksanaan aktiviti PPI.

3.5.6 Penyelaras PPI Jabatan (bagi institusi berkaitan sahaja)

(i). Membantu merancang aktiviti PPI di peringkat jabatan;

(ii). Membantu menghantar senarai perancangan aktiviti PPI Jabatan yang telah disahkan oleh Ketua Program/Ketua Jabatan kepada Penyelaras PPI institusi;

(iii). Membantu memastikan aktiviti PPI berjalan dengan lancar mengikut proses pelaksanaan aktiviti PPI;

(iv). Membantu memantau pelaksanaan aktiviti PPI mengikut perancangan jabatan; dan

(v). Mengumpul Laporan Aktiviti PPI dan diserahkan kepada Penyelaras PPI institusi mengikut arahan semasa pengurusan institusi.

3.5.7 Pensyarah Kursus

(i). Melaksanakan aktiviti PPI mengikut proses pelaksanaan aktiviti PPI dan menyiapkan Laporan Aktiviti PPI mengikut format laporan PPI yang ditetapkan.

3.5.8 Pelajar

(i). Menyertai setiap aktiviti PPI yang dirancang oleh jabatan/unit.

3.6 PROSES PELAKSANAAN AKTIVITI PPI

Carta Alir 3.1: Proses Pelaksanaan
Seminar / Webinar / Kursus / Bengkel PPI Dalaman

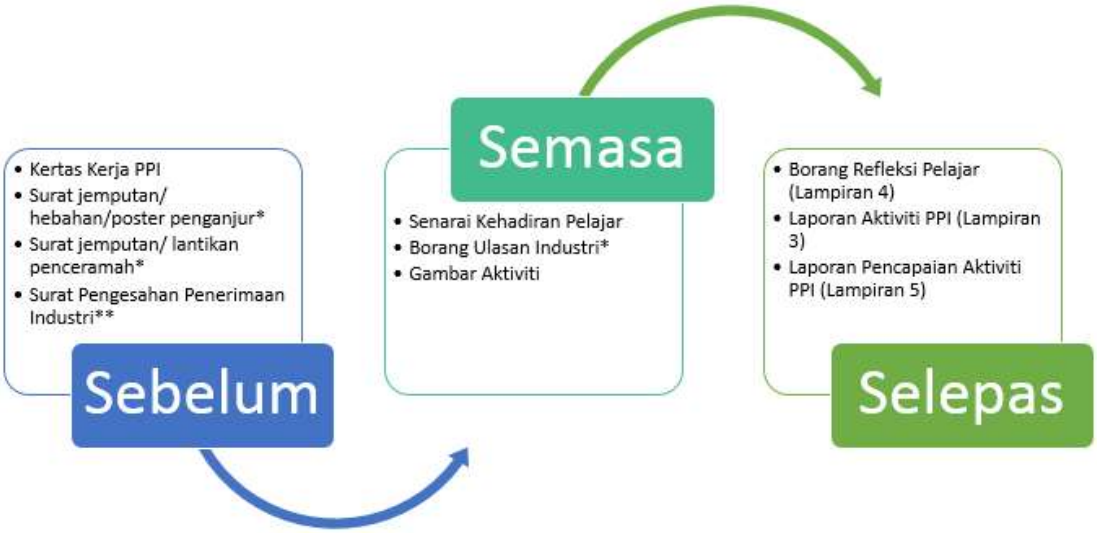
Nota:

* mengikut kesesuaian kaedah pelaksanaan aktiviti PPI; dan

** tertakluk kepada tatacara kewangan yang sedang berkuat kuasa.

Carta Alir 3.2: Proses Pelaksanaan
Lawatan Akademik/Seminar/Kursus/Bengkel PPI Luaran

Rajah 3.1: Proses Pelaksanaan Aktiviti PPI



Nota:

* mengikut kesesuaian kaedah pelaksanaan aktiviti PPI; dan

** bagi kaedah pelaksanaan aktiviti terlibat, surat penerimaan/persetujuan dari industri berkaitan atau dokumen bukti pembayaran kepada PPI yang menggunakan peruntukan dari OS 29000 (EKK) dan mengikut tatacara kewangan yang sedang berkuat kuasa. Sekiranya dokumen ini tiada, institusi perlu menyediakan dokumen berdasarkan **Lampiran 2.**

3.7 RUMUSAN

Pelaksanaan aktiviti PPI ini adalah selaras dengan PPPM (PT) 2015-2025 yang memerlukan institusi mempelbagaikan kaedah PdP merangkumi 11 kluster hasil pembelajaran yang mampu membina pengetahuan, kemahiran dan pengalaman pelajar institusi secara holistik dan seimbang.

BAB 4
KAEDAH PENGIRAAN JAM INTERAKSI

4.1 PENGENALAN

Pelaksanaan aktiviti PPI yang benar-benar berjaya, mampu memberi impak kepada kumpulan sasaran. Ini termasuklah jumlah pengiraan jam pertemuan aktiviti PPI yang melibatkan aktiviti di institusi mahupun di industri. Pencapaian jam terkumpul aktiviti PPI mampu mengukuhkan kerelevenan dan keresponsifan program pengajian di Politeknik dan Kolej Komuniti Malaysia. Penekanan yang jitu harus diberikan dalam proses pengiraan jam pelaksanaan aktiviti PPI yang mana ianya merupakan inti pati dalam pengukuran pencapaian sasaran pelaksanaan aktiviti PPI. Pengiraan jam adalah berdasarkan contoh aktiviti-aktiviti yang lazim diadakan di institusi.

4.2 PELAKSANAAN

Institusi bebas melaksanakan aktiviti PPI berdasarkan bidang pengajian pelajar. Ini termasuk semua jenis kursus yang terkandung di dalam struktur program pengajian pelajar. Namun demikian, pelaksanaan 100% aktiviti PPI melibatkan kursus yang berkaitan **bidang pengajian pelajar** adalah **DIGALAKKAN** dan perlu diberi keutamaan.

Nota:

Bidang Pengajian - Kursus bidang pengajian pelajar merujuk kepada Dokumen Kurikulum *(Programme Information --> Programme Structure)* iaitu *common core course, discipline course* dan *elective course*. Pelaksanaan aktiviti PPI melibatkan *compulsory course* juga boleh diambil kira dalam pencapaian sasaran jam pelaksanaan PPI, namun ianya terhad kepada 20% dari keseluruhan jam yang dikira.

Sekiranya terdapat aktiviti yang melibatkan kursus selain daripada bidang pengajian, agihan pengiraan jam interaksi adalah seperti berikut:

(i). **sekurang-kurangnya 80%** daripada jam interaksi yang dikira perlu melibatkan kursus yang berkaitan **bidang pengajian pelajar (*common core course, discipline course* dan *elective course*);** dan

(ii). **tidak lebih 20%** daripada jam interaksi yang dikira perlu melibatkan **kursus wajib (*compulsory course*).**

Namun, semua jenis aktiviti kemasyarakatan atau kesukarelawanan tidak diambil kira dalam pengiraan sasaran aktiviti PPI.

4.3 PENGIRAAN JAM INTERAKSI

Contoh 1: Pembelajaran Berasaskan Pengalaman di Industri

Jadual 4.1 menunjukkan kiraan jam interaksi aktiviti PPI bagi pembelajaran berasaskan pengalaman di industri yang membawa jumlah jam interaksi sebanyak 6 jam. Pengiraan jam interaksi diambil kira apabila berlaku interaksi antara pelajar dan wakil industri seperti sesi taklimat dan soal jawab yang disampaikan oleh pihak industri.

Sesi lawatan ke tapak projek diambil kira jika melibatkan pihak industri mengiringi pelajar dan memberi penerangan atau demonstrasi berkaitan projek. Masa yang digunakan untuk tempoh perjalanan dan waktu rehat tidak boleh diambil kira sebagai jam interaksi. Majlis penutup juga tidak dikira dalam kiraan jam interaksi.

Jadual 4.1: Kiraan Jam Interaksi Aktiviti PPI
Untuk Pembelajaran Berasaskan Pengalaman di Industri

MASA	AKTIVITI	KIRAAN JAM INTERAKSI
08:00 – 09:00 pg	Bertolak dari Institusi ke JKR	0 jam
09:00 – 12:00 tghari	Sesi Taklimat oleh pihak JKR	3 jam
12:00 – 01:00 ptg	Sesi soal jawab antara pelajar dan industri	1 jam
01:00 – 02:00 ptg	Rehat dan Makan Tengahari	0 jam
02:00 – 04:00 ptg	Lawatan ke Tapak Projek	2 jam
04:00 – 04:30 ptg	Majlis Penutup	0 jam
04:30 – 05:30 ptg	Bertolak pulang ke Institusi	0 jam
Jam Interaksi PPI		**6 jam**

Contoh 2: Ceramah/Seminar Dalam Talian

Jadual 4.2 menunjukkan kiraan jam interaksi aktiviti PPI bagi ceramah/seminar yang berlaku secara dalam talian. Pengiraan jam diambil kira apabila berlaku interaksi antara pihak industri dengan pelajar secara *synchronous* dan *asynchronous*. Masa yang digunakan untuk pelajar menjawab *pre test* dan *post test* tidak dikira dalam kiraan jam interaksi. Pengiraan jam interaksi mula dikira semasa sesi 1, ceramah industri secara webinar, diteruskan dengan sesi kedua iaitu perkongsian pengalaman mengikut bidang yang dilakukan secara *breakout room.*

Bagi sesi pengisian industri yang melibatkan pembahagian kumpulan (*breakout room)*, jam interaksi hanya akan dikira jika ada penglibatan wakil industri di setiap kumpulan. Jam interaksi setiap kumpulan akan dikira secara berasingan. Jam interaksi dikira bagi sesi seterusnya iaitu perkongsian modul dan perkongsian rakaman video dan membawa jumlah jam interaksi bagi aktiviti PPI ini sebanyak 10 jam.

Jadual 4.2: Kiraan Jam Interaksi Aktiviti PPI
Bagi Interaksi Dalam Talian

MASA	AKTIVITI	KIRAAN JAM INTERAKSI
08:30 – 09:00 pg	Pengenalan dan *Pre Test*	0 jam
09:00 – 11:00 pg	Sesi 1 : Ceramah Industri Webinar (Webex, Zoom, Ms Team, GMeet)	2 jam
11:00 – 01:00 ptg	Sesi 2 : Perkongsian Pengalaman Mengikut Bidang (*Breakout Room* x 3 kumpulan) - Pelajar dan wakil Industri setiap *room.*	2 jam x 3 = 6 jam
01:00 – 02:00 ptg	Rehat	0 jam
02:00 – 03:00 ptg	Perkongsian Modul - Pengajaran secara langsung (*live*) (*synchronous*)	1 jam
	- Pautan video yang dikongsi: video berdurasi 1 jam *(asynchronous)*	1 jam
03:00 – 04:00 ptg	*Online Post Test*	0 jam
Jam Interaksi PPI		**10 jam**

***Contoh 3*: Aktiviti Ceramah/Seminar Bersemuka**

Pengiraan jam interaksi bagi aktiviti PPI berbentuk ceramah/seminar secara bersemuka adalah seperti yang ditunjukkan dalam Jadual 4.3. Jam interaksi bermula apabila berlakunya interaksi pelajar dan wakil industri pada sesi ceramah dan soal jawab yang disampaikan oleh wakil industri yang membawa kepada jumlah keseluruhan jam interaksi sebanyak 3 jam. Masa yang digunakan untuk pendaftaran, majlis pembukaan, majlis penutup dan waktu rehat tidak boleh diambil kira sebagai jam interaksi.

Jadual 4.3: Kiraan Jam Interaksi Aktiviti PPI
Bagi Aktiviti Ceramah/Syarahan

MASA	AKTIVITI	KIRAAN JAM INTERAKSI
08:30 – 09:00 pg	Pendaftaran	0
09:00 – 10:00 pg	Majlis pembukaan	0
10:00 – 12:00 tghri	Sesi Ceramah oleh wakil industri	2 jam
12:00 – 01:00 ptg	Sesi soal jawab antara pelajar dan wakil industri	1 jam
01:00 – 01:30 ptg	Majlis penutup	0
Jam Interaksi PPI		**3 jam**

***Contoh 4*: Aktiviti Panel Penilai Projek Akhir**

Pengiraan jam interaksi bagi aktiviti Panel Penilai Projek Akhir yang dilaksanakan sama ada secara bersemuka atau secara dalam talian seperti yang ditunjukkan dalam Jadual 4.4. Bagi sebarang sesi penilaian projek yang melibatkan pembahagian kumpulan mengikut program, jam interaksi dikira apabila terdapat penglibatan panel industri di setiap kumpulan. Jam interaksi setiap kumpulan akan dikira secara berasingan.

Masa yang digunakan untuk pendaftaran, majlis pembukaan, majlis penutup dan waktu rehat tidak boleh diambil kira sebagai jam interaksi.

Jadual 4.4: Kiraan Jam Interaksi Aktiviti PPI
Bagi Panel Penilai Projek Akhir (DKA, DKM dan DKE)

MASA	AKTIVITI	KIRAAN JAM INTERAKSI
9:00 – 10:00 pg	Pendaftaran dan Majlis pembukaan	0
10:00 – 01:00 ptg	Sesi Penilaian oleh Panel penilai industri **Penilaian Projek Akhir secara bersemuka** <u>Situasi 1</u> 2 panel penilai industri di dua lokasi berbeza untuk program yang sama	<u>Situasi 1</u> 2 Interaksi x 3 jam = 6 jam

<table>
<tr><th>MASA</th><th>AKTIVITI</th><th>KIRAAN JAM INTERAKSI</th></tr>
<tr><td></td><td><u>Situasi 2</u>
2 panel penilai industri di lokasi yang sama untuk program yang sama

atau

Penilaian Projek Akhir secara dalam talian
<u>Situasi 1</u>
2 panel penilai industri menilai dua kumpulan yang berbeza untuk program yang sama

<u>Situasi 2</u>
2 panel penilai industri menilai kumpulan yang sama untuk program yang sama</td><td><u>Situasi 2</u>
1 Interaksi x 3 jam = 3 jam

atau

<u>Situasi 1</u>
2 Interaksi x 3 jam = 6 jam

<u>Situasi 2</u>
1 Interaksi x 3 jam = 3 jam</td></tr>
<tr><td>02:00 – 03:30 ptg</td><td>Satu (1) atau lebih panel penilai industri di lokasi yang sama untuk program yang berbeza
(DKM, DKE & DKA)
<table><tr><th>Masa</th><th>Program</th><th>Tempoh</th></tr><tr><td>2:00-2:30 ptg</td><td>DKM</td><td>30 min</td></tr><tr><td>2:30-3:00 ptg</td><td>DKA</td><td>30 min</td></tr><tr><td>3:00-3:30 ptg</td><td>DKE</td><td>30 min</td></tr></table></td><td>1 Interaksi x 30 min = 30 min/program

DKM : 30 min,
DKE : 30 min,
DKA : 30 min</td></tr>
<tr><td>03:30 – 04:30 ptg</td><td>Rumusan oleh wakil panel penilai industri</td><td>1 Interaksi x 1 jam = 1 jam/program

DKM : 1 jam,
DKE : 1 jam,
DKA : 1 jam</td></tr>
<tr><td>04:30 – 05:00 ptg</td><td>Majlis Penutup</td><td>0</td></tr>
</table>

Contoh 5: Aktiviti Modul *Online Training*

Jadual 4.5 menunjukkan pengiraan jam interaksi bagi aktiviti PPI Modul *Online Training* yang membawa kepada jumlah jam interaksi sebanyak 10 jam. Pelaksanaan ini mempunyai interaksi secara *asynchronous* antara pelajar dan industri. Jam interaksi dikira mengikut tempoh jam bagi setiap pelaksanaan modul mengikut bidang-bidang tertentu.

Jadual 4.5: Kiraan Jam Interaksi Aktiviti PPI Bagi Modul *Online Training*

AKTIVITI	KIRAAN JAM INTERAKSI
Module 1 - Python Basics	2 jam
Module 2 - Python Data Structures	2 jam
Module 3 - Python Programming Fundamentals	2 jam
Module 4 - Working with Data in Python	2 jam
Module 5 - Working with Numpy Arrays	2 jam
Jam Interaksi PPI	**10 jam**

***Contoh 6*: Penyelia Bersama Projek Pelajar (Penyelia dari Industri)**

Jadual 4.6 menunjukkan pengiraan jam interaksi bagi aktiviti Penyelia Bersama Projek Pelajar (Penyelia dari Industri) yang membawa kepada jumlah jam interaksi sebanyak 4 jam. Pelaksanaan ini mempunyai interaksi secara *synchronous* antara pelajar dan penyelia bersama dari industri. Jam interaksi dikira mengikut tempoh jam proses penyeliaan yang berlaku di antara penyelia dan pelajar.

Jadual 4.6: Kiraan Jam Interaksi Aktiviti PPI Bagi Penyelia Bersama Projek Pelajar (Penyelia dari Industri)

MASA	AKTIVITI	KIRAAN JAM INTERAKSI
09:00 – 10:00 pg	Demonstrasi pengujian bahasa pengaturcaraan yang dibangunkan dalam platform *Internet of Things* (IoT) Arduino	1 jam
10:00 – 10:30 pg	Rehat	0
10:30 – 01:30 ptg	Perbincangan, pembetulan ralat dan penambahbaikan pengaturcaraan	3 jam
Jam Interaksi PPI		**4 jam**

***Nota*:**

1. Institusi perlu realistik dalam menyediakan tentatif program yang dapat mengukur tempoh jam pertemuan yang sebenar antara PPI dan pelajar berdasarkan jenis aktiviti yang dilaksanakan.
2. Bagi aktiviti yang melibatkan jam pertemuan melebihi 5 jam, institusi perlu menyediakan dokumen/bukti yang lebih terperinci untuk membuktikan wujudnya jam pertemuan PPI seperti yang dilaporkan.

4.4 PENGIRAAN PERATUS PENCAPAIAN JAM INTERAKSI AKTIVITI PPI MENGIKUT PROGRAM

FORMULA PENGIRAAN

$$p = \frac{Q}{R} \times 100$$

p : Peratus pencapaian jam interaksi PPI
Q : Jumlah jam interaksi aktiviti yang telah dilaksanakan
R : Jumlah jam interaksi yang ditetapkan oleh JPPKK

***Contoh*:**

Jabatan : Kejuruteraan Awam
Program : Diploma Kejuruteraan Awam

Pengiraan berdasarkan penetapan sasaran 30 jam interaksi.

4.4.1 Bidang Pengajian Pelajar (*common core course, discipline course* dan *elective course*)

(i). Pembelajaran Berasaskan Pengalaman di Industri ke JKR, Ipoh (2 jam)
(ii). Pembelajaran Teknikal Berasaskan Pengalaman di Industri ke Tapak Pembinaan Projek Sekolah Tambun (2 jam)
(iii). Panel Penilai Projek Akhir DKA (6 jam)
(iv). *e-Modul Structure Design* (10 jam)
(v). Kursus AutoCAD 3D (4 jam)
(vi). *Online conference* (3 jam)

$$Peratus = \frac{27}{30}\ x\ 100\% = 90\%$$

Memenuhi syarat peratus pembahagian jam interaksi yang ditetapkan (sekurang-kurangnya 80% untuk bidang pengajian pelajar).

4.4.2 Kursus Wajib *(compulsory course)*

(i). Taklimat Strategi Pemasaran Dalam Talian – MPU22012 Entrepreneurship (2 jam)
(ii). Kursus Pembangunan *Resume* dan Etika Temuduga – MPU1231 Kemahiran Insaniah (2 jam)

$$Peratus = \frac{4}{30}\ x\ 100\% = 13.33\%$$

Memenuhi syarat peratus pembahagian jam interaksi yang ditetapkan (tidak melebihi 20% untuk kursus wajib).

4.5 PENGIRAAN PERATUS KESELURUHAN PENCAPAIAN PELAKSANAAN AKTIVITI PPI BAGI SETIAP INSTITUSI

FORMULA PENGIRAAN

$$P = \frac{S}{T} \times 100$$

P : Peratus pencapaian jam interaksi PPI keseluruhan

S : Jumlah program yang mencapai sasaran jumlah jam interaksi yang ditetapkan oleh JPPKK

T : Jumlah program yang ditawarkan di institusi

***Contoh*:**

Politeknik	:	Politeknik Ungku Omar (PUO)
Jumlah Program Ditawarkan	:	19 program
Jumlah Program mencapai 30 jam interaksi	:	16 program

Pengiraan berdasarkan penetapan sasaran 30 jam interaksi.

$$Peratus = \frac{16}{19} \times 100\% = 84\%$$

Belum memenuhi syarat pencapaian sebanyak 100%.

4.6 RUMUSAN

Kaedah pengiraan jam interaksi aktiviti PPI yang betul adalah penting bagi memastikan sasaran jam aktiviti dicapai dengan tepat. Sasaran jam interaksi yang dicapai dapat menunjukkan bahawa sesuatu program itu mempunyai tahap perkongsian ilmu yang mantap bersama pihak industri seiring dengan teknologi semasa. Justeru, kesungguhan dan komitmen daripada semua pihak yang terlibat dapat memastikan kejayaan pelaksanaan aktiviti PPI agar dapat memberi impak yang besar serta menyeluruh kepada kualiti program pengajian di institusi.

BAB 5
PELAPORAN DAN PENAMBAHBAIKAN

5.1 PENGENALAN

Politeknik dan Kolej Komuniti bertanggungjawab menyediakan dan mengemaskini semua dokumen berkaitan serta mengemukakan Laporan Aktiviti PPI dan seterusnya Laporan Pencapaian Pelaksanaan Aktiviti PPI. Laporan perlu disertakan dengan analisis dan cadangan tindakan penambahbaikan kualiti berterusan (CQI). Pelaporan ini melibatkan semua aspek laporan penilaian dan penambahbaikan berdasarkan Borang Refleksi Pelajar, Laporan Aktiviti PPI dan Laporan Pencapaian Pelaksanaan Aktiviti PPI. Laporan Pencapaian Aktiviti PPI ini adalah melibatkan data/maklumat selama **SATU (1)** tahun dan perlu dilengkapkan secara sukuan tahun.

5.2 MATLAMAT

Tujuan laporan aktiviti PPI dan penambahbaikan ini disediakan adalah bertujuan untuk memberikan panduan lengkap dan tersusun mengenai semua aspek penyediaan laporan aktiviti agar pensyarah dapat menghasilkan sebuah laporan yang berkualiti di samping mengurangkan kekeliruan berhubung isi kandungan laporan tersebut. Laporan ini juga dapat dijadikan panduan dan bimbingan oleh pensyarah kepada pelajar untuk memenuhi objektif dan hasil pembelajaran yang diperlukan.

5.3 KAEDAH PELAPORAN AKTIVITI PPI

Setiap aktiviti PPI yang dilaksanakan perlu disusuli dengan satu bentuk laporan supaya ianya boleh dijadikan sebagai satu rujukan. Laporan aktiviti PPI ini juga merupakan rekod bagi semua aktiviti PPI yang boleh dijadikan bukti pelaksanaan jam interaksi yang melibatkan industri. Laporan yang baik perlu mengandungi maklumat yang holistik supaya impak PPI dapat diterjemahkan melalui pembacaan laporan. Antara ciri-ciri sebuah laporan yang baik adalah:

(i). bersifat objektif dan sahih;
(ii). mempunyai unsur penilaian, iaitu pandangan berkaitan perkara atau isu yang hendak dilaporkan;
(iii). mempunyai unsur ilmiah, empirikal dan konkrit, misalnya laporan hasil kajian;
(iv). disertakan lampiran seperti gambar, jadual atau graf; dan
(v). penggunaan gaya bahasa yang ringkas, padat dan menyeluruh.

Pelaporan dibahagikan kepada **DUA (2)** bahagian iaitu:

(i). Laporan Aktiviti PPI; dan

(ii). Laporan Pencapaian Pelaksanaan Aktiviti PPI

5.3.1 Laporan Aktiviti PPI

Laporan Aktiviti PPI merupakan ringkasan aktiviti yang mengandungi segala maklumat penting berkenaan setiap aktiviti PPI. Ianya perlu disediakan oleh pensyarah kursus atau jawatankuasa yang melaksanakan aktiviti tersebut selewat-lewatnya seminggu selepas aktiviti dilaksanakan.

Dalam Laporan Aktiviti PPI di **Lampiran 3** (item 11), perlu dimasukkan analisis daripada hasil dapatan Borang Refleksi Pelajar.

5.3.2 Laporan Pencapaian Pelaksanaan Aktiviti PPI

Laporan Pencapaian Pelaksanaan Aktiviti PPI adalah berdasarkan semua aktiviti PPI yang telah dilaksanakan. Laporan pencapaian pelaksanaan aktiviti PPI bagi sesebuah institusi perlu dilengkapkan dan dikemas kini oleh Penyelaras PPI institusi bagi setiap sukuan tahun. **Lampiran 5** adalah contoh laporan yang perlu dilengkapkan secara dalam talian.

5.4 RUMUSAN

Laporan aktiviti PPI ini diharapkan dapat menjadi rujukan dan panduan di dalam proses penambahbaikan hasil PdP. Pelaporan yang sempurna juga membuktikan bahawa sesuatu aktiviti yang telah dilaksanakan itu mencapai tujuan pelaksanaan dan memenuhi objektif serta hasil pembelajaran yang diperlukan. Tempoh penyimpanan dokumen pelaksanaan aktiviti PPI bagi tujuan audit adalah minimum selama **SATU** (1) tahun atau mengikut kepada Unit Jaminan Kualiti institusi masing-masing. Sebarang pertanyaan atau maklum balas mengenai cadangan penambahbaikan yang tidak dapat diselesaikan di peringkat institusi boleh disalurkan kepada Penyelaras PPI Institusi masing-masing untuk dipanjangkan ke peringkat JPPKK.

RUJUKAN

Agensi Kelayakan Malaysia. (2010). *Kod Amalan Akreditasi Program (Code of Practice for Programme Accreditation, COPPA).* Selangor.

Bahagian Pembangunan Akademik, Jabatan Pengajian Politeknik. (2014). *Dasar Dan Prinsip Perancangan Dan Penyampaian Kurikulum Program Pengajian*. Putrajaya.

Engineering Technology Accreditation Council, BEM. (2020). *Engineering Technician Education Programme Accreditation Standard 2020*. Selangor.

Engineering Technology Accreditation Council, BEM. (2020). *Engineering Technology Programme Accreditation Standard 2020*. Selangor.

Jabatan Pendidikan Politeknik dan Kolej Komuniti. (2021). *Penetapan Kadar dan Perolehan Perkhidmatan Kepakaran Daripada Kalangan Bukan Pegawai Awam Dalam Program Rasmi Kerajaan bagi JPPKK*. Putrajaya.

Kementerian Kewangan Malaysia. (2021). *Penetapan Kadar dan Perolehan Perkhidmatan Kepakaran Daripada Kalangan Bukan Pegawai Awam Dalam Program Rasmi Kerajaan (Kuat Kuasa Pada 15 Januari 2021) (**WP10.9**)*. Putrajaya. Perbendaharaan Malaysia.

Kementerian Kewangan Malaysia. (2013). *Penjenisan Kod Bagi Hasil Dan Perbelanjaan (PS1.1)*. Putrajaya. Perbendaharaan Malaysia.

Kementerian Kewangan Malaysia. (2013). *Peraturan Mengenai Kadar-Kadar Dan Syarat-Syarat Bayaran Saguhati Kepada Pensyarah/Penceramah Dan Fasilitator Sambilan (**WP1.8**)*. Putrajaya. Perbendaharaan Malaysia.

Kementerian Pendidikan Malaysia. (2015). *Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Pendidikan Tinggi)*. Putrajaya.

Majumdar, S. (2008). Emerging Trends, Issues and Challenges in TVET in the Asia & Pacific Region and CPSC Response. *Proceedings of the International Round Table on Changing World of Work: The return of TVET to the International Development Agenda Organized by UNESCO – UNEVOC in collaboration with InWent (Germany) & CPSC.* Bonn, Germany, 27-28 August 2008.

Malaysia Board of Technologist. (2019). *Technology and Technical Accreditation Manual 2019 (TTAC)*. Putrajaya.

United Nations Educational, Scientific and Cultural Organization. (2001). *Revised Recommendation concerning Technical and Vocational Education*. (dalam talian). Februari 2016, http://unesdoc.unesco.org/images/0012/001260/126050e.pdf

LAMPIRAN

BPPPIPOLYCC EDISI 2022

(muka surat ini sengaja dikosongkan)

BORANG PERANCANGAN PELAKSANAAN PENSYARAH PELAWAT INDUSTRI (PPI) POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK / KOLEJ KOMUNITI : ***(NAMA INSTITUSI)***
TAHUN : ***TAHUN SEMASA***

BIL.	JABATAN/ UNIT *(Contoh : JKA*)*	KOD PROGRAM *(Contoh : DKA**)*	NAMA AKTIVITI YANG DIRANCANG	KAEDAH PELAKSANAAN AKTIVITI	OUTCOME / OBJEKTIF	SASARAN JUMLAH JAM INTERAKSI	ANGGARAN KOS (RM)						CADANGAN PELAKSANAAN (Tandakan /)	
							OS24	OS25	OS26	OS29	OS42	JUMLAH	SESI 1	SESI 2
1.	JKA	DKA	Pengenalan kepada Teknologi IBS	Webinar / Lawatan	Pendedahan pelajar kepada industri IBS	4				1000	500	1500	/	
2.														
3.														

** JKA – Jabatan Kejuruteraan Awam (Kosongkan jika tidak berkaitan)*

*** DKA – Diploma Kejuruteraan Awam*

Disediakan oleh:

.....
Nama :
Tarikh :

Disahkan oleh:

.....
Nama :
Tarikh :

Nota:

- Mohon pegawai yang menyediakan dokumen ini untuk mengumpulkan keseluruhan maklumat dari jabatan akademik / unit yang terlibat sebelum dikemukakan ke JPPKK
- Dokumen ini perlu dikemukakan ke JPPKK mengikut ketetapan yang ditetapkan oleh JPPKK secara dalam talian
- Anggaran kos tidak hanya tertakluk kepada peruntukan yang diturunkan
- Pegawai yang menyediakan perancangan adalah Penyelaras Pensyarah Pelawat Industri (PPI) Institusi. Pegawai yang mengesahkan dokumen adalah Timbalan Pengarah (Akademik)/ Timbalan Pengarah.

BPPPIPOLYCC EDISI 2022

BORANG PERANCANGAN PELAKSANAAN PENSYARAH PELAWAT INDUSTRI (PPI) PERINGKAT JABATAN/UNIT

JABATAN/UNIT : ***(NAMA JABATAN/UNIT)***
TAHUN : ***TAHUN SEMASA***

BIL.	JABATAN /UNIT *(Contoh : JKA*)*	KOD PROGRAM *(Contoh : DKA**)*	NAMA AKTIVITI YANG DIRANCANG	KAEDAH PELAKSANAAN AKTIVITI	OUTCOME / OBJEKTIF	SASARAN JUMLAH JAM INTERAKSI	ANGGARAN KOS (RM)						CADANGAN PELAKSANAAN (Tandakan /)	
							OS24	OS25	OS26	OS29	OS42	JUMLAH	SESI 1	SESI 2
1.	JKA	DKA	Pengenalan kepada Teknologi IBS	Webinar / Lawatan	Pendedahan pelajar kepada industri IBS	4				1000	500	1500	/	
2.														
3.														

** JKA – Jabatan Kejuruteraan Awam (Kosongkan jika tidak berkaitan)* *** DKA – Diploma Kejuruteraan Awam*

Disediakan oleh:

.....
Nama :
Tarikh :

Disahkan oleh:

.....
Nama :
Tarikh :

Nota:

- Mohon pegawai yang menyediakan dokumen ini untuk mengumpulkan keseluruhan maklumat dari jabatan akademik yang terlibat sebelum dikemukakan kepada PPPI institusi
- Dokumen ini perlu dikemukakan ke PPPI institusi mengikut ketetapan oleh PPPI institusi secara dalam talian
- Anggaran kos tidak hanya tertakluk kepada peruntukan yang diturunkan
- Pegawai yang menyediakan perancangan adalah Penyelaras PPI Jabatan/Ketua Program, disah oleh Ketua Jabatan/Ketua Unit/Ketua Program

BPPPIPOLYCC EDISI 2022

PENGESAHAN INDUSTRI

(Dilengkapkan oleh industri yang tidak mempunyai sebarang surat setuju terima)

SURAT PENGESAHAN PENERIMAAN/PERSETUJUAN DARI INDUSTRI

ALAMAT
INSTITUSI
(u.p: _____)

Tuan,

PENGESAHAN PENERIMAAN / PERSETUJUAN SEBAGAI PENSYARAH PELAWAT INDUSTRI (PPI)

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Adalah dengan ini disahkan bahawa saya menerima dan bersetuju untuk menyumbangkan kepakaran dalam pelaksanaan PdP merangkumi perancangan, penyampaian dan penilaian PdP seperti butiran yang telah ditetapkan oleh pihak tuan:

Nama aktiviti	:
Tarikh	:
Tempat	:
Masa	:

Sekian, terima kasih.

……..
( )

Jawatan:
E-mel:

*Cop Rasmi Organisasi **(WAJIB)***

LAPORAN AKTIVITI PENSYARAH PELAWAT INDUSTRI (PPI)

*(Dilengkapkan oleh pensyarah dalam tempoh **SATU** (1)minggu selepas tamat aktiviti)*

1. MAKLUMAT UMUM

JABATAN	
PROGRAM	
JUMLAH JAM INTERAKSI PPI (A + B)	
KURSUS BIDANG PENGAJIAN (A)	
KURSUS WAJIB (B)	
KOD KURSUS / NAMA KURSUS	

2. NAMA AKTIVITI PPI

3. KAEDAH PELAKSANAAN

(Sila nyatakan tarikh muat naik video sekiranya kaedah pelaksanaan adalah berbentuk rakaman)

4. LATAR BELAKANG/RASIONAL

(Ringkasan aktiviti merangkumi keperluan untuk pelaksanaan aktiviti)

5. OBJEKTIF/*OUTCOME*

(Hasil yang diharapkan setelah tamatnya aktiviti. Ianya perlulah tepat, boleh diukur, boleh capai, realistik dan tempoh yang sesuai)

6. BUTIRAN AKTIVITI

Tarikh	
Hari	
Tentatif	
Jumlah Jam Interaksi PPI	
Tempat	
Anjuran	

7. BUTIRAN PPI

Nama Penceramah	
Jawatan	
Badan Pengiktirafan Professional	
Nama Jabatan/Institusi/Firma/Industri	
Alamat	
No Telefon	
E-mel	

8. KOS

(Kos yang telah dibelanjakan sepanjang aktiviti melibatkan peruntukan dari ABM)

PECAHAN	PERKARA	JUMLAH (RM)
OS24 SEWAAN		
OS25 BAHAN MAKANAN		
OS26 BAHAN MENTAH		
OS29 PERKHIDMATAN		
OS42 AKTIVITI PELAJAR		
Lain-lain Sila nyatakan:		

9. RUMUSAN PELAKSANAAN AKTIVITI DAN PENCAPAIAN TERHADAP OBJEKTIF/ OUTCOME

10. CADANGAN PENAMBAHBAIKAN KUALITI BERTERUSAN (CQI)/AMALAN BAIK/ISU/CABARAN

(Isu dan cabaran haruslah merupakan isu yang perlu diselesaikan di peringkat JPPKK atau lebih tinggi. Sekiranya terdapat sebarang isu yang boleh diselesaikan di peringkat politeknik maka tidak perlu dinyatakan di sini)

11. ANALISIS REFLEKSI PELAJAR

(Maklum balas yang berkaitan haruslah merupakan rumusan dari Lampiran 4: Refleksi Pelajar)
(Peratusan dapatan pada Perkara 3 di Bahagian A, Bahagian B, Bahagian C, Bahagian D, rumusan pandangan pelajar dan cadangan penambahbaikan pelajar)

12. LAMPIRAN (BUKTI)

(a) Kertas Cadangan / Kertas Kerja Pelaksanaan Program;

(b) Lampiran poster/ surat hebahan/ makluman hebahan khas bagi webinar/ rakaman webinar (jika berkaitan);

(c) Surat penerimaan / persetujuan dari industri berkaitan atau dokumen bukti pembayaran kepada PPI yang menggunakan peruntukan dari OS29000. Sekiranya kedua-dua dokumen itu tiada, institusi perlu menyediakan dokumen berdasarkan Lampiran 2. (jika berkaitan);

(d) Senarai kehadiran peserta;

(e) Gambar aktiviti beserta penerangan; dan

(f) **Tiga (3)** salinan Refleksi Pelajar (Lampiran 4)

Disediakan oleh:	Disahkan oleh:
.....	.....
Nama :	Nama :
Cop :	Cop :
Tarikh :	Tarikh :

Nota:

- Pegawai yang menyediakan laporan ini merupakan pegawai yang terlibat secara langsung dalam pelaksanaan aktiviti yang dilaporkan.
- Pegawai yang mengesahkan dokumen terdiri dari Pengarah/Timbalan Pengarah (Akademik)/Timbalan Pengarah/Ketua Jabatan/Ketua Program.
- Dokumen ini perlu disimpan oleh Ketua Program / Penyelaras PPI Jabatan / Penyelaras PPI Institusi dan akan digunakan sewaktu lawatan audit berkaitan.
- Jika aktiviti yang dibuat merentasi program/jabatan/ institusi, memadai hanya **SATU** (1) laporan dibuat dan salinan wajib disimpan oleh semua yang terlibat.

CONTOH LAPORAN AKTIVITI PENSYARAH PELAWAT INDUSTRI (PPI)

*(Dilengkapkan oleh pensyarah dalam tempoh **SATU** (1) minggu selepas tamat aktiviti)*

MAKLUMAT UMUM

JABATAN	**JTMK**
PROGRAM	**DDT**
JUMLAH JAM INTERAKSI PPI (A + B)	**4**
KURSUS BIDANG PENGAJIAN (A)	**4**
KURSUS WAJIB (B)	**-**
KOD KURSUS / NAMA KURSUS	**DFC2083 / Database Design**

NAMA AKTIVITI PPI

Lawatan Akademik Ke Xybase Sdn. Bhd, Petaling Jaya.

KAEDAH PELAKSANAAN

(Sila nyatakan tarikh muat naik video sekiranya kaedah pelaksanaan adalah berbentuk rakaman)

Pembelajaran Berasaskan Pengalaman di Industri

LATAR BELAKANG/RASIONAL

(Ringkasan aktiviti merangkumi keperluan untuk pelaksanaan aktiviti)

Lawatan diadakan untuk mendapatkan gambaran jelas berkenaan kerja-kerja merekabentuk, membangun dan menyelenggara pangkalan data.

OBJEKTIF/*OUTCOME*

(Hasil yang diharapkan setelah tamatnya aktiviti. Ianya perlulah tepat, boleh diukur, boleh capai, realistik dan tempoh yang sesuai)

(i). Meningkatkan pengetahuan pelajar dalam membangunkan pangkalan data sebenar di industri.
(ii). Mendapatkan pengalaman sebenar kerja-kerja yang terlibat dalam pengurusan penyenggaraan pangkalan data.
(iii). Meningkatkan jam interaksi PPI bagi Politeknik.

BUTIRAN AKTIVITI

Tarikh	**14 Oktober 2021**
Hari	**Khamis**
Tentatif	**07:00 pg : Berkumpul di Bangunan HEP** **07:30 – 10:30 pg : Perjalanan ke lokasi lawatan** **10:30 – 11:30 pg : Sesi taklimat oleh industri** **11:30 – 01:30 ptg : Lawatan tapak diketuai Pengurus Pangkalan Data** **02:30 – 03.30 ptg : Sesi soal jawab bersama industri** **03.30 ptg : Penutup dan pulang ke politeknik**
Jumlah Jam Interaksi PPI	**4 jam**
Tempat	**Xvbase Sdn. Bhd.** **B, Plaza Glomac, 6, jalan SS7/19, Kelana Jaya, 47301 Petaling Jaya, Selangor**
Anjuran	**JTMK, PSIS**

BUTIRAN PPI

Nama Pegawai	**Ts. A. Rahman bin Abdullah**
Jawatan	**Senior Database Engineer**
Badan Pengiktirafan Professional	**MBOT**
Nama Jabatan/Institusi/Firma/Industri	**Xybase Sdn Bhd**
Alamat	**B, Plaza Glomac,, 6, jalan SS7/19, Kelana Jaya,, 47301 Petaling Jaya, Selangor**
No Telefon	**03-88002200**
E-mel	**rahman@xybase.com.my**

KOS

(Kos yang telah dibelanjakan sepanjang aktiviti melibatkan peruntukan dari ABM)

PECAHAN	PERKARA	JUMLAH (RM)
OS24 SEWAAN	**Tiada**	
OS25 BAHAN MAKANAN	**Tiada**	
OS26 BAHAN MENTAH	**Tiada**	
OS29 PERKHIDMATAN	**Honorarium Penceramah**	**800.00**
OS42 AKTIVITI PELAJAR	**Makanan pelajar**	**450.00**
Lain-lain Sila nyatakan:		
JUMLAH		**1,250.00**

RUMUSAN PELAKSANAAN AKTIVITI DAN PENCAPAIAN TERHADAP OBJEKTIF/ OUTCOME

- **Meningkatkan jumlah jam interaksi PPI dalam pelaksanaan PdP kepada pelajar seperti disasarkan di dalam Pelan Tindakan 2021 Politeknik.**
- **Pelajar dapat gambaran yang lebih jelas kerja-kerja merekabentuk, membangun dan menyenggara pangkalan data sebuah sistem sebelum diserahkan kepada *client* syarikat.**
- **Pelajar dapat mengaitkan teori yang dipelajari di dalam kelas dengan praktikal di industri**

CADANGAN PENAMBAHBAIKAN KUALITI BERTERUSAN (CQI)/AMALAN BAIK/ISU/CABARAN

(Isu dan cabaran haruslah merupakan isu yang perlu diselesaikan di peringkat JPPKK atau lebih tinggi. Sekiranya terdapat sebarang isu yang boleh diselesaikan di peringkat politeknik maka tidak perlu dinyatakan di sini)

- **Peruntukan kewangan untuk menampung perbelanjaan pelajar.**
- **Lawatan diadakan dalam kumpulan yang lebih kecil untuk mendapatkan fokus yang lebih berkesan.**

ANALISIS REFLEKSI PELAJAR

(Maklum balas yang berkaitan haruslah merupakan rumusan dari Lampiran 4: Refleksi Pelajar)
(Peratusan dapatan pada Perkara 3 di Bahagian A, Bahagian B, Bahagian C, Bahagian D, rumusan pandangan pelajar dan cadangan penambahbaikan pelajar)

- ***Rumusan Refleksi Pelajar***
- ***Peratusan bahagian A, B, C dan D***
- ***Rumusan pandangan dan cadangan penambahbaikan pelajar***

LAMPIRAN (BUKTI)

(a) Kertas Cadangan / Kertas Kerja Pelaksanaan Program;

(b) Lampiran poster/ surat hebahan/ makluman hebahan khas bagi webinar/ rakaman webinar (jika berkaitan);

(c) Surat penerimaan / persetujuan dari industri berkaitan atau dokumen bukti pembayaran kepada PPI yang menggunakan peruntukan dari OS29000. Sekiranya kedua-dua dokumen itu tiada, institusi perlu menyediakan dokumen berdasarkan Lampiran 2. (jika berkaitan);

(d) Senarai kehadiran peserta;

(e) Gambar aktiviti beserta penerangan; dan

(f) **Tiga (3)** salinan Refleksi Pelajar (Lampiran 4)

Disediakan oleh:

.....

Nama : UMMU KALSOM BINTI A. LATIFF
Pensyarah

Cop : Jabatan Teknologi Maklumat dan Komunikasi
Politeknik Sultan Idris Shah

Tarikh : 18 Oktober 2021

Disahkan oleh:

.....

Nama : Ts NIZAM BIN MOHD NASIR
Timbalan Pengarah Akademik

Cop : Politeknik Sultan Idris Shah
Kementerian Pengajian Tinggi

Tarikh : 18 Oktober 2021

Nota:

- Pegawai yang menyediakan laporan ini merupakan pegawai yang terlibat secara langsung dalam pelaksanaan aktiviti yang dilaporkan.
- Pegawai yang mengesahkan dokumen terdiri dari Pengarah/Timbalan Pengarah (Akademik)/Timbalan Pengarah/Ketua Jabatan/Ketua Program.
- Dokumen ini perlu disimpan oleh Ketua Program / Penyelaras PPI Jabatan / Penyelaras PPI Institusi dan akan digunakan sewaktu lawatan audit berkaitan.
- Jika aktiviti yang dibuat merentasi program/jabatan/ institusi, memadai hanya **SATU** (1) laporan dibuat dan salinan wajib disimpan oleh semua yang terlibat.

REFLEKSI PELAJAR

(Dilengkapkan oleh pelajar dalam tempoh SATU minggu selepas tamat aktiviti)

1. Aktiviti yang saya ikuti ini ialah:

(Nama aktiviti)

2. Di akhir sesi aktiviti ini, saya seharusnya …

(Objektif)

3. Setelah mengikuti aktiviti ini, saya …

(Hasil pembelajaran dan pengalaman yang telah diperolehi selesai mengikuti aktiviti ini)

1: Lemah 2: Sederhana 3: Baik 4: Sangat Baik

BAHAGIAN A: AKADEMIK

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	meningkatkan pengetahuan berkaitan dengan tajuk				
2.	membuat perkaitan dengan bidang kursus yang diikuti				
3.	memahami hubungkait di antara pembelajaran teori dan amali				

BAHAGIAN B: EKSPLORASI

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	berkeyakinan dalam memberi pendapat				
2.	berkongsi idea secara terbuka				
3.	meningkatkan keinginan untuk meneroka bidang yang dipelajari				

BAHAGIAN C: PERSONALITI

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	meningkatkan motivasi diri dan kebolehan berfikir secara kreatif				
2.	membantu diri menjadi lebih peka / fokus dan produktif terhadap bidang yang dipelajari				
3.	memahami tanggungjawab yang perlu dipraktikkan				

BAHAGIAN D: KETERKAITAN/*CONNECTIVITY*

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	mempamerkan kemahiran berinteraksi dengan pihak industri				
2.	memahami kepentingan hubungan dengan pihak industri				
3.	menyediakan diri untuk melangkah ke alam pekerjaan				

4. Pada masa akan datang saya ingin mencadangkan kepada pensyarah agar …

(Ruang penambahbaikan/keperluan bagi meningkatkan pengetahuan dan kemahiran)

5. Secara keseluruhannya saya berpandangan …

(Apa-apa sahaja pandangan pelajar)

Nota:

- **WAJIB** diisi oleh setiap pelajar dan disimpan oleh Penyelaras PPI Jabatan bagi Politeknik atau Penyelaras PPI Institusi bagi Kolej Komuniti
- Laporan ini sebaiknya disediakan secara dalam talian melalui aplikasi yang bersesuaian. Ianya perlu disemak oleh pensyarah yang menganjurkan aktiviti ini/atau mana-mana pensyarah lain yang dilantik.
- Laporan ini juga boleh digunakan oleh pensyarah bagi penyediaan maklum balas dan penambahbaikan untuk Pelaporan Aktiviti PPI (Rujuk Perkara 11 Lampiran 3).

CONTOH REFLEKSI PELAJAR

(Dilengkapkan oleh pelajar dalam tempoh satu minggu selepas tamat aktiviti)

1. Aktiviti yang saya ikuti ini ialah:

(Nama aktiviti)

Lawatan Akademik Ke Xybase Sdn. Bhd, Petaling Jaya.

2. Di akhir sesi aktiviti ini, saya seharusnya …

(Objektif)

(i). Meningkatkan pengetahuan pelajar dalam merekabentuk, membangun dan menyenggara pangkalan data sistem.

(ii). Mendapatkan pengalaman sebenar di industri kerja-kerja yang terlibat dalam pengurusan pangkalan data.

3. Setelah mengikuti aktiviti ini, saya …

(Hasil pembelajaran dan pengalaman yang telah diperolehi selesai mengikuti aktiviti ini)

1: Lemah 2: Sederhana 3: Baik 4: Sangat Baik

BAHAGIAN 1: AKADEMIK

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	meningkatkan pengetahuan berkaitan dengan tajuk	/			
2.	membuat perkaitan dengan bidang kursus yang diikuti	/			
3.	memahami hubungkait di antara pembelajaran teori dan amali	/			

BAHAGIAN 2: EKSPLORASI

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	berkeyakinan dalam memberi pendapat	/			
2.	berkongsi idea secara terbuka	/			
3.	meningkatkan keinginan untuk meneroka bidang yang dipelajari	/			

BAHAGIAN 3: PERSONALITI

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	meningkatkan motivasi diri dan kebolehan berfikir secara kreatif	/			
2.	membantu diri menjadi lebih peka / fokus dan produktif terhadap bidang yang dipelajari	/			
3.	memahami tanggungjawab yang perlu dipraktikkan	/			

BAHAGIAN 4: KETERKAITAN/*CONNECTIVITY*

Setelah mengikuti aktiviti ini, saya dapat:

BIL.	PERKARA	PETUNJUK			
		4	3	2	1
1.	mempamerkan kemahiran berinteraksi dengan pihak industri	/			
2.	memahami kepentingan hubungan dengan pihak industri	/			
3.	menyediakan diri untuk melangkah ke alam pekerjaan	/			

6. Pada masa akan datang saya ingin mencadangkan kepada pensyarah agar …

(Ruang penambahbaikan/keperluan bagi meningkatkan pengetahuan dan kemahiran)

(i). Penambahan peruntukan kewangan untuk menampung perbelanjaan pelajar.
(ii). Lawatan diadakan dalam kumpulan yang lebih kecil untuk mendapatkan fokus yang lebih berkesan.

7. Secara keseluruhannya saya berpandangan …

(Apa-apa sahaja pandangan pelajar)

Lawatan ini membuka mata saya tentang *software* yang digunapakai di industri masa kini

Nota:

- **WAJIB** diisi oleh setiap pelajar dan disimpan oleh Penyelaras PPI Jabatan bagi Politeknik atau Penyelaras PPI Institusi bagi Kolej Komuniti
- Laporan ini sebaiknya disediakan secara dalam talian melalui aplikasi yang bersesuaian. Ianya perlu disemak oleh pensyarah yang menganjurkan aktiviti ini/atau mana-mana pensyarah lain yang dilantik.
- Laporan ini juga boleh digunakan oleh pensyarah bagi penyediaan maklum balas dan penambahbaikan untuk Pelaporan Aktiviti PPI (Rujuk Perkara 11 Lampiran 3).

(muka surat ini sengaja dikosongkan)

CONTOH LAPORAN PENCAPAIAN PELAKSANAAN AKTIVITI PPI

Laporan Pencapaian Aktiviti Pensyarah Pelawat Industri
(PPI)
Politeknik Malaysia dan Kolej Komuniti

Tahun 2021

Sasaran Jumlah Jam Interaksi: **30 Jam**
Purata Pencapaian Keseluruhan: **98.23%**
Jumlah Peruntukan EKK: **MYR629,000.00**
Jumlah Perbelanjaan EKK: **MYR601,355.86**
Baki Peruntukan EKK: **MYR27,644.14**
Purata Pengunaan EKK: **96.94%**

Bil	Institusi	Jumlah Program	Peruntukan EKK (MYR)	Pencapaian Sasaran Jumlah Jam Interaksi (%)	Capai Sasaran?	Perbelanjaan EKK (MYR)	Baki Peruntukan EKK (MYR)	Peratusan Penggunaan EKK (%)
1	PUO - POLITEKNIK UNGKU OMAR	19	38000.00	100.00	CAPAI	38000.00	0.00	100.00
2	POLISAS - POLITEKNIK SULTAN HAJI AHMAD SHAH	14	28000.00	100.00	CAPAI	18420.00	9580.00	65.79
3	POLIMAS - POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH	15	30000.00	100.00	CAPAI	29750.00	250.00	99.17
4	PKB - POLITEKNIK KOTA BHARU	13	26000.00	92.31	TIDAK CAPAI	26000.00	0.00	100.00
5	PKS - POLITEKNIK KUCHING SARAWAK	13	26000.00	100.00	CAPAI	22410.00	3590.00	86.19
6	PPD - POLITEKNIK PORT DICKSON	14	28000.00	100.00	CAPAI	28000.00	0.00	100.00
7	PKK - POLITEKNIK KOTA KINABALU	14	28000.00	100.00	CAPAI	18420.00	9580.00	65.79
8	PSA - POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH	14	28000.00	100.00	CAPAI	28000.00	0.00	100.00

BPPPIPOLYCC EDISI 2022

PENGHARGAAN

BPPPIPOLYCC EDISI 2022

AHLI JAWATANKUASA PENULISAN

PENAUNG:

En. Mohd Noor bin Shahudin
Pengarah Kanan (Akademik)
Jabatan Pendidikan Politeknik dan Kolej Komuniti

PENASIHAT:

Dr. Zainal Azhar bin Zainal Abidin
Pengarah
Bahagian Instruksional dan Pembelajaran Digital
dan
En. Noor Azizan bin Itam (Mantan Pengarah)

PENGERUSI:

Dr. Siti Noridah binti Ali
Bahagian Instruksional dan Pembelajaran Digital

TIMBALAN PENGERUSI:

Pn. Ummu Kalsom binti A. Latiff
Bahagian Instruksional dan Pembelajaran Digital

PENYUNTING:

Dr. Siti Noridah binti Ali
Pn. Ummu Kalsom binti A. Latiff
Bahagian Instruksional dan Pembelajaran Digital

PEREKA KULIT BUKU:

Pn. Ummu Kalsom binti A. Latiff
Bahagian Instruksional dan Pembelajaran Digital

PENULIS:

BAB 1: KONSEP

Pn. Sharmilla binti Sulong (PKT)
En. Mohd Razali bin Hasam (PMM)

BAB 2: PERANCANGAN

Pn. Sharifah Aznee binti Said Ali @ Syed Ali (PPD)
Pn. Norliza binti Ab Halim (KK Kuala Kangsar)
En. Wan Khairul Arifin bin Wan Zakaria (PTSB)

BAB 3: PELAKSANAAN AKTIVITI

Pn. Nur Syuhada binti Mohamad Rodzi (PBU)
Pn. Sharifah Nor Azimah binti Wan Mohamad (KKSY)
En. Khairul Azha bin Ahmad (PPD)

BAB 4: KAEDAH PENGIRAAN

En. Sazali bin Husin (PMU)
Pn. Nurul Hananie binti Mazlan (BPN)
Pn. Nurizan binti Tahir (BGK)

BAB 5: PELAPORAN & PENAMBAHBAIKAN

Pn. Saidatul Nizan binti Nasroddin (PMJ)
En. Muhammad Adib bin Aziz (BK)

SINGKATAN, RUJUKAN & LAMPIRAN

Pn. Azura binti Haron @Makhtar (PSP)
Pn. Haslinda binti Ismail (KK Sungai Petani)
En. Ahmad Wafi bin Haji Mohd Salleh (BKIK)

Sekalung Penghargaan

Ucapan setinggi-tinggi penghargaan kepada semua pihak yang terlibat secara langsung serta semua pihak yang telah bekerjasama di dalam pembangunan Garis Panduan Pelaksanaan KPI Pensyarah Pelawat Industri (PPI) Politeknik 2013-2015 dan Buku Panduan Pelaksanaan KPI Pensyarah Pelawat Industri (PPI) Politeknik 2016-2020, Edisi 2016 serta yang terlibat dalam semakan semula Buku Panduan Pelaksanaan Aktiviti Pensyarah Pelawat Industri (PPI) Politeknik dan Kolej Komuniti Edisi 2022 ini

BPPIPOLYCC EDISI 2022

KEMENTERIAN PENGAJIAN TINGGI

Jabatan Pendidikan Politeknik dan Kolej Komuniti
Aras 4-7 Galeria PjH, Jalan P4W,
Persiaran Perdana, Presint 4,
62100 Wilayah Persekutuan Putrajaya
Tel: 03-889190000 | Faks: 03-88919300
www.mypolycc.edu.my

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KEMENTERIAN PENGAJIAN TINGGI
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Appendix C3-2i

JABATAN KEJURUTERAAN MEKANIKAL
LAPORAN PROGRAM PENSYARAH PELAWAT INDUSTRI (PPI)

BENTUK AKTIVITI (Lawatan,Webinar/Bengkel dll)	NAMA AKTIVITI	SYARIKAT / AGENSI / INSTITUSI	TAHUN	KATEGORI
SEMIINAR	PROGRAM TOWARDS 1ST CLASS	TMSB TRAINING & CONSULTANCY SDN. BHD.	2023	IR4.0
SEMINAR	BENGEKL DESIGN THINKING AND INNOVATIVE PROJECT SESI 1:2023/2024	FYP ZULL DESIGN	2023	IR4.0
SEMINAR	BENGKEL DESIGN THINKING SESI 1	ZULL DESIGN AUTOTRONIC	2023	IR4.0
SEMINAR	PROGRAM PACKAGING TRENDS & INDUSTRIAL MANAGEMENT	HZS DYNAMIC SDN. BHD.	2024	TIDAK
SEMINAR	SUSTAINABILITY IN ENGINEERING : COMBINING ENVIRONMENTAL RESPONSIBILITY	UEM EDGENTA BERHAD	2024	TIDAK
SEMINAR	BENGKEL 3D PRINTING	TECHSTAMP ENGINEERING SDN. BHD.	2024	IR4.0
SEMINAR	BENGKEL FINAL YEAR PROJECT TOWARD INDUSTRIAL DEMANDS SESI II 2023/2024	IDEAS CAD TECHNOLOGY	2024	IR4.0
SEMINAR	SEMINAR PENGENALAN KEPADA TEKNOLOGI ELEKTRIK	TNB ENERGY SERVICES	2024	TIDAK
CONTEST	EKSPLORASI TEKNOLOGI PEMBUNGKUSAN BERSAMA BUROOJ STARS SDN. BHD.	BUROOJ STARS SDN. BHD.	2025	TIDAK
SEMINAR	BENGKEL REVERSE ENGINEERING & 3D PRINTING	DRAWBRIDGE TECHOLOGIES (M) SDN BHD.	2025	IR4.0
SEMINAR	BENGKEL PACKAGING DESIGN : INTRODUCTION TO GRAPHICS SOFTWARE	SIRIM PACKAGING AND SECURITY DESIGN CENTRE	2025	IR4.0
SEMINAR	TAKLIMAT PENDEDAHAN KEPADA BADAN PROFESSIONAL - BOARD OF ENGINEERS MALAYSIA (BEM)	UNIVERSITI TEKNOLOGI MARA SHAH ALAM	2025	TIDAK

MUHAMMAD FAIZ BIN ABDULLAH
Ketua Jabatan
Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz Shah

Appendix C3-2J Percentage Distribution between Continuous Assessments and Final Examination

SEM	COURSE TYPE	COURSE CODE	COURSE	CONTINUOUS ASSESSMENT	FINAL EXAMINATION
SEM 1	Compulsory	DUE10062	Technical English 1	100	0
		MPU 24031	Sukan 1	100	0
		MPU 24041	Kelab / Persatuan 1	100	0
		MPU 24XX1	Unit Beruniform 1	100	0
	Common Core	DUW10042	Occupational, Safety and Health for Engineering	100	0
		DBM10163	Engineering Mathematics 1	60	40
		DBS10042	Engineering Science	60	40
	Discipline Core	DJJ10223	Engineering Drawing	100	0
		DJJ10232	Mechanical Workshop Practice 1	100	0
		DJJ10243	Workshop Technology	50	50
SEM 2	Compulsory	MPU21072	Penghayatan Etika dan Peradaban	100	0
		MPU 24051	Sukan 2	100	0
		MPU 24061	Kelab / Persatuan 2	100	0
		MPU 24XX1	Unit Beruniform 2	100	0
		MPU22071	Integriti dan Anti-Rasuah	100	0
	Common Core	DBM20173	Engineering Mathematics 2	60	40
	Discipline Core	DJJ20252	Mechanical Workshop Practice 2	100	0
		DJJ20263	Electrical and Electronic Technology	50	50
		DJJ20273	Fluid Mechanics	50	50
		DJJ20282	Computer Aided Design	100	0
SEM 3	Compulsory	DUE30072	Technical English 2	100	0
	Common Core	DBM30183	Engineering Mathematics 3	60	40
		DJJ30332	Engineering and Society	100	0
	Discipline Core	DJJ30302	Mechanical Workshop Practice 3	100	0
		DJJ30313	Engineering Mechanics	50	50
		DJJ30323	Strength of Materials	50	50
		DJJ30293	Thermodynamics	50	50
SEM 4	Discipline Core	DJJ40343	Material Science and Engineering	50	50
		DJJ40373	Pneumatic and Hydraulics	50	50
		DJJ40383	Engineering Design	100	0
		DJJ40363	Mechanics of Machines	50	50
		DJJ40392	Project 1	100	0
	Electives	DJJXXXX	Elective		
SEM 5	Compulsory	MPU23182	Sains Teknologi dan Kejuruteraan Islam*	100	0
		MPU23172	Nilai Masyarakat Malaysia**	100	0
		DUE50082	Technical English 3	100	0
	Common Core	MPU22062	Entrepreneurship	100	0
	Discipline Core	DJJ50403	Project 2	100	0
		DJJ50413	Troubleshooting and Maintenance for Mechanical Components	100	0
		DJJ50422	Maintenance Engineering and Management	100	0
SEM 6	Industrial Training	DUT600910	Engineering Industrial Training	100	0

Appendix 3C-2K: Example of Assessment Specification Table for DJJ 20273 Fluid Mechanics

CLO	PLO	DT	PROPOSED TEACHING & LEARNING ACTIVITIES	CONTINUOUS ASSESSMENT WEIGHTAGE (%)				FINAL ASSESSMENT WEIGHTAGE (%)	SLT (hours)	PROPOSED TOPIC
				Quiz	Test	Practical Task	Assignment	Final Examination		
				(1) 5%	(1) 10%	(4) 25%	(1) 10%	(1) 50%		
CLO1 : Explain the fundamental properties of fluids in relation to fluid mechanics	1	C2	Interactive Lecture	•					11.5	T1
			Interactive Lecture					•		T1
CLO2 : Apply fundamental knowledge of fluid mechanics in mechanical engineering applications	1	C3	Interactive Lecture		•				78.5	T3-T4
			Discussion				•			T1-T2
			Interactive Lecture					•		T1-T4
CLO3 : Organize appropritate experiments in groups according to the standard operating procedure	5	P4	Demonstration			•			30.0	T1-T4
								TOTAL SLT:	120.0	

Notes:

DT : DOMAIN TAXONOMY
/ : OR (Optional topic(s) for assessment
- : UNTIL (All topics from the range MUST be assessed)
, : AND (Topics listed MUST be assessed)
(#) : NUMBER OF ASSESSMENT
% : WEIGHTAGE OF ASSESSMENT IN PERCENTAGE
• : TYPE OF ASSESSMENT BASED ON TOPIC(S) TO ACHIEVE CLO

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
COURSEWORK ITEM SPECIFICATION TABLE (CIST)
COGNITIVE DOMAIN

Department : JABATAN KEJURUTERAAN MEKANIKAL	Course Code : DJJ30293	Course Name:THERMODYNAMICS

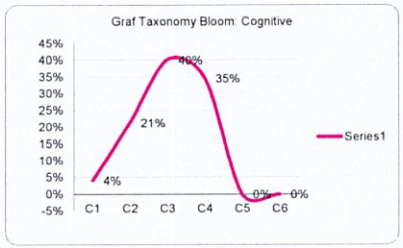
COURSE LEARNING OUTCOME (CLO)

Upon completion of this course, students should be able to:-

1 apply the fundamentals concept and properties of pure substances in thermodynamics. (C3, PLO1)
2 analyze the thermodynamics systems using the laws of thermodynamics.(C3,PLO2)
3 organize appropriately experiments according to the Standard Operating Procedures. (P4, PLO5)

ASSESSMENT TASKS	CLO			DK	DP	TOPIC	COGNITIVE LEVEL & MARKS DISTRIBUTION												Total Marks (%)	CONSTRUCT (SS)	TYPES OF ITEM		
							C1		C2		C3		C4		C5		C6				O	S	E
	CLO1	CLO2	CLO3				#	Marks	#	Marks	#	Marks	#	Marks	#	Marks	#	Marks					
QUIZ	√			DK1,DK2, DK3,DK4	DP1,DP2, DP3	T1	1	3	1	3	1	4							10	1.1 Explain the fundamental concepts of thermodynamics.		√	
TEST		√				T3			1	5									25	3.1 Explain the concept of the first law of thermodynamics.			
											1	10								3.2 Analyze the closed system by using the first law of thermodynamics.			
													1	10						3.3 Analyze the open system by using the first law of thermodynamics.			
ASSIGNMENT		√				T2													20	2.1 Explain the properties of pure substances.			
									1	4										2.2 Apply the state of steam using the properties of pure substances.		√	
											1	8	1	8						2.3 Appy the ideal gas model to pure substances.			
						T4			1	4									20	4.1 Explain the concept of the second law of thermodynamics.			
											1	8								4.2 Analyze the heat engine and reversed heat engine.		√	
													1	8						4.3 Analyze the vapor power cycle: steam power plant.			
						TOTAL :	1	3	4	16	4	30	3	26	0	0	0	0	75				
						% :		4%		21%		40%		35%		0%		0%	100%				

C1	4%
C2	21%
C3	40%
C4	35%
C5	0%
C6	0%



Prepared by :	Checked by :	Verified by :
( )	( )	(MOHD SHARIZAN BIN MOHD SHARIF)
Course Coordinator/Course Lecturer	Head of Programme/Subject Matter Expert/Course Coordinator	Head of Department/Head of Programme/Course Leader
Date : 4/8/2025	Date : 4/8/2025	Date : 4/8/2025

DR. NORASIAH BT. MUHAMMAD
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

NOOR HAZNIDA BINTI BAKAR
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

MOHD SHARIZAN BIN MOHD SHARIF
Ketua Program Mekanikal Am
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

TERHAD

KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

JADUAL SPESIFIKASI UJIAN PEPERIKSAAN AKHIR
(*FINAL EXAM TEST SPESIFICATION TABLE*)

PROGRAM:
Program Diploma Kejuruteraan Mekanikal

POLITEKNIK PENYELARAS:
Politeknik Banting Selangor (PBS)

JABATAN AKADEMIK:
Jabatan Kejuruteraan Mekanikal

BERKUATKUASA : SESI I : 2025/2026

Bahagian Peperiksaan & Penilaian /
Unit Peperiksaan Politeknik

* Edaran dokumen JSU PA (*hardcopy* atau *softcopy*) adalah terhad kepada pensyarah politeknik sahaja. Dokumen JSU PA adalah TIDAK BOLEH diserahkan kepada pelajar.

Politeknik Penyelaras	POLITEKNIK BANTING SELANGOR (PBS)
Jabatan Akademik	JABATAN KEJURUTERAAN MEKANIKAL
Nama Program	DIPLOMA KEJURUTERAAN MEKANIKAL (DKM)
Ketua Program	NURULHUDA BINTI KHALID
Versi Kurikulum	KURIKULUM JUN 2019

Bil.	Tahap	Kod Kursus & Nama Kursus	Format Peperiksaan Akhir
1	2	DJJ20053 - ELECTRICAL TECHNOLOGY	4 Soalan STRUKTUR Jumlah Markah 100 *Jawab semua soalan
2	2	DJJ20063 - THERMODYNAMICS	
3	2	DJJ20073 - FLUID MECHANICS	
4	2	DJJ30093 - ENGINEERING MECHANICS	
5	3	DJJ30103 - STRENGTH OF MATERIALS	
6	3	DJJ30113 - MATERIAL SCIENCE AND ENGINEERING	
7	4	DJJ40153 - PNEUMATIC & HYDRAULICS	
8	4	DJJ40163 - MECHANICS OF MACHINES	
9	4	DJJ42022 - INDUSTRIAL MANAGEMENT	
10	5	DJJ52012 - ENGINEERING PLANT TECHNOLOGY	

TERHAD

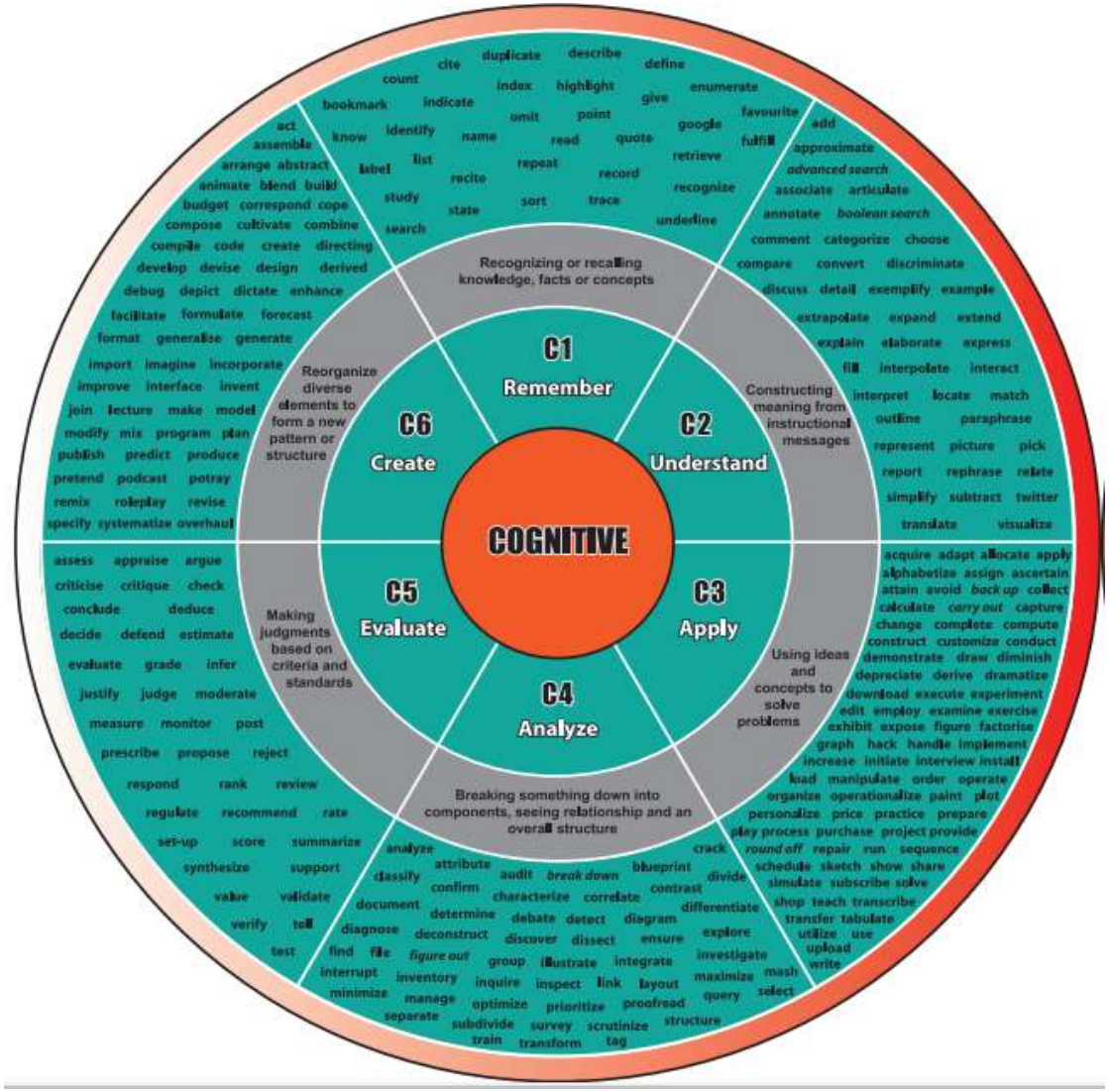
Politeknik Penyelaras	POLITEKNIK BANTING SELANGOR (PBS)
Jabatan Akademik	JABATAN KEJURUTERAAN MEKANIKAL
Nama Program	DIPLOMA KEJURUTERAAN MEKANIKAL (DKM)
Ketua Program	NURULHUDA BINTI KHALID
Versi Kurikulum	KURIKULUM SESI 1 2024/2025

Bil.	Tahap	Kod Kursus & Nama Kursus	Format Peperiksaan Akhir
1	1	DJJ10243 - WORKSHOP TECHNOLOGY	4 Soalan STRUKTUR Jumlah Markah 100 *Jawab semua soalan
2	2	DJJ20263 - ELECTRICAL AND ELECTRONIC TECHNOLOGY	
3	2	DJJ20273 - FLUID MECHANICS	
4	3	DJJ30293 - THERMODYNAMICS	
5	3	DJJ30313 - ENGINEERING MECHANICS	
6	3	DJJ30323 - STRENGTH OF MATERIALS	
7	4	DJJ40343 - MATERIAL SCIENCE AND ENGINEERING	

TERHAD

PENGAGIHAN PENGUBALAN SOALAN BAGI PROGRAM DIPLOMA KEJURUTERAAN MEKANIKAL SESI I 2025/2026 MENGIKUT POLITEKNIK

BIL	KOD KURSUS & NAMA KURSUS	POLITEKNIK YANG MENAWARKAN																	JUMLAH SET
		PSA	PBS	PIS	PNS	PUO	PSAS	PTSB	PKB	PSMZA	POLISAS	PPD	PTSS	PMK	PMM	PKS	PSP	PMU	PKK	
1	DJJ20053 - ELECTRICAL TECHNOLOGY										1	1								2
2	DJJ20063 - THERMODYNAMICS					1				1										2
3	DJJ20073 - FLUID MECHANICS						1		1											2
4	DJJ30093 - ENGINEERING MECHANICS															1		1		2
5	DJJ30103 - STRENGTH OF MATERIALS				1														1	2
6	DJJ30113 - MATERIAL SCIENCE AND ENGINEERING					1					1									2
7	DJJ40153 - PNEUMATIC & HYDRAULICS				1								1						1	3
8	DJJ40163 - MECHANICS OF MACHINES											1			1	1				3
9	DJJ42022 - INDUSTRIAL MANAGEMENT*	1		1			1						1							4
10	DJJ52012 - ENGINEERING PLANT TECHNOLOGY*																	1	1	2
11	DJJ10243 - WORKSHOP TECHNOLOGY			1		1										1				3
12	DJJ20263 - ELECTRICAL AND ELECTRONIC TECHNOLOGY	1							1					1						3
13	DJJ20273 - FLUID MECHANICS									1				1			1			3
14	DJJ30313 - ENGINEERING MECHANICS											1		1			1			3
15	DJJ30293 - THERMODYNAMICS				1			1							1					3
16	DJJ30323 - STRENGTH OF MATERIALS						1								1		1			3
17	DJJ40343 - MATERIAL SCIENCE AND ENGINEERING			1				1												2
JUMLAH SET		2	0	3	3	3	3	2	2	2	2	3	2	3	3	3	3	2	3	44



KEMENTERIAN PENDIDIKAN TINGGI

POLITEKNIK MALAYSIA

TAKSONOMI

POLITEKNIK MALAYSIA

2016

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ20053 - ELECTRICAL TECHNOLOGY
VERSI KURIKULUM	Version: 230419_2_Effective: December2020
NAMA PENYELARAS KURSUS	TS. MOHD NASIRUDDIN BIN HUSHIM
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Explain the principles and fundamental of electrical circuits, electromagnetism, transformers and electrical machine. (C2, PLO1)
CLO2 : Solve the problem related to electrical circuits, electromagnetism, transformers and electrical machine. (C3, PLO1)
CLO3 : Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**		**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	10.75	**11.50**	**07.50**	**07.00**	**06.75**	**0**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1	(a) SA	6											**25**
*CLO 2***										(b) SQ	8	(c) SQ	11							
CLO 1		/					Q2	(a) SA	6											**25**
*CLO 2***										(b) SQ	7	(c) SQ	12							
CLO 1			/				Q3	(a) SA	6											**25**
CLO 2										(b) SQ	8	(c) SQ	11							
CLO 2				/			Q4					(c) SQ	12							**25**
CLO 1					/			(a) SA	6											
CLO 2										(b) SQ	7									
JUMLAH MARKAH								C1	**24**	C2	**30**	C3	**46**	C4	**0**	C5	**0**	C6	**0**	**100**
TABURAN DOMAIN KOGNITIF								C1 - C2			**54%**	C3 - C4			**46%**	C5-C6			**0%**	**100%**

Panduan pembangunan JSU PA

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan JSU PA

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

Nota:

Topik 6 hanya melibatkan praktikal sahaja

a) Pilih salah satu(1) soalan bagi mana-mana soalan yang bertanda ** wajib melibatkan DP

b) Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Disediakan oleh:

.....

(NAMA)

Penyelaras Kursus

Ts. MOHD NASIRUDDIN BIN HUSHIM
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

.....

(NAMA)

Penyelaras Jabatan

WAN MOHD RIZAMIZ BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ20063 - THERMODYNAMICS 1
VERSI KURIKULUM	Version: 230419_3_Effective: Session_II_2022/2023
NAMA PENYELARAS KURSUS	MUHAMMAD BIN ABDULLAH
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)					
	C1	C2	C3	C4	C5	C6
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Explain fundamentals concept and properties of pure substances in thermodynamics. (C2,PLO1)
CLO2 : Apply Laws of thermodynamics and it processes. (C3,PLO1)
CLO3 : Organize appropriately experiments according to the Standard Operating Procedures. (P4,PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	TOPIK / SLT						JENIS SOALAN	DOMAIN TAKSONOMI											JUMLAH MARKAH
	T1	T2	T3	T4	T5	T6	BAHAGIAN A: STRUCTURED QUESTION (SQ)	C1		C2		C3		C4		C5		C6	
	04.00	11.50	16.50	11.00	0	0		NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	
CLO 1	/						Q1	(a) SA	6											25
CLO 2		/								(b) SQ	7	(c) SQ	12							
CLO 2			/				Q2 (non-flow)	(a) SA	4	(b) SQ	8	(c) SQ	13							25
CLO 2			/				Q3 (flow)	(a) SA	4	(b) SQ	8	(c) SQ	13							25
*CLO 2 ** *				/			Q4	(a) SA	4	(b) SQ	6	(c) SQ	15							25
					JUMLAH MARKAH			C1	**18**	C2	**29**	C3	**53**	C4	**0**	C5	**0**	C6	**0**	**100**
					TABURAN DOMAIN KOGNITIF			C1 - C2			**47%**	C3 - C4			**53%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (range) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

**** Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas**

Bagi soalan 1c,2c, 3c & 4c yang mempunyai jumlah markah yang besar,
sila pecahkan soalan kepada markah yang lebih kecil.
cth soalan 2c:
Calculate:
i) mass
ii) final pressure
iii) work done

Disediakan oleh:

.....

(NAMA)

Penyelaras Kursus

MUHAMMAD BIN ABDULLAH
KUIDM / Pensyarah
Jabatan Kej. Mekanikal
Politeknik Banting Selangor

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZAM BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Mizan Zainal Abidin

(NAMA)

Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ20073 - FLUID MECHANICS
VERSI KURIKULUM	Version: 230419_4_Effective: Session_II_2022/2023
NAMA PENYELARAS KURSUS	CHE FARIDAH BINTI CHE MOHAMAD
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)					
	C1	C2	C3	C4	C5	C6
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Explain the fundamentals of fluid. (C2, PLO1)
CLO2 : Solve problems related to fluid properties, fluid statics and fluid dynamics. (C3, PLO1)
CLO3 : Organize appropriate experiments in groups according to the standard operating procedures. (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	TOPIK / SLT						JENIS SOALAN	DOMAIN TAKSONOMI												JUMLAH MARKAH
		T2	T3	T4	T5	T6	BAHAGIAN A: STRUCTURED QUESTION (SQ)	C1		C2		C3		C4		C5		C6		
	03.50	03.25	09.25	15.50	11.50	0		NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	
CLO 1	/						Q1	(a) SA	4	(b) SQ	9									25
CLO 2		/										**(c) SQ	12							
CLO 2			/				Q2			(a) SA	6	(b) SQ	9							25
												**(c) SQ	10							
CLO 2				/			Q3			(a) SA	6	(b) SQ	9							25
												**(c) SQ	10							
CLO 2					/		Q4			(a) SA	5	(b) SQ	8							25
												**(c) SQ	12							
					JUMLAH MARKAH			C1	**4**	C2	**26**	C3	**70**	C4	**0**	C5	**0**	C6	**0**	**100**
					TABURAN DOMAIN KOGNITIF			C1 - C2			**30%**	C3 - C4			**70%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (range) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Pilih salah satu(1) soalan bagi mana-mana soalan yang bertanda ** wajib melibatkan DP

b) Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas

c) Bilangan sub soalan bagi soalan SQ -Maksimum adalah 3 (i,ii &iii)

Disediakan oleh:

(NAMA)

Penyelaras Kursus

CHE FARIDAH BINTI CHE MOHAMAD
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disemak oleh:

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZAMIL BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal

(NAMA)

Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ30093 - ENGINEERING MECHANICS
VERSI KURIKULUM	Version: 230419_2_Effective: December2020
NAMA PENYELARAS KURSUS	ROSEDHILA BINTI RAMLI
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Solve problems related to static and dynamics based on the concepts and principle of engineering mechanics. (C3, PLO1)
CLO2 : Analyze engineering related problems based on fundamentals of static and dynamics. (C4, PLO2)
CLO3 : Organize appropriately experiment in groups according to Standard Operation Procedures. (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**		**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	02.00	**07.50**	**07.00**	**08.00**	**09.00**	**09.50**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1	(a) SA	4											25
		/										(b) SQ	8							
			/							(c)(i) SQ	3									
										(c)(ii) SQ	10									
CLO 2				/			Q2					(a)(i) SQ	2							25
												(a)(ii) SQ	3							
												(a)(iii) SQ	6							
														(b)(i) SQ	1					
														(b)(ii) SQ	5					
														(b)(iii) SQ	8					
CLO 1					/		Q3	(a) SA	4	(b) SQ	8	(c) SQ	13							25
*CLO 1***						/	Q4	(a) SA	4	(b) SQ	8	(c) SQ	13							25
					JUMLAH MARKAH			C1	**12**	C2	**29**	C3	**45**	C4	**14**	C5	**0**	C6	**0**	**100**
					TABURAN DOMAIN KOGNITIF			C1 - C2			**41%**	C3 - C4			**59%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (range) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

**** Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas**

Disediakan oleh:

.....

(Rosedhila binti Ramli)

Penyelaras Kursus

ROSEDHILA BINTI RAMLI
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

.....

(NAMA)

Penyelaras Jabatan

WAN MOHD RIZAMI BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ30103 - STRENGTH OF MATERIALS
VERSI KURIKULUM	Version: 230419_5_Effective: Session_II_2024/2025
NAMA PENYELARAS KURSUS	MASFIZAIZAN BINTI MANAF
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the concepts of strength of materials to solve related problems. (C3, PLO1)
CLO2 : Analyze problems correctly related to strength of materials. (C4, PLO2)
CLO3 : Organize appropriate experiments in groups according to the Standard Operating Procedures (SOP). (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**		**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	07.00	**10.00**	**07.00**	**07.00**	**04.00**	**08.00**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1			(a) SA	6									**25**
		/										(b) SQ	9							
												(c) SQ	10							
*CLO 1***			/				Q2					(b) SQ	8							**25**
										(a) SA	6	(c) SQ	11							
CLO 2				/			Q3	(a) SA	5			(b) SQ	12							**25**
					/									(c) SQ	8					
CLO 2						/	Q4	(a) SA	5	(b) SQ	8	(c) SQ	12							**25**
					JUMLAH MARKAH			C1	**10**	C2	**20**	C3	**62**	C4	**8**	C5	**0**	C6	**0**	**100**
					TABURAN DOMAIN KOGNITIF			C1 - C2			**30%**	C3 - C4			**70%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (range) tahap kognitif yang ditetapkan (+/- 1 Markah)

CATATAN:

**** Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas**

Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
	Multiple Choise Question	
SA	Soalan Pendek	Item yang memerlukan penerangan yang ringkas dan padat.
	Short Answer	
SQ	Soalan Berstruktur	Item yang disusun secara rangkaian.
	Stuctured Question	
ES	Esei	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.
	Essay	

Disediakan oleh:

(NAMA : MASFIZAIZAN BINTI MANAF)

Penyelaras Kursus

PENSYARAH
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK BANTING SELANGOR

Disemak oleh:

(NAMA :)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZAMIL BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
(NAMA : Jabatan Kejuruteraan Mekanikal)

Penyelaras Jabatan

Ketua Jabatan Mizan Zainal Abidin

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ30113 - MATERIAL SCIENCE AND ENGINEERING
VERSI KURIKULUM	Version: 230419_3_Effective: Session_II_2023/2024
NAMA PENYELARAS KURSUS	TS. DR. TAMIL MOLI A/P LOGANATHAN
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment. (C3, PLO1)
CLO2 : Performed appropriate material testing according to the Standard Operating Procedures. (P4, PLO5)
CLO3 : Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session. (A3, PLO9)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**								**JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**	**T7**	**T8**		**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	02.00	**06.00**	**03.50**	**04.00**	**05.00**	**10.00**	**06.00**	**07.00**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/								Q1	(a) SA	6											**25**
		/										(b) SQ	8	(c) SQ	11							
CLO 1			/						Q2	(a) SA	4	(b) SQ	8									**25**
				/										(c) SQ	13							
*CLO 1***					/				Q3	(a) SA	6											**25**
						/						(b) SQ	9	(c) SQ	10							
CLO 1							/		Q4	(a) SA	4	(b) SQ	8									**25**
								/						(c) SQ	13							
							JUMLAH MARKAH			C1	**20**	C2	**33**	C3	**47**	C4	**0**	C5	**0**	C6	**0**	**100**
							TABURAN DOMAIN KOGNITIF			C1 - C2			**53%**	C3 - C4			**47%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Nota:

**** Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas**

Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

Disediakan oleh:

.....

(TS. DR. TAMIL MOLI A/P LOGANATHAN)

Penyelaras Kursus

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

.....

(NAMA)

Penyelaras Jabatan

WAN MOHD RIZAM BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Pengarah Sultan Mizan Zainal Abidin

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ40153 - PNEUMATIC & HYDRAULICS
VERSI KURIKULUM	Version: 230419_1_Effective: June2019
NAMA PENYELARAS KURSUS	UMA DEVI A/P NADARAJAH
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the basic concept and function of pneumatics and hydraulics system. (C3, PLO1)
CLO2 : Design pneumatic, electro-pneumatic and hydraulic circuit according to assigned tasks. (C5, PLO3)
CLO3 : Perform experiment on pneumatic, electro-pneumatic and hydraulic circuit during practical session. (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**	**BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	07.50	**10.00**	**09.00**	**08.00**	**08.50**	**0**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1	(a) SA	5	(b) SQ	10	(c) SQ	10							**25**
*CLO 2***		/					Q2					(a) SA	5	(b) SQ	12					**25**
			/													(c) SA	8			
CLO 1			/				Q3	(a) SA	5											**25**
				/						(b) SQ	12	(c) SA	8							
CLO 1					/		Q4			(a) SA	5									**25**
CLO 2					/							(b) SQ	12	(c) SA	8					
				JUMLAH MARKAH				C1	**10**	C2	**27**	C3	**35**	C4	**20**	C5	**8**	C6	**0**	**100**
				TABURAN DOMAIN KOGNITIF				C1 - C2			**37%**	C3 - C4			**55%**	C5-C6			**8%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Nota:

**** Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas**

Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

Disediakan oleh:

.....

(NAMA)

Penyelaras Kursus

UMA DEVI NADARAJAH
PENSYARAH
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK BANTING SELANGOR

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

.....

(NAMA)

Penyelaras Jabatan

WAN MOHD RIZARIS BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ40163 - MECHANICS OF MACHINES
VERSI KURIKULUM	Version: 230419_3_Effective: Session_II_2024/2025
NAMA PENYELARAS KURSUS	MMANIYARASI A/P MUNUSAMY
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SQ/SA)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the fundamentals of mechanics of machines to solve related problems in the theoretical and graphical aspects. (C3, PLO1)
CLO2 : Analyze problems related to the mechanics of machines in relation to the theoretical aspects. (C4, PLO2)
CLO3 : Perform experiments in groups accordingto the Standard Operating Procedures. (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**		**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	07.85	**07.80**	**11.80**	**11.80**	**05.90**	**0**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
*CLO 2***	/						Q1			(a) SA	6	(b) SQ	13	(c) SQ	6					**25**
*CLO 2***		/					Q2	(a) SA	6	(b) SQ	10	(c) SQ	9							**25**
CLO 1				/			Q3			(a) SA	4	(b) SQ	11							**25**
			/									(c) SQ	10							
*CLO 2***					/		Q4			(a) SA	6	(b) SQ	10	(c) SQ	9					**25**
					JUMLAH MARKAH			C1	**6**	C2	**26**	C3	**53**	C4	**15**	C5	**0**	C6	**0**	**100**
					TABURAN DOMAIN KOGNITIF			C1 - C2			**32%**	C3 - C4			**68%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan hanya untuk soalan 3 (Topik 3 & 4)

ii. Topik yang telah dinilai dalam CA : tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

Nota:

a) Pilih salah satu(1) soalan bagi mana-mana soalan yang bertanda ** wajib melibatkan DP

b) Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Disediakan oleh:

Mani

.....

(MMANIYARASI A/P MUNUSAMY)

Penyelaras Kursus

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZARIZ BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Mizan Zainal Abidin

(NAMA)

Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK PORT DICKSON
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	SITI HAJAR BINTI MOHD NOH
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ42022 - INDUSTRIAL MANAGEMENT
VERSI KURIKULUM	Version: 230419_2_Effective: Session 1 2022/2023
NAMA PENSYARAH KURSUS	NUR HAZWANI BINTI NASRUDDIN
TEMPOH PEPERIKSAAN	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SQ/SA)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the basic concept of industrial management system to solve related problems. (C3, PLO2)
CLO2 : Analyze problems related to industrial management. (C4, PLO8)
CLO3 : Demonstrate communication skill in group to explain plant location and layout. (A3, PLO10)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**NO. SOALAN**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**		**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	02.75	**02.50**	**04.00**	**05.50**	**05.00**	**03.75**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1	(a) SA	4	(b) SA	6									**25**
CLO 2		/										(c) SQ	15							
CLO 2				/			Q2			(a) SA	6	(b) SA	9	(c) SQ	10					**25**
CLO 2					/		Q3			(a) SA	6	(b) SQ	9	(c) SQ	10					**25**
CLO 1						/	Q4	(a) SA	5	(b) SA	8									**25**
										(c) SQ	12									
				JUMLAH MARKAH				C1	**9**	C2	**38**	C3	**33**	C4	**20**	C5	**0**	C6	**0**	**100**
				TABURAN DOMAIN K			**TOTAL**	C1 - C2			**47%**	C3 - C4			**53%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA : tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

Topik 3 melibatkan praktikal(CLO3) dan telah diuji pada item penilaian kerja kursus.

a) Pilih salah satu(1) soalan bagi mana-mana soalan yang bertanda ** wajib melibatkan DP

b) Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Disediakan oleh:

.....

(NUR HAZWANI BINTI NASRUDDIN)

Penyelaras Kursus

Disemak oleh:

.....

(NAMA)

Ketua Program

Disahkan oleh:

.....

(NAMA)

Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK PORT DICKSON
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	SITI HAJAR BINTI MOHD NOH
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ52012 - ENGINEERING PLANT TECHNOLOGY
VERSI KURIKULUM	Version: 230419_1_Effective: June2019
NAMA PENSYARAH KURSUS	SHAH RIZAL BIN ZAINAL
TEMPOH PEPERIKSAAN	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SQ/SA)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Classify the concepts and technology of power plant system and components to solve related problem based on its application and functions. (C4, PLO2)
CLO2 : Implement the professional ethics and responsibility and norms of technician practice in power plant system and components. (C3, PLO8)
CLO3 : Demonstrate skill of communications effectively on well-defined engineering activities with the engineering community and with society of large and information management skills based on related engineering plant technology. (A3, PLO10)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**NO. SOALAN**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**		**C1**		**C2**		**C3**		**C4**		**C5**		**C6**		
	08:00	**06:00**	**04:00**	**04:00**	**03:00**	**00:00**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1**	/						**Q1**			(a)SA	6	(b) SQ	10	(c)SQ	9					**25**
CLO 1		/					**Q2**			(a)SA	6	(b) SQ	10	(c)SQ	9					**25**
CLO 2			/				**Q3**	(a)SA	6	(b)SQ	8	(c) SQ	11							**25**
CLO 2				/			**Q4**			(a)SQ	8	(b) SQ	7							**25**
CLO 2					/							(c) SQ	10							
				JUMLAH MARKAH				C1	**6**	C2	**28**	C3	**48**	C4	**18**	C5	**0**	C6	**0**	**100**
				TABURAN DOMAIN K			**TOTAL**	C1 - C2			**34%**	C3 - C4			**66%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA : tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

**** Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas**

Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Disediakan oleh:

SHAH RIZAL BIN ZAINAL
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Port Dickson

(NAMA)

Penyelaras Kursus

Disemak oleh:

SITI HAJAR BINTI MOHD NOH
Ketua Program
Jabatan Kejuruteraan Mekanikal
Politeknik Port Dickson

(NAMA)

Ketua Program

Disahkan oleh:

WAN MOHD RIZAIHIZ BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Pengarah Mizan Zainal Abidin

(NAMA)

Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ10243 - WORKSHOP TECHNOLOGY
VERSI KURIKULUM	Version: 06062024_2_Effective: Session_II_2024/2025
NAMA PENYELARAS KURSUS	NURHASLIZA BINTI ROSLI
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)					
	C1	C2	C3	C4	C5	C6
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology. (C3, PLO1)
CLO2 : Apply standard practice in operating mechanical tools and component. (C3, PLO7)
CLO3 : Demonstrate continuous learning and information management skills to complete assigned task. (A3, PLO11)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	TOPIK / SLT							JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)	DOMAIN TAKSONOMI												JUMLAH MARKAH
	T1	T2	T3	T4	T5	T6	T7		C1		C2		C3**		C4**		C5**		C6**		
	04.50	03.00	03.00	03.00	06.00	06.00	03.00		NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	
CLO 1	/							Q1	(a) SA	6	(b) SA	8									25
		/											(c) SQ	11							
CLO 1			/					Q2	(a) SA	6	(b) SA	7									25
				/									(c) SQ	12							
CLO 2					/			Q3	(a) SA	4	(b) SA	8	(c) SQ	13							25
CLO 2						/		Q4	(a) SA	6	(b) SA	8									25
							/						(c) SQ	11							
						JUMLAH MARKAH			C1	**22**	C2	**31**	C3	**47**	C4	**0**	C5	**0**	C6	**0**	**100**
						TABURAN DOMAIN KOGNITIF			C1 - C2			**53%**	C3 - C4			**47%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi 2 topik berturutan dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Setiap set pembinaan item peperiksaan akhir perlu disediakan cadangan formula

b) Sekurang-kurangnya 1 daripada item-item dalam lajur C3,C4,C5 dan C6 perlu dibina memenuhi DP1 dan mana-mana dari 2 DP yang lain (DP2-DP7)

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

d) PEMBINAAN ITEM PEPERIKSAAN AKHIR KOD KURSUS INI TIDAK MELIBATKAN POLITEKNIK PENYELARAS

Disediakan oleh:

NURHASLIZA BINTI ROSLI
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

(NAMA)
Penyelaras Kursus

Disemak oleh:

(NAMA)
Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZAMIE BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal

(NAMA)
Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ20263 - ELECTRICAL AND ELECTRONIC TECHNOLOGY
VERSI KURIKULUM	Version: 06062024_2_Effective: Session_I_2025/2026
NAMA PENYELARAS KURSUS	TS. MOHD NASIRUDDIN BIN HUSHIM
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply fundamental knowledge in electricity, electronic, electromagnetisms and electrostatics in motor and generator control systems to solve related problems in electrical technology. (C3, PLO1)
CLO2 : Organize appropriate experiments in groups according to Standard Operating Procedure. (P4, PLO5)
CLO3 : Demonstrate continuous learning and information management skills while engaging in independent acquisition of new knowledge and skills in laboratory report. (A3, PLO11)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**	**BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**C1**		**C2**		**C3****		**C4****		**C5****		**C6****		
	09.00	**08.50**	**10.00**	**12.00**	**0**	**0**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1	(a) SA	4	(b) SA	6	(c) SQ	15							**25**
CLO 1		/					Q2	(a) SA	4	(b) SQ	8	(c) SQ	13							**25**
CLO 1			/				Q3	(a) SA	4	(b) SA	6	(c) SQ	15							**25**
CLO 1				/			Q4	(a) SA	4	(b) SQ	8	(c) SQ	13							**25**
							JUMLAH MARKAH	C1	**16**	C2	**28**	C3	**56**	C4	**0**	C5	**0**	C6	**0**	**100**
							TABURAN DOMAIN KOGNITIF	C1 - C2			**44%**	C3 - C4			**56%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi 2 topik berturutan dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Setiap set pembinaan item peperiksaan akhir perlu disediakan cadangan formula

b) Sekurang-kurangnya 1 daripada item-item dalam lajur C3,C4,C5 dan C6 perlu dibina memenuhi DP1 dan mana-mana dari 2 DP yang lain (DP2-DP7)

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

d) PEMBINAAN ITEM PEPERIKSAAN AKHIR KOD KURSUS INI TIDAK MELIBATKAN POLITEKNIK PENYELARAS

Disediakan oleh:

.....

(NAMA)

Penyelaras Kursus

Ts. MOHD NASIRUDDIN BIN HUSHIM
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

.....

(NAMA)

Penyelaras Jabatan

WAN MOHD RIZAMIE BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ20273 - FLUID MECHANICS
VERSI KURIKULUM	Version: 06062024_3_Effective:Session_I_2025/2026
NAMA PENYELARAS KURSUS	CHE FARIDAH BINTI CHE MOHAMAD
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Explain various fluid properties to solve the problem in fluids. (C2, PLO 1)
CLO2 : Apply fundamental knowledge of fluid mechanics in mechanical engineering applications. (C3, PLO 1)
CLO3 : Organize appropriate experiments in group according to the Standard Operating Procedures. (P4, PLO 5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**	**BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**C1**		**C2**		**C3****		**C4****		**C5****		**C6****		
	05.50	**06.00**	**07.00**	**08.00**	**0**	**0**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1	(a) SA	5											**25**
										(b) SQ	8									
										(c) SQ	12									
CLO 2		/					Q2			(a) SA	4	(b) SQ	10							**25**
												(c) SQ	11							
CLO 2			/				Q3			(a) SA	4	(b) SQ	10							**25**
												(c) SQ	11							
CLO 2				/			Q4			(a) SA	4	(b) SQ	10							**25**
												(c) SQ	11							
							JUMLAH MARKAH	C1	**5**	C2	**32**	C3	**63**	C4	**0**	C5	**0**	C6	**0**	**100**
							TABURAN DOMAIN KOGNITIF	C1 - C2			**37%**	C3 - C4			**63%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi 2 topik berturutan dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Setiap set pembinaan item peperiksaan akhir perlu disediakan cadangan formula

b) Sekurang-kurangnya 1 daripada item-item dalam lajur C3,C4,C5 dan C6 perlu dibina memenuhi DP1 dan mana-mana dari 2 DP yang lain (DP2-DP7)

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

d) PEMBINAAN ITEM PEPERIKSAAN AKHIR KOD KURSUS INI TIDAK MELIBATKAN POLITEKNIK PENYELARAS

Disediakan oleh:

(NAMA)

Penyelaras Kursus

CHE FARIDAH BINTI CHE MOHAMAD
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disemak oleh:

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZARIE BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Pengesahan Mizan Zainal Abidin

(NAMA)

Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ30293 - THERMODYNAMICS
VERSI KURIKULUM	Version: 06062024_1_Effective:Session_I_2024/25
NAMA PENYELARAS KURSUS	MUHAMMAD BIN ABDULLAH
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the fundamentals concept and properties of pure substances in thermodynamics. (C3,PLO1)
CLO2 : Analyze the thermodynamics systems using the laws of thermodynamics. (C4, PLO2)
CLO3 : Organize appropriately experiments according to the Standard Operating Procedures. (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**		**C1**		**C2**		**C3****		**C4****		**C5****		**C6****		
	04.00	**11.50**	**14.00**	**11.00**	**0**	**0**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1	(a) SA	6												**25**
		/										(b) SQ	9								
												(c) SQ	10								
CLO 2			/				Q2			(a) SA	6	(b) SQ	9	(c) SQ	10						**25**
CLO 2			/				Q3			(a) SA	6	(b) SQ	9	(c) SQ	10						**25**
*CLO 2***				/			Q4	(a) SA	4			(b) SQ	8								**25**
												(c) SQ	13								
					JUMLAH MARKAH			C1	**10**	C2	**12**	C3	**58**	C4	**20**	C5	**0**	C6	**0**	**100**	
					TABURAN DOMAIN KOGNITIF			C1 - C2			**22%**	C3 - C4			**78%**	C5-C6			**0%**	**100%**	

Panduan pembangunan FEIST

i. Kombinasi 2 topik berturutan dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Setiap set pembinaan item peperiksaan akhir perlu disediakan cadangan formula

b) Sekurang-kurangnya 1 daripada item-item dalam lajur C3,C4,C5 dan C6 perlu dibina memenuhi DP1 dan mana-mana dari 2 DP yang lain (DP2-DP7)

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

d) PEMBINAAN ITEM PEPERIKSAAN AKHIR KOD KURSUS INI TIDAK MELIBATKAN POLITEKNIK PENYELARAS

Disediakan oleh:

(NAMA)

Penyelaras Kursus

MUHAMMAD BIN ABDULLAH
KUIDM / Pensyarah
Jabatan Kej. Mekanikal
Politeknik Banting Selangor

Disemak oleh:

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZAIRUL BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Mizan Zainal Abidin

(NAMA)

Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ30313 - ENGINEERING MECHANICS
VERSI KURIKULUM	Version: 06062024_1_Effective:Session_I_2024/2025
NAMA PENYELARAS KURSUS	ROSEDHILA BINTI RAMLI
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)					
	C1	C2	C3	C4	C5	C6
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Solve problems related to statics and dynamics based on the concepts and principle of engineering mechanics. (C3,PLO1)
CLO2 : Analyze engineering related problems based on fundamentals of statics and dynamics. (C4, PLO2)
CLO3 :Oorganize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	TOPIK / SLT						JENIS SOALAN	DOMAIN TAKSONOMI												JUMLAH MARKAH
	T1	T2	T3	T4	T5	T6	BAHAGIAN A: STRUCTURED QUESTION (SQ)	C1		C2		C3**		C4**		C5**		C6**		
	01.00	01.00	05.00	06.00	10.50	03.00		NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	
CLO 1	/						Q1	(a) SA	4											**25**
		/										(b) SQ	9							
			/							(c)SQ	12									
CLO 2				/			Q2					(a)SQ	11	(b)SQ	14					**25**
CLO 1					/		Q3			(a) SQ	10	(b) SQ	10							**25**
CLO 2														(c) SA	5					
*CLO 1***						/	Q4	(a) SA	4	(b)SQ	8	(c) SQ	13							**25**
					JUMLAH MARKAH			C1	**8**	C2	**30**	C3	**43**	C4	**19**	C5	**0**	C6	**0**	**100**
					TABURAN DOMAIN KOGNITIF			C1 - C2			**38%**	C3 - C4			**62%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi 2 topik berturutan dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Setiap set pembinaan item peperiksaan akhir perlu disediakan cadangan formula

b) Sekurang-kurangnya 1 daripada item-item dalam lajur C3,C4,C5 dan C6 perlu dibina memenuhi DP1 dan mana-mana dari 2 DP yang lain (DP2-DP7)

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

d) PEMBINAAN ITEM PEPERIKSAAN AKHIR KOD KURSUS INI TIDAK MELIBATKAN POLITEKNIK PENYELARAS

Disediakan oleh:

(Rosedhila binti Ramli)

Penyelaras Kursus

ROSEDHILA BINTI RAMLI
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disemak oleh:

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZAHIR BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
(NAMA)
Jabatan Kejuruteraan Mekanikal
Penyelaras Jabatan

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ30323 - STRENGTH OF MATERIALS
VERSI KURIKULUM	Version: 06062024_ Effective: Session_I_2024/2025
NAMA PENYELARAS KURSUS	MASFIZAIZAN BINTI MANAF
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	**CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)**					
	C1	**C2**	**C3**	**C4**	**C5**	**C6**
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the concepts of strength of materials to solve related problems. (C3, PLO1)
CLO2 : Analyze problems correctly related to strength of materials. (C4, PLO2)
CLO3 : Organize appropriate experiments in groups according to the Standard Operating Procedures (SOP). (P4, PLO5)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	**TOPIK / SLT**						**JENIS SOALAN**	**DOMAIN TAKSONOMI**												**JUMLAH MARKAH**
	T1	**T2**	**T3**	**T4**	**T5**	**T6**	**BAHAGIAN A: STRUCTURED QUESTION (SQ)**	**C1**		**C2**		**C3****		**C4****		**C5****		**C6****		
	04.00	**06.00**	**03.00**	**04.00**	**04.00**	**04.00**		**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	**NO. ITEM**	**MARKAH**	
CLO 1	/						Q1			(a) SA	6									**25**
			/							(b) SA	6									
												(c) SQ	13							
*CLO 1***		/					Q2			(a) SA	6									**25**
										(b) SA	8	(c) SQ	11							
CLO 2				/			Q3	(a) SA	5			(b) SQ	10							**25**
					/									(c) SQ	10					
CLO 2						/	Q4	(a) SA	4	(b) SQ	10	(c) SQ	11							**25**
	JUMLAH MARKAH							C1	**9**	C2	**36**	C3	**45**	C4	**10**	C5	**0**	C6	**0**	**100**
	TABURAN DOMAIN KOGNITIF							C1 - C2			**45%**	C3 - C4			**55%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi topik dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai
selagi masih berada dalam julat (range) tahap kognitif yang ditetapkan (+/- 1 Markah)

CATATAN:

**** Pembinaan item perlu melibatkan sekurang-kurangnya 3 DP bagi item Taksonomi C3 dan ke atas**

Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

Disediakan oleh:

(NAMA MASFIZAIZAN BINTI MANAF)

Penyelaras Kursus

PENSYARAH
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK BANTING SELANGOR

Disemak oleh:

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

WAN MOHD RIZAMIR BIN WAN MOHAMAD NOOR

(NAMA)

Penyelaras Jabatan

PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Mizan Zainal Abidin

TERHAD

TERHAD

POLITEKNIK PENYELARAS	POLITEKNIK BANTING SELANGOR
JABATAN AKADEMIK	JABATAN KEJURUTERAAN MEKANIKAL
NAMA PROGRAM	DIPLOMA KEJURUTERAAN MEKANIKAL
NAMA KETUA PROGRAM	NURULHUDA BINTI KHALID
SESI BERKUATKUASA	SESI I 2025/2026
KOD/NAMA KURSUS	DJJ40343 - MATERIAL SCIENCE AND ENGINEERING
VERSI KURIKULUM	Version: 06062024_1_Effective:Session_I_2024/2025
NAMA PENYELARAS KURSUS	TS. DR. TAMIL MOLI A/P LOGANATHAN
TEMPOH MENJAWAB	2 JAM
FORMAT PEPERIKSAAN AKHIR	4 SOALAN (SA/SQ)
ARAHAN MENJAWAB	JAWAB SEMUA SOALAN
JUMLAH MARKAH	100 MARKAH (25 MARKAH / SOALAN)

SEMESTER	CADANGAN **TAHAP TAKSONOMI KOGNITIF (%)					
	C1	C2	C3	C4	C5	C6
1 - 2	30 - 40	40 - 50	20 - 30	-	-	-
3 - 4	10 - 20	30 - 40	40 - 50	10 - 20	0 - 05	-
5 - 6	0 - 10	30 - 40	40 - 50	10 - 20	0 - 05	0 - 05

***Tahap Taksonomi Kognitif adalah bagi keseluruhan program bukan tertakluk kepada kursus*

COURSE LEARNING OUTCOME (CLO)
CLO1 : Apply the knowledge of materials science in engineering application. (C3,PLO1)
CLO2 : Perform the appropriate material testing according to operating procedure. (P4, PLO5)
CLO3 : Work individually and collaboratively in group to complete the assigned tasks . (A3, PLO8)

DUBLIN PROBLEM SOLVING ATTRIBUTE (DP) : DP1, ANY TWO DP (DP2 - DP7)**

COURSE LEARNING OUTCOME (CLO)	TOPIK / SLT							JENIS SOALAN BAHAGIAN A: STRUCTURED QUESTION (SQ)	DOMAIN TAKSONOMI												JUMLAH MARKAH
	T1	T2	T3	T4	T5	T6	T7		C1		C2		C3**		C4**		C5**		C6**		
	03.00	03.00	03.50	04.00	08.00	03.00	01.50		NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	NO. ITEM	MARKAH	
CLO 1	/							Q1	(a) SA	4	(b) SA	6									25
		/											(c) SQ	15							
CLO 1			/					Q2	(a) SA	4	(b) SQ	8									25
				/									(c) SQ	13							
*CLO 1***					/			Q3	(a) SA	4	(b) SQ	8	(c) SQ	13							25
CLO 1						/		Q4			(b) SA	6	(c) SQ	15							25
							/		(a) SA	4											
						JUMLAH MARKAH			C1	**16**	C2	**28**	C3	**56**	C4	**0**	C5	**0**	C6	**0**	**100**
						TABURAN DOMAIN KOGNITIF			C1 - C2			**44%**	C3 - C4			**56%**	C5-C6			**0%**	**100%**

Panduan pembangunan FEIST

i. Kombinasi 2 topik berturutan dibenarkan

ii. Topik yang telah dinilai dalam CA, tidak semestinya dinilai semula dalam FE

Panduan Penggubalan Item Berdasarkan FEIST

i. Agihan markah adalah sebagai panduan dan masih boleh diubahsuai selagi masih berada dalam julat (*range*) tahap kognitif yang ditetapkan (+/- 1 Markah)

Jenis Item		Deskripsi
MCQ	Soalan Aneka Pilihan *Multiple Choise Question*	Item yang mempunyai satu jawapan tepat perlu dipilih dari pelbagai pilihan jawapan.
SA	Soalan Pendek *Short Answer*	Item yang memerlukan penerangan yang ringkas dan padat.
SQ	Soalan Berstruktur *Stuctured Question*	Item yang disusun secara rangkaian.
ES	Esei *Essay*	Item yang memerlukan jawapan dalam bentuk huraian yang lengkap dan komprehensif.

CATATAN:

a) Setiap set pembinaan item peperiksaan akhir perlu disediakan cadangan formula

b) Sekurang-kurangnya 1 daripada item-item dalam lajur C3,C4,C5 dan C6 perlu dibina memenuhi DP1 dan mana-mana dari 2 DP yang lain (DP2-DP7)

c) Bilangan anak bagi soalan SQ -Maksimum 3 (i,ii &iii)

d) PEMBINAAN ITEM PEPERIKSAAN AKHIR KOD KURSUS INI TIDAK MELIBATKAN POLITEKNIK PENYELARAS

Disediakan oleh:

.....

(TS. DR. TAMIL MOLI A/P LOGANATHAN)

Penyelaras Kursus

Disemak oleh:

.....

(NAMA)

Ketua Program

NURULHUDA BINTI KHALID
Ketua Program DKM
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

Disahkan oleh:

.....

(NAMA)

Penyelaras Jabatan

WAN MOHD RIZARIA BIN WAN MOHAMAD NOOR
PENSYARAH UTAMA
Jabatan Kejuruteraan Mekanikal
Politeknik Banting Selangor

TERHAD

Appendix C3-2n : Moderation Process for Assessment on Final Examination Papers and Marking Schemes

GARIS PANDUAN MODERASI PEMERIKSAAN SKRIP JAWAPAN POLITEKNIK (Pindaan 2013)

8.0 PROSES KERJA PELAKSANAAN MODERASI

BIL	PROSES KERJA	TINDAKAN
1	Melantik Penyelaras Moderasi Jabatan.	TP(A)
2	Melantik Penyelaras Moderasi Kursus dan Pemeriksa Kedua.	KJ(A)
3	Merancang pelaksanaan moderasi di peringkat jabatan berpandukan kepada Takwim Aktiviti Pentaksiran.	Penyelaras Moderasi Jabatan
4	Memberi taklimat pelaksanaan moderasi pemeriksaan skrip jawapan kepada semua pensyarah.	Penyelaras Moderasi Jabatan
5(a)	Pelaksanaan proses Moderasi Pemeriksaan Skrip Jawapan bagi kursus yang diajar oleh lebih dari seorang pensyarah kursus:	
	i. Mengambil skrip jawapan dan Peraturan Pemarkahan.	Pemeriksa Skrip Jawapan.
	ii. Menyemak peraturan pemarkahan untuk digunakan sebagai peraturan pemarkahan bagi penyemakan skrip jawapan pelajar.	Pemeriksa Skrip Jawapan
	iii. Merujuk kepada Politeknik Penyelaras sekiranya terdapat ralat terhadap peraturan pemarkahan untuk pengesahan perubahan peraturan pemarkahan. **(Rujuk Garis Panduan Pengurusan Bank Item Dan Peraturan Pemarkahan Politeknik 10.4)**	Penyelaras Moderasi Kursus / Pemeriksa Skrip Jawapan
	iv. Melaksanakan penyelarasan pemeriksaan di mana semua pemeriksa skrip jawapan yang terlibat membuat pemeriksaan sampel skrip jawapan yang sama bagi setiap soalan. Peraturan pemarkahan dan sampel skrip jawapan yang telah disahkan oleh Penyelaras Moderasi Kursus akan menjadi rujukan dalam pemeriksaan skrip jawapan seterusnya.	Pemeriksa Skrip Jawapan
	v. Membuat pemeriksaan skrip jawapan mengikut kelas.	Pemeriksa Skrip Jawapan

BIL	PROSES KERJA	TINDAKAN
	vi. Membuat semakan kedua untuk setiap kelas yang ditetapkan. (memilih **tiga skrip** jawapan daripada 3 kategori markah : **satu tinggi, satu sederhana dan satu rendah**). Pemilihan dibuat secara rawak berasaskan rekod markah oleh Pemeriksa Skrip Jawapan.	Pemeriksa Kedua
	vii. Mengisi Borang Penyelarasan Pemeriksaan Skrip Jawapan Calon.	Pemeriksa Kedua
	viii. Sekiranya berlaku perbezaan jumlah markah ≤ 5, markah asal dikekalkan. Jika perbezaan jumlah markah > 5, skrip jawapan bagi kelas berkenaan perlu disemak semula oleh Pemeriksa Skrip Jawapan atas cadangan pemeriksa kedua setelah merujuk Penyelaras Moderasi Kursus.	Pemeriksa Skrip Jawapan/ Pemeriksa Kedua/ Penyelaras Moderasi Kursus
	ix. Jika semakan semula perlu dilakukan, pemeriksa skrip jawapan hendaklah menghantar semua skrip jawapan untuk disahkan oleh pemeriksa kedua.	Pemeriksa Skrip Jawapan/ Pemeriksa Kedua
	x. Mengemaskini jumlah markah peperiksaan akhir	Pemeriksa Skrip Jawapan

Appendix C3-2o : Grading System for the Polytechnic

Marks	Gred Point	Gred	Status
90 - 100	4.00	A+	Very excellent
80 - 89	4.00	A	Excellent
75 – 79	3.67	A-	Credit
70 – 74	3.33	B+	Credit
65 – 69	3.00	B	Credit
60 – 64	2.67	B-	Pass
55 – 59	2.33	C+	Pass
50 – 54	2.00	C	Pass
47 – 49	1.67	C-	Pass
44 – 46	1.33	D+	Pass
40 - 43	1.00	D	Pass
30 - 39	0.67	E	Fail
20 - 29	0.33	E-	Fail
0 – 19	0.00	Fail	Fail

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN POLITEKNIK DAN KOLEJ KOMUNITI

EDISI PERTAMA

ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN POLITEKNIK DAN KOLEJ KOMUNITI

Terbitan Edisi Pertama

Hak cipta terpelihara. Mana–mana bahagian penerbitan ini tidak dibenarkan untuk disalin, disimpan dalam apa-apa bentuk sama ada secara elektronik, mekanikal, penggambaran semula dan perakaman atau apa-apa cara yang memungkinkan untuk diterbit semula tanpa izin daripada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pendidikan Tinggi.

Diterbitkan oleh:

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PRAKATA

Bahagian Peperiksaan dan Penilaian, Jabatan Pendidikan Politeknik dan Kolej Komuniti ingin merakamkan penghargaan terima kasih atas sokongan dan kerjasama semua pihak dalam menjayakan proses pembangunan Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama.

Arahan ini ialah panduan dan rujukan bagi warga politeknik dan kolej komuniti serta semua pihak yang terlibat dalam pelaksanaan program pengajian di institusi. Diharapkan, arahan ini menjadi sumber rujukan utama yang bermanfaat kepada institusi sekaligus akan meningkatkan dan memantapkan kefahaman semua pihak dalam proses pengurusan peperiksaan dan kaedah penilaian.

Berikutan penerbitan ini, Arahan-Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Edisi 6, Jun 2019 dan Peraturan Peperiksaan Dan Kaedah Penilaian Kolej Komuniti Edisi 2017 dengan ini **DIBATALKAN** berkuat kuasa serta-merta. Segala rujukan berkaitan arahan peperiksaan dan kaedah penilaian hendaklah merujuk kepada dokumen terkini.

KANDUNGAN

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BAHAGIAN 1

PENGENALAN

1.1. NAMA DAN TARIKH BERKUAT KUASA

Dokumen ini dinamakan 'Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama'. Segala arahan di dalam buku ini berkuat kuasa pada tahun 2025.

1.2. TUJUAN

Dokumen arahan ini merupakan satu ketetapan bagi semua politeknik dan kolej komuniti dalam mengendalikan segala urusan yang berkaitan dengan peraturan peperiksaan dan kaedah penilaian.

1.3. HAK DAN TANGGUNGJAWAB

Setiap politeknik dan kolej komuniti bertanggungjawab memastikan bahawa garis panduan berkaitan dengan pendekatan pembelajaran, penilaian, penyeliaan dan pentadbiran peperiksaan kepada semua pelajar yang berdaftar, menepati peraturan-peraturan yang diluluskan oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik dan Jawatankuasa Peperiksaan Pusat Kolej Komuniti. Dalam keadaan tertentu, pengarah boleh menggunakan budi bicaranya melalui Mesyuarat Jawatankuasa Peperiksaan di peringkat institusi.

1.4. TAFSIRAN

Dalam arahan ini, melainkan jika konteksnya menghendaki makna yang lain:

"Alat Elektronik" pelbagai jenis peranti atau teknologi yang membantu seseorang untuk meniru atau mendapatkan maklumat semasa ujian atau peperiksaan.

"Arahan" bermakna suatu ketetapan yang diputuskan oleh pihak pengurusan Jabatan Pendidikan Politeknik dan Kolej Komuniti yang terpakai kepada program-program pengajian yang membawa kepada penganugerahan.

"Bencana" bermakna musibah yang menyebabkan gangguan kepada aktiviti dan urusan yang melibatkan kerosakan dan kerugian yang melangkaui kemampuan untuk diatasi.

"Cubaan Menipu" bermakna suatu perbuatan atau hal menipu bagi tujuan penilaian yang dijalankan.

"Cubaan Meniru" bermakna memiliki bersamanya sebarang nota/ maklumat/ dokumen yang disediakan sebelumnya dalam apa-apa jua bentuk dan dengan apa-apa jua cara atau mendapatkannya dari mana-mana punca bagi tujuan untuk menjawab soalan peperiksaan yang sedang dijalankan.

"Gred" bermakna satu tahap pencapaian penilaian dalam bentuk abjad yang menunjukkan prestasi pelajar bagi sesuatu kursus.

"Himpunan Purata Nilai Mata (HPNM)" bermakna Purata Nilai Mata yang diperolehi oleh seseorang pelajar di dalam semua peperiksaan yang diambil sehingga kini.

"Jawatankuasa Peperiksaan Institusi" bermakna satu Jawatankuasa Peperiksaan Politeknik atau Jawatankuasa Peperiksaan Kolej Komuniti yang bertanggungjawab terhadap perjalanan proses peperiksaan dan penilaian serta membuat keputusan penilaian bagi semua kursus.

"Jawatankuasa Peperiksaan Pusat Kolej Komuniti" bermakna jawatankuasa yang bertanggungjawab terhadap penganugerahan sijil kepada pelajar kolej komuniti.

"Keperluan Program" bermakna suatu keperluan yang dikehendaki bagi sesuatu program yang perlu dipenuhi dan disempurnakan oleh seseorang pelajar untuk melayakkannya dianugerahkan sijil akademik.

"Ketua Jabatan Akademik (KJ)/Ketua Program (KPro)" bermakna seseorang pegawai yang dilantik oleh pihak pengurusan Jabatan Pendidikan Politeknik dan Kolej Komuniti bagi mengetuai sesebuah jabatan/program akademik di institusi.

"Kredit" bermakna ukuran kuantitatif yang melambangkan beban pembelajaran untuk mencapai hasil pembelajaran tertentu.

"Kursus Elektif" bermakna kursus yang fleksibel daripada segi penawarannya dan ditetapkan bilangan kredit minimum merujuk kepada standard bidang yang perlu diambil pelajar untuk bergraduat.

"Kursus Pengkhususan" bermakna kursus yang ditawarkan bagi program yang mempunyai pengkhususan dalam bidang tertentu.

"Kursus Prasyarat" bermakna kursus yang wajib lulus untuk membolehkan pelajar mengambil kursus yang disyaratkan.

"Kursus Teras" bermakna kursus teras umum dan kursus teras disiplin bagi program.

"Kursus Wajib" bermakna kursus yang wajib diambil bagi semua pelajar yang mendaftar di politeknik dan kolej komuniti.

"Latihan Industri (LI)" bermakna satu kursus yang dilaksanakan melalui pendekatan *experiential learning* dengan menempatkan pelajar di sesebuah organisasi untuk menjalani latihan praktikal yang diselia dalam industri yang dipilih, sama ada di luar atau di dalam negara, dalam jangka masa yang ditetapkan sebelum mereka layak dianugerahkan sijil akademik.

"Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik" bermakna lembaga yang bertanggungjawab terhadap penganugerahan sijil kepada pelajar politeknik.

"Lulusan" bermakna pelajar yang telah diperaku untuk dianugerahkan sijil akademik oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik dan Jawatankuasa Peperiksaan Pusat Kolej Komuniti.

"Mata Kredit" bermakna hasil darab Nilai Mata dengan Kredit bagi sesuatu kursus.

"Memberi Tiru" bermakna bersubahat dengan pelajar yang lain dalam aktiviti-aktiviti meniru atau cubaan meniru.

"Menipu" bermakna mengenakan tipu atau memperdaya dalam apa-apa jua bentuk dan dengan apa-apa jua cara dalam penilaian.

"Meniru" bermakna menggunakan nota/maklumat/dokumen yang disediakan sebelumnya dalam apa-apa jua bentuk dan dengan apa-apa jua cara atau mendapatkannya dari mana-mana punca bagi tujuan untuk menjawab soalan peperiksaan kursus yang sedang dijalankan.

"Nilai Mata" bermakna suatu nilai dalam bentuk angka yang telah diberi ke atas kumpulan markah seperti yang terdapat di dalam Sistem Gred.

"Pelajar" bermakna seseorang yang berdaftar untuk mengikuti secara sah pengajian akademik di sesebuah politeknik dan kolej komuniti.

"Pelajar Semester Akhir" bermakna pelajar yang sedang mengambil baki kursus yang diwajibkan bagi menamatkan sesuatu program.

"Pelanggaran Peraturan Peperiksaan" bermakna apabila seseorang pelajar itu didapati melakukan perkara-perkara yang dilarang seperti yang disenaraikan di dalam Bahagian 3 : Peraturan Peperiksaan Akhir/Pentaksiran Akhir.

"Pemansuhan Markah Penilaian" bermakna menarik balik gred yang telah diberi kepada seseorang pelajar kerana melanggar peraturan peperiksaan. Pelajar tersebut kemudiannya akan diberi Gred 'F' (Nilai Mata = 0.00) dan dikira telah mengambil dan gagal kursus berkenaan. Nilai Mata ini akan diambil kira dalam pengiraan Purata Nilaian Mata dan Himpunan Purata Nilaian Mata pada semester semasa**.**

"Penangguhan Pengajian" bermakna pelajar boleh diberi status penangguhan pengajian dengan kelulusan Pengarah atas sebab-sebab tertentu.

"Pengecualian Kursus" bermakna proses mengecualikan seseorang pelajar daripada mengambil kursus dalam program yang diikuti atas sebab-sebab tertentu. Pengecualian ini tidak menyebabkan pelajar mendapat kredit bagi kursus yang dikecualikan.

“Penggantungan Pengajian” bermakna suatu bentuk hukuman yang dikenakan ke atas seseorang pelajar yang disabitkan dengan pelanggaran Akta 174 iaitu pelajar berkenaan tidak dibenarkan mengikuti pengajiannya bagi sesuatu tempoh yang ditetapkan. Tempoh penggantungan tersebut akan diambil kira sebagai tempoh pengajian di politeknik atau kolej komuniti.

“Penilaian” bermakna suatu proses tentang membuat pertimbangan dan keputusan prestasi pelajar dan prestasi program bersandarkan kepada standard tanda aras yang dinyatakan oleh kriteria prestasi bagi sesuatu hasil pembelajaran berdasarkan bukti yang telah diperolehi daripada proses pentaksiran.

“Penilaian Khas (PK)” bermakna satu bentuk penilaian yang hanya dibenarkan kepada pelajar yang akan menjalani kursus latihan industri/*work based learning* pada semester akhir dan memenuhi syarat-syarat yang ditetapkan.

“Peperiksaan Akhir” bermakna pentaksiran sumatif yang dilaksanakan pada setiap akhir semester di luar waktu pengajaran dan pembelajaran.

“Peperiksaan Akhir Khas (PAK)” bermakna peperiksaan yang diadakan untuk pelajar-pelajar yang tidak menghadiri peperiksaan akhir dengan sebab-sebab tertentu dan diluluskan oleh Pengarah institusi.

“Peraturan Pemarkahan” bermakna satu set spesifikasi pemarkahan yang dijadikan panduan kepada pemeriksa skrip jawapan. Ia terdiri daripada skema pemarkahan dan rubrik pemarkahan.

“Perkara Berkaitan Undang-Undang” bermakna merujuk kepada segala hal, konsep, atau isu yang berkaitan dengan peraturan, kaedah, dan prinsip yang mengawal atau mentadbir tingkah laku individu dan organisasi dalam masyarakat. Ia melibatkan pelbagai aspek yang berbeza, termasuklah hak, kewajipan, kewenangan, dan proses yang diperlukan untuk memastikan keadilan dan ketertiban dalam masyarakat.

“Pihak Berkuasa” bermakna individu, agensi, atau organisasi yang diberi mandat oleh undang-undang untuk menguatkuasakan peraturan, memantau pelaksanaan aktiviti, serta mengambil tindakan terhadap pelanggaran demi memastikan keselamatan, ketertiban, dan kesejahteraan masyarakat.

"Pindahan Kredit" bermakna proses memindahkan kredit kursus yang telah diambil oleh pelajar dalam sesuatu program ke program yang lain yang membawa kepada penganugerahan kelayakan yang ditawarkan oleh institusi yang sama atau institusi yang berbeza.

"Purata Nilai Mata (PNM)" bermakna Purata Nilai Mata Kredit seseorang pelajar bagi sesuatu semester.

"Rayuan" bermakna permohonan pertimbangan semula atas sesuatu keputusan atau hukuman secara bertulis oleh seseorang pelajar.

"Semester Pendek" bermakna semester pengajian yang dilaksanakan pada Cuti Akhir Semester Sesi II berdasarkan Kalendar Akademik Program Pengajian Politeknik dan Kolej Komuniti dan Kalendar Akademik Program Sarjana Muda Politeknik tahun semasa.

"Sijil Akademik" bermakna penganugerahan dalam bentuk sijil bagi program sijil, diploma dan sarjana muda yang diberikan kepada pelajar setelah berjaya memenuhi keperluan program.

"Skrip Jawapan" bermakna naskhah jawapan yang dihantar oleh pelajar bagi pentaksiran berterusan dan peperiksaan akhir/pentaksiran akhir yang dijalankan.

1.5. SINGKATAN

KPro : Ketua Program
PA : Peperiksaan Akhir/Pentaksiran Akhir
PB : Pentaksiran Berterusan
KJ : Ketua Jabatan Akademik
TPA/TP : Timbalan Pengarah Akademik/Timbalan Pengarah
WBL : *Work Based Learning*
SNM : Sistem Nilai Mata

BAHAGIAN 2

PERATURAN PENILAIAN

2.1. MENDAFTAR KURSUS

2.1.1. Pendaftaran kursus telah dilaksanakan mengikut ketetapan kalendar akademik semasa.

2.1.2. Pelajar hendaklah mencukupkan jumlah kredit yang dibenarkan dengan menambah kursus-kursus lain yang ditawarkan pada semester semasa.

2.1.3. Ketua Jabatan/Ketua Program bertanggungjawab untuk memastikan pelajar telah mendaftar kursus.

2.1.4. Bagi kes yang melibatkan pelajar berpindah dari institusi lain, pendaftaran kursus perlu dilaksanakan selepas urusan pendaftaran pengajian selesai di Jabatan/Unit Hal Ehwal Pelajar merujuk kepada panduan berkaitan pengambilan dan pengurusan pelajar yang sedang berkuat kuasa.

2.2. KREDIT KURSUS

2.2.1. Kredit bagi setiap kursus ialah seperti yang termaktub di dalam dokumen kurikulum yang sedang berkuat kuasa.

2.2.2. Jumlah kredit maksimum bagi satu semester ialah 20 kredit atau seperti yang ditetapkan di dalam dokumen kurikulum/manual akreditasi.

2.2.3. Jumlah kredit minimum bagi satu semester seperti berikut:

Jadual 2.2.3 : Jumlah kredit minimum

PROGRAM PENGAJIAN	JUMLAH JAM KREDIT MINIMUM
Diploma	12
Sijil	9

2.2.4. Pindahan kredit dan pengecualian kursus boleh dimohon dalam tempoh **TIGA (3)** minggu selepas minggu pengajian bermula sekiranya memenuhi kriteria yang ditetapkan di dalam panduan pindahan kredit dan pengecualian kursus yang sedang berkuat kuasa.

2.3. MENENTUKAN JUMLAH KREDIT

2.3.1. Pelajar dibenarkan mengambil kurang daripada jumlah kredit minimum dalam satu semester dengan mendapat sokongan Penasihat Akademik dan kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah sekiranya:

i. pelajar akan menjalani Latihan Industri pada semester berikutnya; atau
ii. pelajar mengikuti semester pendek; atau
iii. pelajar Kursus Secara Sambilan (KSS), atau apa-apa program seumpamanya; atau
iv. pelajar mendapat keputusan Kedudukan Bersyarat (KS) pada semester sebelumnya.

2.3.2. Pelajar dibenarkan mengambil lebih daripada jumlah kredit maksimum dalam satu semester dengan sokongan Penasihat Akademik dan kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah sekiranya:

i. pelajar akan menjalani Latihan Industri pada semester berikutnya; atau
ii. pelajar telah lulus semua kursus pada semester sebelumnya dan mendapat Himpunan Purata Nilai Mata bersamaan atau lebih daripada 3.00 pada semester sebelumnya.

2.3.3. Pelajar hendaklah mencukupkan jumlah kredit minimum bagi setiap semester dengan mengambil kursus-kursus yang ditawarkan pada semester berkenaan dengan kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah.

2.3.4. Pelajar bertanggungjawab menyemak jumlah kredit terkumpul agar boleh menamatkan pengajian dalam tempoh yang ditentukan.

2.4. MENAMBAH KURSUS

2.4.1. Pelajar boleh menambah kursus dengan syarat tidak melebihi jumlah kredit yang dibenarkan bagi semester berkenaan.

2.4.2. Penambahan kursus boleh dibuat pada minggu ke **TIGA (3)** sehingga minggu ke **ENAM (6)** sesi pengajian. Pelajar hendaklah terlebih dahulu mendapatkan nasihat dan sokongan daripada Penasihat Akademik dan/atau Ketua Program serta mendapat kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah.

2.4.3. Selepas daripada tempoh yang ditetapkan, pelajar tidak dibenarkan membuat sebarang penambahan kursus.

2.5. MENGGUGUR KURSUS

2.5.1. Pelajar boleh menggugur kursus dengan syarat tidak kurang daripada jumlah kredit minimum.

2.5.2. Pengguguran kursus boleh dibuat pada minggu ke **TIGA (3)** sehingga minggu ke **ENAM (6)** sesi pengajian. Pelajar hendaklah terlebih dahulu mendapatkan nasihat dan sokongan daripada Penasihat Akademik dan/atau Ketua Program serta mendapat kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah.

2.5.3. Selepas daripada tempoh yang ditetapkan, pelajar tidak dibenarkan membuat sebarang pengguguran kursus.

2.6. MENGULANG KURSUS

2.6.1. Bagi kursus wajib, kursus teras dan kursus pengkhususan pelajar perlu:

i. mengulang mana-mana kursus yang gagal pada semester berikutnya sekiranya kursus itu ditawarkan kecuali pada keadaan yang tidak memungkinkan pelajar berbuat demikian dan mendapat kelulusan daripada Pengarah/Timbalan Pengarah Akademik/Timbalan Pengarah/Ketua Jabatan Akademik; dan

ii. mengikuti semula aktiviti-aktiviti pembelajaran bagi kursus-kursus berkenaan sepenuhnya.

2.6.2. Bagi kursus elektif pelajar perlu:

i. mengulang semula kursus yang gagal, sama ada mengambil kursus yang sama ATAU mana-mana kursus lain pada semester berikut sekiranya kursus itu ditawarkan kecuali pada keadaan yang tidak memungkinkan pelajar berbuat demikian dan mendapat kelulusan daripada Pengarah/Timbalan Pengarah Akademik/Timbalan Pengarah/Ketua Jabatan; dan

ii. memenuhi keperluan jam kredit minimum kursus elektif berdasarkan kurikulum yang sedang berkuat kuasa; dan

iii. mengikuti semula aktiviti-aktiviti pembelajaran bagi kursus-kursus berkenaan sepenuhnya.

2.6.3. Bagi kes pelajar yang akan menjalani kursus latihan industri/*Work Based Learning* pada semester akhir yang gagal **DUA (2)** atau lebih kursus pada semester sebelumnya dikehendaki mengulang kursus.

2.7. MEMPERBAIKI GRED KURSUS

Bagi pelajar yang mendapat lulus dengan Gred C-, D+ dan D bagi mana-mana kursus:

2.7.1. pelajar dibenarkan untuk memperbaiki gred kursus sekali sahaja sepanjang pengajian bagi kursus tersebut kecuali bagi kursus-kursus *Work Based Learning*.

2.7.2. pelajar perlu mengikuti semula semua aktiviti pembelajaran bagi kursus berkenaan sepenuhnya pada mana-mana semester berikutnya termasuk semester pendek.

2.7.3. keputusan bagi pelajar yang memperbaiki gred kursus akan diambil daripada gred terbaik.

2.7.4. jumlah kredit yang perlu diambil oleh pelajar yang memperbaiki gred kursus tidak boleh melebihi dua puluh (20) kredit kecuali pada keadaan-keadaan

yang tidak memungkinkan pelajar berbuat demikian dan mendapat kelulusan Timbalan Pengarah Akademik/Timbalan Pengarah/Ketua Jabatan.

2.7.5. tempoh maksimum pengajian bagi sesuatu kursus masih terpakai kepada pelajar yang memperbaiki gred kursus.

BAHAGIAN 3

PERATURAN PEPERIKSAAN AKHIR

3.1. SYARAT LAYAK MENDUDUKI PEPERIKSAAN AKHIR

3.1.1. Pelajar telah memenuhi semua syarat berikut bagi melayakkan diri menduduki peperiksaan akhir:

i. mendaftar pengajian pada sesi semasa;
ii. mendaftar kursus pada sesi semasa;
iii. peratus kehadiran minimum ialah 80% kuliah/tutorial/amali bagi jangka masa yang ditetapkan; dan
iv. lulus Pentaksiran Berterusan (PB) bagi kursus yang mempunyai komponen peperiksaan akhir.

3.1.2. Sekiranya pelajar tidak layak menduduki peperiksaan akhir atas sebab kehadiran kurang dari 80%, keseluruhan penilaian pelajar tersebut adalah terbatal. Pelajar akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan.

3.1.3. Jika seseorang pelajar itu telah digantung pengajian dan keputusan rayuan gagal atas tindakan tatatertib mengikut Akta 174;

i. pelajar tidak layak untuk menduduki peperiksaan akhir;
ii. penilaian semua kursus dalam semester berkenaan bagi pelajar tersebut adalah terbatal;
iii. pelajar perlu mengambil semula kursus tersebut; dan
iv. semester berkenaan diambil kira sebagai tempoh pengajian.

3.2. KEHADIRAN SEMASA PEPERIKSAAN AKHIR

3.2.1. Pelajar hendaklah menduduki sesuatu peperiksaan akhir pada masa yang ditetapkan bagi kursus-kursus yang memerlukannya berbuat demikian kecuali mendapat kebenaran Pengarah bagi perkara berikut:

i. disahkan sakit oleh pegawai perubatan kerajaan atau swasta; atau

ii. menghadapi kes-kes kecemasan seperti kes kematian keluarga terdekat, kemalangan, bencana alam atau kebakaran dengan pengesahan dari pihak berkuasa; atau

iii. berurusan mana-mana perkara undang-undang dengan pengesahan daripada pihak berkuasa; atau

iv. menyertai aktiviti yang diluluskan oleh Pengarah dengan mengemukakan surat pengesahan daripada pihak penganjur.

3.2.2. Pelajar atau wakilnya hendaklah memaklumkan ketidakhadiran dengan kadar segera kepada Pengarah.

3.2.3. Dalam keadaan tertentu, Pengarah boleh menggunakan budi bicaranya dalam melaksanakan arahan-arahan pada Perkara 3.2.1 (i), 3.2.1 (ii) dan 3.2.1 (iii).

3.2.4. Bagi pelajar yang tidak menghadiri peperiksaan akhir dengan kebenaran Pengarah dibenarkan menduduki Peperiksaan Akhir Khas dengan merujuk kepada Perkara 5.4.1**.**

3.2.5. Bagi pelajar yang tidak menghadiri peperiksaan akhir tanpa alasan yang munasabah, pelajar akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan. Pelajar dikira telah mengambil dan gagal kursus berkenaan.

3.2.6. Bagi pelajar yang tidak menghadiri peperiksaan akhir atas sebab dihalang daripada menduduki peperiksaan sebagai satu hukuman yang diputuskan oleh pihak berkuasa tatatertib akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan. Pelajar dikira telah mengambil dan gagal kursus berkenaan.

3.3. ARAHAN–ARAHAN AM PEPERIKSAAN AKHIR

Semua calon hendaklah mematuhi arahan–arahan berikut:

3.3.1. Sebelum peperiksaan akhir :

i. calon dikehendaki hadir untuk menduduki peperiksaan akhir pada tarikh, masa dan tempat yang telah ditetapkan;

ii. calon diminta berada di luar dewan/bilik peperiksaan lima belas (15) minit sebelum peperiksaan akhir bermula;

iii. calon dilarang masuk ke dalam dewan/bilik peperiksaan sehingga diarahkan berbuat demikian;

iv. calon hendaklah masuk dengan tertib mengikut laluan yang telah ditetapkan;

v. calon yang lewat lebih daripada tiga puluh (30) minit selepas peperiksaan akhir dimulakan dilarang masuk ke dalam dewan/bilik peperiksaan dan seterusnya tidak boleh menduduki peperiksaan akhir bagi kursus tersebut;

vi. calon yang lewat tetapi tidak melebihi tiga puluh (30) minit daripada waktu peperiksaan akhir bermula akan dibenarkan menduduki peperiksaan akhir tetapi waktu tamat peperiksaan akhir bagi kursus tersebut adalah sama dengan pelajar yang lain;

vii. calon dilarang membawa masuk ke dalam atau keluar dewan/bilik peperiksaan sebarang alat/bahan yang terdapat catatan bertulis kecuali yang dibenarkan oleh Pengawas Peperiksaan;

viii. calon dikehendaki membawa kad pelajar. Kegagalan membawa kad pelajar boleh menyebabkan calon dihalang daripada memasuki dewan/bilik peperiksaan untuk menduduki peperiksaan akhir kecuali mendapat kebenaran bertulis daripada Pegawai Peperiksaan untuk menduduki kursus berkenaan sahaja;

ix. calon yang berkeperluan khas semasa peperiksaan akhir perlu mengemukakan permohonan secara bertulis untuk dipertimbangkan oleh Pengarah;

x. calon dilarang menggunakan sebarang alat elektronik dan komunikasi kecuali yang dibenarkan oleh pengawas peperiksaan.

3.3.2. Semasa peperiksaan akhir:

i. calon hendaklah duduk di tempat yang telah ditentukan setelah masuk ke dewan/bilik peperiksaan;

ii. calon dilarang meniru, cuba meniru atau memberi tiru dengan apa-apa cara jua semasa peperiksaan akhir;

iii. calon hendaklah memastikan telah menerima kertas soalan yang betul dan lengkap. Sekiranya tidak, calon hendaklah memaklumkan pengawas peperiksaan yang bertugas;

iv. calon hendaklah membaca dengan teliti dan mematuhi semua arahan yang tercetak pada soalan peperiksaan akhir dan muka hadapan skrip jawapan;

v. calon hanya boleh mula dan berhenti menjawab apabila diarahkan berbuat demikian;

vi. calon dikehendaki mengisi maklumat di muka hadapan buku jawapan dan menurunkan tandatangan pada bahagian yang disediakan setelah diarahkan oleh pengawas peperiksaan;

vii. calon dilarang membuka kertas soalan yang telah diedarkan sebelum diarah berbuat demikian;

viii. calon dilarang meninggalkan dewan/bilik peperiksaan dalam tempoh tiga puluh (30) minit selepas peperiksaan akhir bermula dan lima belas (15) minit sebelum peperiksaan akhir tamat. Dalam keadaan tertentu yang memerlukan calon keluar dan masuk semula, kebenaran daripada pengawas peperiksaan adalah diperlukan dan calon hendaklah berada di bawah pengawasan;

ix. calon dilarang membuat sebarang perlakuan yang boleh mengganggu calon lain dan kelancaran peperiksaan akhir;

x. calon hendaklah memastikan bahawa skrip jawapan disusun dan diikat dengan sempurna pada akhir peperiksaan sebelum dikumpulkan oleh pengawas peperiksaan;

xi. calon hendaklah memastikan semua alatan yang digunakan disusun seperti yang dikehendaki oleh pengawas peperiksaan;

xii. calon hanya dibenarkan keluar dari dewan/bilik peperiksaan selepas mendapat arahan daripada pengawas peperiksaan;

xiii. calon dilarang makan dan minum di dalam dewan/bilik peperiksaan.

BAHAGIAN 4

PENYELEWENGAN AKADEMIK DAN PELANGGARAN PERATURAN

4.1. PENYELEWENGAN AKADEMIK

4.1.1. Pelajar tidak dibenarkan melakukan mana-mana penyelewengan akademik seperti berikut:

i. meniru, memberi tiru, cubaan meniru atau cubaan memberi tiru dalam penilaian;

ii. menipu atau cubaan menipu dalam penilaian.

4.2. LARANGAN TERHADAP PLAGIARISME

4.2.1. Larangan terhadap plagiarisme ini ialah seperti yang termaktub di dalam Akta 174.

4.2.2. Seseorang pelajar tidak boleh memplagiat apa-apa idea, penulisan, data atau ciptaan orang lain.

4.2.3. Bagi maksud ini, plagiarisme termasuklah:

i. perbuatan mengambil sesuatu idea, penulisan, data atau ciptaan orang lain dan mendakwa idea, penulisan, data atau ciptaan itu adalah hasil dapatan atau ciptaannya sendiri; atau

ii. suatu cubaan untuk menonjolkan atau perbuatan menonjolkan, dalam apa-apa cara, bahawa dia ialah sumber asal atau pencipta sesuatu idea, penulisan, data atau ciptaan yang adalah sebenarnya diambil daripada sumber lain.

4.2.4. Tanpa menjejaskan keluasan Perkara 4.2.3, seseorang pelajar memplagiat apabila:

i. menerbitkan, dengan dirinya sebagai pengarang, suatu ringkasan, artikel, kertas saintifik atau akademik atau buku yang pada keseluruhannya atau sebahagiannya ditulis oleh beberapa orang lain;

ii. menggabungkan dirinya atau membenarkan dirinya digabungkan sebagai pengarang bersama sesuatu ringkasan, artikel, kertas saintifik atau akademiknya, atau buku, apabila dia tidak langsung membuat apa-apa sumbangan bertulis kepada ringkasan, artikel, kertas saintifik atau akademik, atau buku itu;

iii. memaksa orang lain untuk memasukkan namanya dalam senarai penyelidik bersama bagi projek penyelidikan tertentu atau dalam senarai penyelidik bersama bagi penerbitan apabila dia tidak membuat apa-apa sumbangan yang boleh melayakkan dirinya sebagai penyelidik bersama atau pengarang bersama;

iv. memetik data akademik yang adalah hasil penyelidikan yang dijalankan oleh beberapa orang lain, seperti dapatan makmal atau dapatan kerja lapangan, atau data yang diperoleh melalui penyelidikan perpustakaan, sama ada diterbitkan atau tidak diterbitkan, dan menggabungkan data tersebut sebagai sebahagian daripada penyelidikan akademiknya tanpa memberi pengiktirafan sewajarnya kepada sumber asal;

v. menggunakan data penyelidikan yang diperoleh melalui kerja usahasama dengan beberapa orang lain, sama ada atau tidak dengan orang lain itu anggota kakitangan atau pelajar institusi sebahagian daripada penyelidikan akademik yang berbeza yang lain, atau bagi penerbitan atas namanya sendiri sebagai pengarang tunggal, tanpa memperoleh keizinan penyelidik bersamanya sebelum memulakan penyelidikan peribadinya atau sebelum menerbitkan data;

vi. mentranskripsikan idea atau ciptaan orang lain yang disimpan dalam apa-apa jua bentuk, sama ada bertulis, bercetak atau tersedia dalam bentuk elektronik, atau dalam bentuk slaid, atau dalam apa-apa jua bentuk pengajaran atau perkakas penyelidikan atau dalam apa-apa bentuk lain dan mengaku sama ada secara langsung atau tidak langsung bahawa dia ialah pencipta idea atau ciptaan itu;

vii. menterjemah tulisan atau ciptaan orang lain daripada satu bahasa kepada bahasa lain sama ada atau tidak secara keseluruhan atau sebahagian, dan kemudian mengemukakan terjemahan itu ke dalam apa-apa jua bentuk atau cara sebagai penulisannya atau ciptaannya sendiri;

viii. memetik idea daripada penulisan atau ciptaan orang lain dan membuat beberapa pengubahsuaian tanpa rujukan sewajarnya

kepada sumber asal dan menyusun semula idea itu dalam apa apa cara yang seolah-olah dia ialah pencipta idea-idea itu.

4.3. TINDAKAN PELANGGARAN PERATURAN

4.3.1. Seseorang pelajar yang didapati melanggar mana-mana Arahan-Arahan Am Peperiksaan Akhir pada Perkara 3.3.1 dan 3.3.2 boleh dikenakan tindakan seperti berikut:

i. amaran; atau

ii. dimansuhkan markah penilaian bagi kursus berkenaan dan diberikan Gred F dengan Nilai Mata 0.00.

4.3.2. Pelajar yang telah dibuktikan melakukan Perkara 4.1.1 atau Perkara 4.2 akan dimansuhkan penilaian bagi kursus berkenaan dan diberikan Gred F dengan Nilai Mata 0.00.

4.3.3. Seseorang pelajar yang digantung pengajian dan keputusan rayuan gagal atas tindakan tatatertib mengikut Akta 174;

i. penilaian bagi semua kursus yang diambil pelajar tersebut dalam semester berkenaan adalah terbatal;

iii. pelajar perlu mengambil semula kursus tersebut; dan

iii. semester berkenaan diambil kira sebagai tempoh pengajian.

4.3.4. Selain daripada Perkara 4.3.1, 4.3.2 dan 4.3.3, pelajar-pelajar yang melanggar Peraturan Peperiksaan juga boleh dikenakan tindakan tatatertib merujuk panduan dan peraturan am pelajar yang sedang berkuatkuasa.

BAHAGIAN 5

KAEDAH PENILAIAN

5.1. SISTEM NILAI MATA

5.1.1. Sistem penilaian politeknik dan kolej komuniti adalah berdasarkan kaedah penilaian kuantitatif prestasi pelajar di dalam sesuatu program yang dikenali sebagai Sistem Nilai Mata (SNM).

5.1.2. Mengikut Sistem Nilai Mata, prestasi pelajar bagi sesuatu kursus adalah berdasarkan kepada Sistem Gred yang mana pencapaian pelajar dinilai menggunakan dua (2) ukuran iaitu:

i. Purata Nilai Mata (PNM) atau *Grade Point Average* (GPA)

$$\textbf{PNM} = \frac{\text{Jumlah Mata Kredit yang diperolehi dalam semester semasa}}{\text{Jumlah Jam Kredit yang diambil di dalam semester semasa}}$$

ii. Himpunan Purata Nilai Mata (HPNM) atau *Cumulative Grade Point Average* (CGPA)

$$\textbf{HPNM} = \frac{\text{Jumlah Mata Kredit yang diperolehi hingga kini}}{\text{Jumlah Jam Kredit yang diambil hingga kini}}$$

5.1.3. Nilai mata bagi pelajar Latihan Industri dan *Work Based Learning* adalah seperti berikut:

i. penilaian Latihan Industri tidak akan diambil kira dalam menentukan Himpunan Purata Nilai Mata pelajar.

ii. penilaian *Work Based Learning* akan diambil kira dalam menentukan Himpunan Purata Nilai Mata pelajar.

5.2. SISTEM GRED

Markah yang diperolehi oleh pelajar di dalam sesuatu kursus akan diberi nilai mata dan gred mengikut seperti berikut:

Jadual 5.2.1 : Sistem Gred

MARKAH	NILAI MATA	GRED	STATUS*
90 - 100	4.00	A+	Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Cemerlang
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Kepujian
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Lulus
44 – 46	1.33	D+	Lulus
40 – 43	1.00	D	Lulus
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

*Nota : Status gred tidak terpakai bagi program-program tertentu

5.3. SYARAT LULUS KURSUS

Pelajar layak dinilai prestasi akademik dengan memenuhi syarat berikut:

5.3.1. Telah mencapai kehadiran 80% atau seperti yang ditetapkan bagi aktiviti pembelajaran yang diwajibkan bagi sesuatu kursus.

5.3.2. Lulus kedua-dua pentaksiran berterusan (PB) dan peperiksaan akhir/pentaksiran akhir (PA) bagi setiap kursus.

5.3.3. Markah lulus adalah seperti berikut:

i. Pentaksiran Berterusan = 40%; dan

ii. Pentaksiran Akhir = 40%; atau

iii. Peperiksaan Akhir = 20% (kecuali bagi program-program tertentu mengikut keperluan badan akreditasi).

5.3.4. Markah kumulatif pentaksiran berterusan (PB) dan peperiksaan akhir/pentaksiran akhir (PA) adalah menepati syarat lulus mengikut Sistem Gred.

5.4. PEPERIKSAAN AKHIR KHAS (PAK), PENILAIAN KHAS (PK) DAN PEMBERIAN STATUS GRED TIDAK LENGKAP (GRED T)

5.4.1. Peperiksaan Akhir Khas (PAK)

i. Pelajar yang layak dipertimbangkan untuk menduduki Peperiksaan Akhir Khas adalah seperti berikut:

a. disahkan sakit oleh pegawai perubatan kerajaan atau swasta; atau

b. menghadapi kes-kes kecemasan seperti kes kematian keluarga terdekat, kemalangan, bencana alam atau kebakaran dengan pengesahan dari pihak berkuasa; atau

c. berurusan mana-mana perkara undang-undang dengan pengesahan dari pihak berkuasa; atau

d. menyertai aktiviti yang diluluskan oleh Pengarah dengan mengemukakan surat pengesahan daripada pihak penganjur.

ii. Peperiksaan Akhir Khas juga dilaksanakan sekiranya peperiksaan akhir bagi mana-mana kursus pada semester berkenaan dibatalkan. Peperiksaan Akhir Khas akan diadakan pada masa dan tarikh yang sesuai bagi pelajar dan dipersetujui oleh Pegawai Peperiksaan.

iii. Sekiranya pelajar tidak hadir Peperiksaan Akhir Khas dengan sebab yang munasabah, markah **SIFAR (0)** akan diberikan bagi Peperiksaan Akhir Khas tersebut dan markah penilaian hanya akan dikira berdasarkan markah pentaksiran berterusan.

iv. Sekiranya pelajar tidak hadir tanpa sebab, pelajar akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan. Pelajar dikira telah mengambil dan gagal kursus berkenaan.

5.4.2. Penilaian Khas (PK)

i. Penilaian Khas adalah satu bentuk penilaian yang hanya dibenarkan kepada pelajar yang telah mengambil semua kursus bagi sesuatu program tidak termasuk Latihan Industri/*Work Based Learning* dan memenuhi syarat-syarat berikut:
   a. mendapat keputusan Kedudukan Baik (KB);
   b. gagal **SATU (1)** kursus sahaja;
   c. telah menduduki peperiksaan akhir (PA) bagi kursus berkenaan (jika berkaitan);
   d. tidak dikenakan tindakan tatatertib;
   e. keputusan pelajar yang lulus Penilaian Khas akan mendapat maksimum Gred C sahaja; dan
   f. telah diperakukan oleh Jawatankuasa Peperiksaan institusi.

ii. Kaedah pelaksanaan Penilaian Khas hendaklah ditentukan oleh Jawatankuasa Peperiksaan institusi:
   a. menduduki peperiksaan akhir sahaja; atau
   b. menduduki peperiksaan akhir dan melaksanakan pentaksiran berterusan (PB); atau
   c. melaksanakan sepenuhnya pentaksiran berterusan (PB).

iii. Bagi pelajar yang gagal mana-mana kursus yang melibatkan pentaksiran berterusan (PB) dan pentaksiran akhir (PA), penetapan sama ada pelajar perlu melaksanakan Penilaian Khas atau mengulang kursus diputuskan oleh Jawatankuasa Peperiksaan institusi.

iv. Pelaksanaan Penilaian Khas perlu dilaksanakan dalam tempoh maksimum **EMPAT (4)** minggu.

v. Pelajar perlu mendaftar untuk kursus yang berkenaan.

vi. Penilaian Khas tidak layak bagi pelajar yang mengambil semester pendek dan kursus-kursus yang dilaksanakan secara *Work Based Learning*.

vii. Penilaian Khas layak ditawarkan sekali sahaja dan sekiranya gagal, pelajar dikehendaki mengulang kursus tersebut.

viii. Penilaian Khas dilaksanakan selepas mesyuarat Jawatankuasa Peperiksaan institusi.

5.4.3. Pemberian Status Gred Tidak Lengkap (Gred T)

i. Pemberian Gred T bertujuan membolehkan pelajar melengkapkan penilaian kursus yang tertangguh ketika menghadapi musibah seperti wabak penyakit, bencana alam, darurat atau apa jua sebab yang bukan bersifat individu.

ii. Pelaksanaan Gred T perlu dilengkapkan dalam tempoh yang ditetapkan berdasarkan panduan pemberian status gred T yang sedang berkuat kuasa.

BAHAGIAN 6

KEPUTUSAN PENILAIAN

6.1. KATEGORI KEPUTUSAN PENILAIAN

Keputusan penilaian bagi setiap semester akan dikategorikan kepada:

6.1.1. **Lulus Penuh (LP)**

Pelajar semester akhir yang memperolehi Himpunan Purata Nilai Mata bersamaan atau lebih daripada 2.00 dan memenuhi syarat serta layak dianugerahkan sijil akademik.

6.1.2. **Kedudukan Baik (KB)**

Pelajar memperoleh Himpunan Purata Nilai Mata bersamaan atau lebih daripada 2.00.

6.1.3. **Kedudukan Bersyarat (KS)**

Pelajar memperoleh Himpunan Purata Nilai Mata bersamaan atau lebih daripada 1.60 dan kurang daripada 2.00

6.1.4. **Gagal dan Diberhentikan (GB)**

Kedudukan Gagal dan Diberhentikan diberikan kepada pelajar sekiranya:

i. memperolehi Himpunan Purata Nilai Mata kurang daripada 1.60; atau
ii. memperolehi Purata Nilai Mata kurang daripada 1.00 kecuali bagi pelajar yang dinyatakan pada perkara 2.3.1 (i), 2.3.1 (ii), dan 2.3.1 (iii); atau
iii. gagal sesuatu kursus sebanyak **TIGA (3)** kali termasuk peperiksaan akhir khas atau penilaian khas atau semester pendek; atau
iv. memperolehi keputusan Kedudukan Bersyarat **TIGA (3)** kali berturut-turut tidak termasuk semester pendek; atau
v. gagal Latihan Industri sebanyak **DUA (2)** kali; atau
vi. gagal kursus yang sama semasa *Work Based Learning* **DUA (2)** kali; atau
vii. telah melebihi tempoh maksimum pengajian sesuatu program.

6.2. PENGUMUMAN KEPUTUSAN PENILAIAN

Pegawai Peperiksaan akan mengumumkan keputusan penilaian bagi pihak Jawatankuasa Peperiksaan institusi pada tarikh keputusan rasmi.

6.3. SYARAT LAYAK MENERUSKAN PENGAJIAN

Pelajar yang mendapat keputusan Kedudukan Baik (KB) dan Kedudukan Bersyarat (KS) adalah layak meneruskan pengajian ke semester berikutnya.

6.4. SYARAT LAYAK KE LATIHAN INDUSTRI DAN *WORK-BASED LEARNING* (WBL)

i. Pelajar layak menjalani latihan industri dan *work based learning* apabila lulus semua kursus serta memperolehi HPNM 2.00 dan ke atas.

ii. Memenuhi syarat-syarat seperti dinyatakan dalam panduan pelaksanaan program pengajian *work based learning* dan latihan industri yang sedang berkuat kuasa.

BAHAGIAN 7

RAYUAN

7.1. RAYUAN KEPUTUSAN

7.1.1. Pelajar yang ingin membuat rayuan terhadap keputusan penilaian boleh berbuat demikian secara bertulis kepada Jawatankuasa Peperiksaan institusi dalam tempoh empat belas (14) hari daripada tarikh keputusan rasmi. Rayuan hendaklah disertakan dengan alasan-alasan munasabah dan bukti-bukti berkaitan.

7.1.2. Pelajar dikenakan bayaran sebanyak RM50.00 bagi setiap rayuan yang dikemukakan dan dibuat mengikut prosedur kewangan institusi berkenaan.

7.1.3. Keputusan rayuan akan dimaklumkan kepada pelajar oleh Pegawai Peperiksaan mengikut tarikh keputusan rasmi rayuan. Keputusan rayuan adalah muktamad.

7.2. SEMAKAN SEMULA SKRIP JAWAPAN

7.2.1. Pelajar yang ingin membuat penyemakan semula skrip jawapan sesuatu kursus hendaklah mengemukakan permohonan secara bertulis kepada Jawatankuasa Peperiksaan institusi dalam tempoh empat belas (14) hari dari tarikh keputusan rasmi diumumkan.

7.2.2. Pelajar akan dikenakan bayaran sebanyak RM25.00 bagi setiap kursus dan hendaklah dibuat mengikuti prosedur kewangan institusi.

7.2.3. Keputusan semakan semula akan dimaklumkan kepada pelajar oleh Pegawai Peperiksaan mengikut tarikh keputusan rasmi rayuan. Keputusan rayuan adalah muktamad.

BAHAGIAN 8

PENGANUGERAHAN

8.1. TEMPOH PENGAJIAN

8.1.1. Tempoh pengajian bagi sesuatu program adalah seperti berikut:

Jadual 8.1.1 : Tempoh Pengajian

INSTITUSI	PROGRAM	MINIMUM (Semester)	MAKSIMUM (Semester)
Politeknik	Sarjana Muda	6	11
	Diploma	5	9
	Sijil	4	7
	Sijil Khas	4	7
	Asasi	2	2
Kolej Komuniti	Diploma	5	8
	Sijil	4	7
	Sijil Khas	4	7

8.1.2. Merujuk kepada Akta 174 tempoh gantung pengajian pelajar tidak termasuk di dalam pengiraan tempoh pengajian sekiranya pelajar:

i. dibebaskan daripada hukuman yang dijatuhkan oleh mahkamah; dan

ii. dibebaskan dari hukuman sekatan atau perintah tahanan yang dijatuhkan oleh mahkamah atau mana-mana pihak berkuasa.

8.1.3. Tempoh gantung pengajian pelajar yang dikenakan hukuman tatatertib oleh pihak institusi adalah termasuk di dalam pengiraan tempoh pengajian.

8.1.4. Dalam keadaan tertentu, jika berlaku sebarang permohonan perlanjutan tempoh pengajian melebihi dari had yang dibenarkan, ianya perlu diputuskan

dalam Mesyuarat Pengurusan Jabatan Pendidikan Politeknik dan Kolej Komuniti.

8.1.5. Perkara 8.1.1., 8.1.2., 8.1.3. & 8.1.4. adalah merujuk kepada panduan dan peraturan am pelajar politeknik dan kolej komuniti yang sedang berkuatkuasa yang dikeluarkan oleh Bahagian Ambilan dan Pembangunan Pelajar, Jabatan Pendidikan Politeknik dan Kolej Komuniti.

8.2. SYARAT LAYAK PENGANUGERAHAN

Pelajar dianggap telah menamatkan pengajian dan layak dianugerahkan sijil akademik bagi sesuatu program yang ditetapkan sekiranya telah memenuhi kriteria berikut:

8.2.1. Lulus semua kursus yang ditetapkan bagi program berkenaan;

8.2.2. Mendapat Himpunan Purata Nilai Mata bersamaan atau lebih daripada 2.00;

8.2.3. Melengkapkan sepenuhnya jumlah kredit yang ditetapkan bagi sesuatu program;

8.2.4. Tidak melebihi tempoh maksimum pengajian; dan

8.2.5. Telah diperakui oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti.

8.3. PENGANUGERAHAN SIJIL AKADEMIK SECARA AEGROTAT DAN ANUMERTA

8.3.1. Penganugerahan sijil akademik secara Aegrotat dan Anumerta bertujuan untuk memberikan pengiktirafan dan penghormatan kepada pelajar yang tidak dapat menamatkan pengajian disebabkan hilang upaya kekal semasa dalam pengajian atau meninggal dunia, tetapi telah memenuhi sebahagian besar syarat penganugerahan.

8.3.2. Pemberian anugerah ini perlu memenuhi syarat-syarat seperti yang dinyatakan dalam panduan berkaitan aegrotat dan anumerta yang sedang berkuat kuasa.

8.4. SIJIL DAN TRANSKRIP AKADEMIK

8.4.1. Sijil dan transkrip akademik diberikan kepada pelajar setelah tamat sesuatu program pengajian dan disahkan oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti.

8.4.2. Permohonan sijil dan transkrip akademik gantian akan dikenakan bayaran seperti berikut:

Jadual 8.4.2 : Kadar Bayaran

PERKARA	BAYARAN (RM)
Sijil (versi BM / BI)	50.00 per sijil
Transkrip	10.00

8.4.3. Bayaran perlu dibuat mengikut prosedur kewangan institusi.

8.5. PENGECUALIAN BAYARAN BAGI PERMOHONAN SIJIL DAN TRANSKRIP AKADEMIK GANTIAN

8.5.1. Bayaran bagi permohonan salinan sijil gantian dan transkrip akademik kepada lulusan yang terkesan akibat bencana adalah **DIKECUALIKAN**.

8.5.2. Pengecualian bayaran adalah seperti berikut:

i. Bencana yang berlaku di tempat kediaman lulusan;

ii. Permohonan perlu dikemukakan oleh lulusan sendiri dalam tempoh enam (6) bulan daripada tarikh ditimpa bencana;

iii. Tatacara pengecualian bayaran adalah dengan mendapat kelulusan pengarah institusi beserta dokumen sokongan yang disahkan oleh pihak berkuasa berkenaan aduan kerosakan disebabkan oleh bencana.

8.6. PENARIKAN BALIK ATAU PEMBATALAN SIJIL

Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti berhak menarik balik sijil akademik yang telah dianugerahkan kepada seseorang lulusan jika didapati mengemukakan dokumen kelayakan palsu semasa membuat permohonan kemasukan ke politeknik/kolej komuniti atau melakukan mana-mana penyelewengan akademik.

Keputusan Lembaga Peperiksaan dan Penganugerahan Sijil/ Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti adalah muktamad.

LAMPIRAN A

Sistem Gred Program Diploma Kejuruteraan Perkapalan (DKP)

MARKAH	NILAI MATA	GRED	STATUS*
90 - 100	4.00	A+	Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Cemerlang
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Kepujian
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Gagal
44 – 46	1.33	D+	Gagal
40 – 43	1.00	D	Gagal
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

JAWATANKUASA

PENAUNG	:	YBhg. Dato' Dr. Haji Mohd Zahari bin Ismail Ketua Pengarah Pendidikan Politeknik dan Kolej Komuniti
PENASIHAT	:	Puan Hilmun binti Mohamed Pengarah Bahagian Peperiksaan dan Penilaian (BPN)
PENGERUSI	:	Dr. Mohamad Kazar bin Razali (BPN)
TIMBALAN PENGERUSI	:	Puan Siti Normazila binti Abdul Aziz (BPN) Puan Syakirah binti Mansor (BPN)
KETUA EDITOR	:	Puan Hasnizah bt Amran (BPN)
EDITOR	:	Puan Nurul Hananie binti Mazlan (BPN) Puan Shahima binti Mohd Nadzri (BPN) Puan Murni binti Jainaf @ Jamingon (BPN) Dr. Mohamad Kazar bin Razali (BPN)
KETUA PENULIS	:	Puan Hasnizah bt Amran (BPN)
PENULIS	:	Dr. Mohamad Kazar bin Razali (BPN) Puan Nurul Hananie binti Mazlan (BPN) Puan Shahima binti Mohd Nadzri (BPN) Puan Murni binti Jainaf @ Jamingon (BPN) Puan Noor Afziha binti Ngarisan (BPN) Puan Rosazlinda binti Mohd Ishak (BPN) Encik Yang Syazlan bin Shamsuddin (BPN) Encik Shahrom Nurrizam bin Romli (BPN) Dr. Nadia binti Hairi (BPN) Puan Fatimah binti Khair (BPN) Puan Nur Haslinda binti Mohd Sailan (PNS) Puan Masrulanita binti Mohamed (PSA) Cik Fauziah binti Yusoff (PSAS) Encik Mohd Shahir bin Dzulkapli (PSIS) Puan Fardanadia binti Sulaiman (KKHL) Puan Fasehahnoor binti Yaacob (KKKL)
REKA BENTUK GRAFIK	:	Encik Yang Syazlan bin Shamsuddin (BPN)

PENGHARGAAN

Setinggi-tinggi penghargaan dan ucapan terima kasih kepada Ahli Mesyuarat Pengurusan JPPKK, Ahli Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik, Jawatankuasa Peperiksaan Pusat Kolej Komuniti, Pengarah-pengarah Politeknik dan Kolej Komuniti, Timbalan-timbalan Pengarah Politeknik dan Kolej Komuniti, Pegawai Peperiksaan Politeknik dan Kolej Komuniti dan semua warga politeknik dan kolej komuniti serta semua pihak yang terlibat secara langsung atau tidak langsung dalam sumbangan idea dan sokongan bagi penerbitan Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama 2025.

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI
Galeria PjH, Aras 6, Jalan P4W
Persiaran Perdana, Presint 4
62100 W.P. PUTRAJAYA
Tel: 03-8888 2630 Faks: 03-8888 5634

Ruj. Kami : JPPKK.BPN.100 - 1/5/1 (12)
Tarikh : 28 Februari 2025

PENGARAH POLITEKNIK
PENGARAH KOLEJ KOMUNITI

YBrs. Dr./Ts./ Tuan/Puan,

PENGGUNAAN ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN EDISI PERTAMA TAHUN 2025

Dengan segala hormatnya, perkara di atas dirujuk.

2. Sukacita dimaklumkan bahawa Bahagian Peperiksaan dan Penilaian (BPN), JPPKK telah membangunkan Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama Tahun 2025. Arahan peperiksaan dan kaedah penilaian ini dibangunkan sebagai satu ketetapan bagi semua politeknik dan kolej komuniti dalam mengendalikan segala urusan yang berkaitan dengan peraturan peperiksaan dan kaedah penilaian.

3. Garis panduan ini berkuat kuasa mulai Sesi II: 2024/2025 dan boleh dimuat turun di laman sesawang https://www.mypolycc.edu.my atau http://bpn.mypolycc.edu.my (Portal BPN > Muat Turun > Garis Panduan). Adalah dimaklumkan bahawa **Arahan - Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Edisi 6, Jun 2019** dan **Peraturan Peperiksaan Dan Kaedah Penilaian Kolej Komuniti Edisi 2017** dengan ini **TERBATAL** berkuat kuasa serta-merta.

4. Bagi Perkara 5.2 berkaitan sistem gred seperti Lampiran 1 akan mula digunapakai bagi pelajar semester 1 ambilan Sesi II: 2024/2025. Pelajar ambilan sebelum Sesi II: 2024/2025 masih menggunakan sistem gred yang terdahulu seperti di Lampiran 2 bagi politeknik dan Lampiran 3 bagi kolej komuniti.

Kerjasama dan keprihatinan daripada pihak YBrs. Dr./Ts./tuan/puan mengenai perkara ini amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(HILMUN BINTI MOHAMED A.M.(M))
Pengarah

LAMPIRAN 1

Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama Tahun 2025

Perkara 5.2: Sistem Gred

5.2. SISTEM GRED

Markah yang diperolehi oleh pelajar di dalam sesuatu kursus akan diberi nilai mata dan gred mengikut seperti berikut:

Jadual 5.2.1 : Sistem Gred

MARKAH	NILAI MATA	GRED	STATUS*
90 - 100	4.00	A+	Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Cemerlang
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Kepujian
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Lulus
44 – 46	1.33	D+	Lulus
40 – 43	1.00	D	Lulus
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

*Nota : Status gred tidak terpakai bagi program-program tertentu

LAMPIRAN 2

Arahan-Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Edisi 6

Perkara 19 : Sistem Gred

19. SISTEM GRED

Markah yang diperolehi oleh pelajar di dalam sesuatu kursus akan diberi nilai mata dan gred mengikut kumpulan seperti berikut:

Jadual 19.1 : Sistem Gred

Markah	Nilai Mata	Gred	Status*
90 - 100	4.00	A+	Sangat Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Kepujian
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Lulus
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Lulus
44 – 46	1.33	D+	Lulus
40 – 43	1.00	D	Lulus
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

*Nota : *Status gred tidak terpakai bagi program-program tertentu.*

LAMPIRAN 3

Peraturan Peperiksaan dan Kaedah Penilaian Kolej Komuniti Kementerian Pendidikan Tinggi (Edisi Kelima)

Perkara 4.1 : Sistem Gred

4.1 SISTEM GRED

4.1.1 Semua markah yang diperolehi oleh pelajar bagi sesuatu kursus / LA akan dinyatakan dalam bentuk gred seperti Jadual 1.

Markah	Gred	Nilai Mata	Status
90 – 100	A+	4.00	Sangat Cemerlang
80 – 89	A	4.00	Cemerlang
75 – 79	A-	3.67	Kepujian
70 – 74	B+	3.33	
65 – 69	B	3.00	
60 – 64	B-	2.67	Baik
55 – 59	C+	2.33	
50 – 54	C	2.00	
47 – 49	C-	1.67	Lulus Bersyarat
44 – 46	D+	1.33	
40 – 43	D	1.00	
0 – 39	F	0.00	Gagal

Jadual 1

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
ARAS 6, GALERIA PJH
JALAN P4W, PERSIARAN PERDANA, PRESINT 4
62100 W.P PUTRAJAYA

TEL: 03-8888 2630
https://www.mypolycc.edu.my

Appendix C3-2m : Grading System for the Polytechnic

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI
Galeria PjH, Aras 6, Jalan P4W
Persiaran Perdana, Presint 4
62100 W.P. PUTRAJAYA
Tel: 03-8888 2630 Faks: 03-8888 5634

Ruj. Kami : JPPKK. BPN. 100-1/7/1 (39)
Tarikh : 16 Februari 2023

PENGARAH POLITEKNIK
PENGARAH KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI

YBrs. Dr. /Tuan / Puan,

PENETAPAN MARKAH LULUS PENTAKSIRAN BERTERUSAN, PENILAIAN AKHIR DAN PEPERIKSAAN AKHIR BAGI PROGRAM PENGAJIAN POLITEKNIK DAN KOLEJ KOMUNITI

Dengan segala hormatnya perkara diatas adalah dirujuk.

2. Sukacita dimaklumkan, Mesyuarat Pengurusan Jabatan Pendidikan Politeknik dan Kolej Komuniti Bil 1/2023 bersetuju menetapkan syarat lulus Pentaksiran Berterusan, Penilaian Akhir dan Peperiksaan Akhir **bagi semua Program Pengajian Politeknik dan Kolej Komuniti mulai Sesi II : 2022/2023** tidak termasuk Program Diploma Teknologi Maklumat (Teknologi Digital) (DDT) dan Program Diploma Kejuruteraan Penyenggaraan Pesawat (DAM).

3. Untuk makluman, penetapan markah lulus ini perlu dilaksanakan bagi menepati keperluan enam (6) standard program yang menetapkan syarat perlu lulus kedua-dua Pentaksiran Berterusan (PB) dan Peperiksaan Akhir / Penilaian Akhir (PA) bagi setiap mata pelajaran / kursus. Markah lulus yang ditetapkan ialah **Pentaksiran Berterusan = 40%, Penilaian Akhir = 40% dan Peperiksaan Akhir = 20%.** Markah lulus ini diperluaskan kepada semua program sebagai persediaan pensyarah dan pelajar bagi menghadapi penambahbaikan semua standard program ke arah perlu lulus kedua-dua PB dan PA.

4. Sehubungan dengan itu, syarat perlu lulus kedua-dua PB dan PA akan dinyatakan dalam dokumen kurikulum serta sistem aplikasi pengurusan peperiksaan politeknik dan kolej komuniti. Pelaksanaan peperiksaan akhir diselaraskan di peringkat Bahagian Peperiksaan dan Penilaian JPPKK manakala bagi lain-lain penilaian adalah tertakluk kepada pengurusan di peringkat institusi masing-masing berdasarkan kepada garis panduan berkaitan yang sedang berkuatkuasa.

5. YBrs. Dr. /Tuan / Puan dimohon untuk mengambil perhatian dan makluman tentang perkara ini serta melaksanakan tindakan selanjutnya di peringkat pengurusan akademik bagi memastikan markah lulus pentaksiran ini dipatuhi.

Kerjasama dan keprihatinan daripada pihak YBrs. Dr. /Tuan / Puan tentang perkara ini amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MOHD NOOR BIN SHAHUDIN)
Pengarah Kanan (Akademik)
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Tinggi

s.k :

1. Pengarah Bahagian Peperiksaan dan Penilaian (BPN)
2. Pengarah Bahagian Kurikulum (BK)
3. Pengarah Bahagian Instruksional dan Pembelajaran Digital (BIPD)
4. Pengarah Bahagian Governan dan Kecemerlangan (BGK)
5. Pengarah Bahagian Ambilan dan Pengambilan Pelajar (BAPP)
6. Pengarah Bahagian Perancangan Program dan Institusi (BPPI)
7. Pengarah Bahagian Kompetensi dan Peningkatan Kerjaya (BKPK)
8. Pengarah Bahagian Koordinasi TVET (BKTVET)
9. Pengarah Bahagian Pusat Penyelidikan dan Inovasi (PPI)
10. Pengarah Bahagian Kolaborasi Industri dan Komuniti (BKIK)
11. Ketua Unit Komunikasi dan Hubungan Korporat (UKK)

PRACTICAL TASK 1

Programme	:	DKM / DMP
Course Code	:	DJJ20273 FLUID MECHANICS
Title	:	PT1 – Density
Course Learning Outcome (CLO)	:	Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)
Group members	:	1)
Name / Matrix No	:	2)
	:	3)
	:	4)

OBJECTIVE :

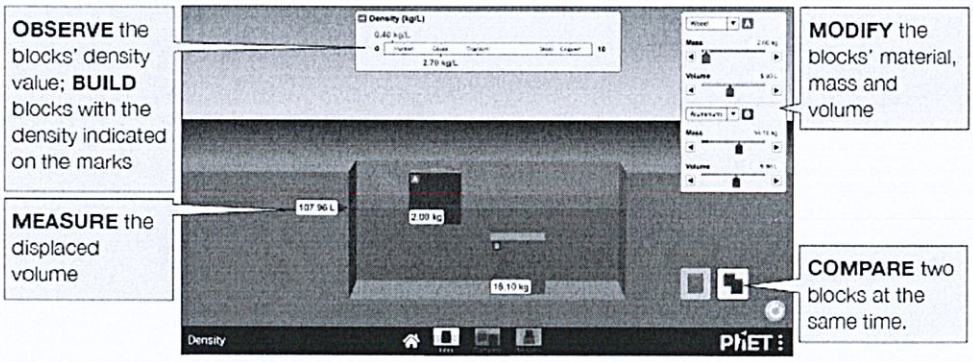
At the end of experiment, student should be able to:

1. Explain about the density of fluid.

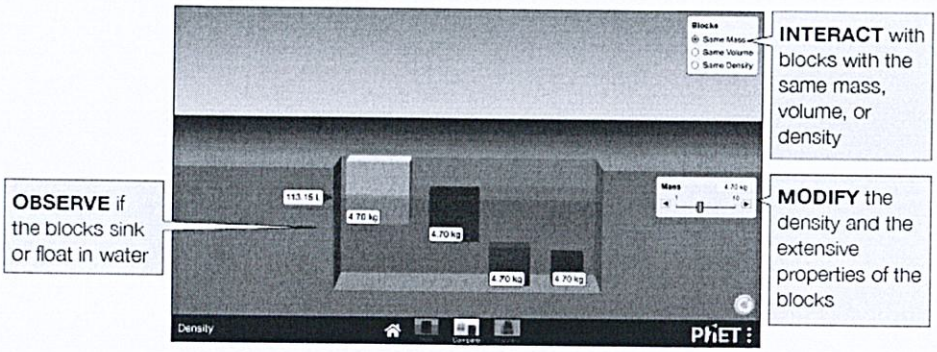
TASK INSTRUCTIONS :

1. Enter the link above into the address bar.
   https://phet.colorado.edu/sims/html/density/latest/density_all.html

2. **Intro Screen**
   Interact with blocks of different materials, including a custom option. Modify their mass and volume to explore the effect on the density and discover the conditions for sinking or floating in water. On the Intro Screen, adjusting the mass of a given substance (such as Brick) will result in a change to its volume to maintain a constant density, and vice versa. To independently adjust the mass and the volume, use the Custom option.



3. **Compare Screen**
Compare the similarities and differences of four blocks that have the same mass, volume, or density.



DISCUSSION :

1. Describe how the mass and volume are related to the density of a material.
2. Explain why changing the volume or mass of a material doesn't change its density.
3. Find a way to measure the block's volume.

CONCLUSION :

REFERENCE :

Prepared by :

.....

(WAN MAJDAH BINTI TON MAMAT)
Course Coordinator

Approved by

.....

(MOHD SHARIZAN BIN MOHD SHARIF)
Programme Leader

PRACTICAL TASK 2

Programme	:	DKM / DMP
Course Code	:	DJJ20273 FLUID MECHANICS
Title	:	PT2 - Pressure
Course Learning Outcome (CLO)	:	Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)
Group members	:	1)
Name / Matrix No	:	2)
	:	3)
	:	4)

OBJECTIVE :

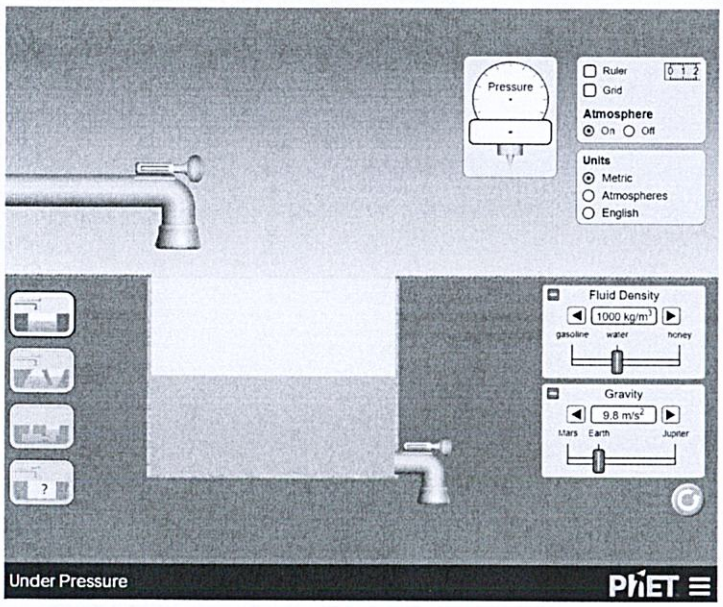
At the end of experiment, student should be able to:

1. Understand the relationship between pressure and depth in a liquid

TASK INSTRUCTIONS :

1. Enter the link above into the address bar.

   https://phet.colorado.edu/sims/html/under-pressure/latest/under-pressure_all.html



2. Above the spigot there is a sliding tab. Move the tab to the right to fill the tank up completely with water.
3. In the top right corner of the window you can click and drag a pressure gauge to any location on the screen. The bottom of the gauge is the point where pressure is measured.
4. Measure and record the pressure of the water at the surface, in the middle, and at the bottom of the tank of water.
5. Repeat the procedure with gasoline and honey.

DISCUSSION :

1. Explain about the relationship between pressure and depth in a liquid.

CONCLUSION :

REFERENCE :

Prepared by :

.....

(WAN MAJDAH BINTI TON MAMAT)
Course Coordinator 06/01/2025

WAN MAJDAH BINTI TON MAMAT
Pensyarah
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

Approved by :

.....

( )
Programme Leader

MOHD SHARIZAN BIN MOHD SHARIF
Ketua Program Mekanikal Am
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah
6/1/25

PRACTICAL TASK 3

Programme	:	DKM / DMP
Course Code	:	DJJ20273 FLUID MECHANICS
Title	:	PT3 – Bernoulli Theorem
Course Learning Outcome (CLO)	:	Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)
Group members	:	1)
Name / Matrix No	:	2)
	:	3)
	:	4)

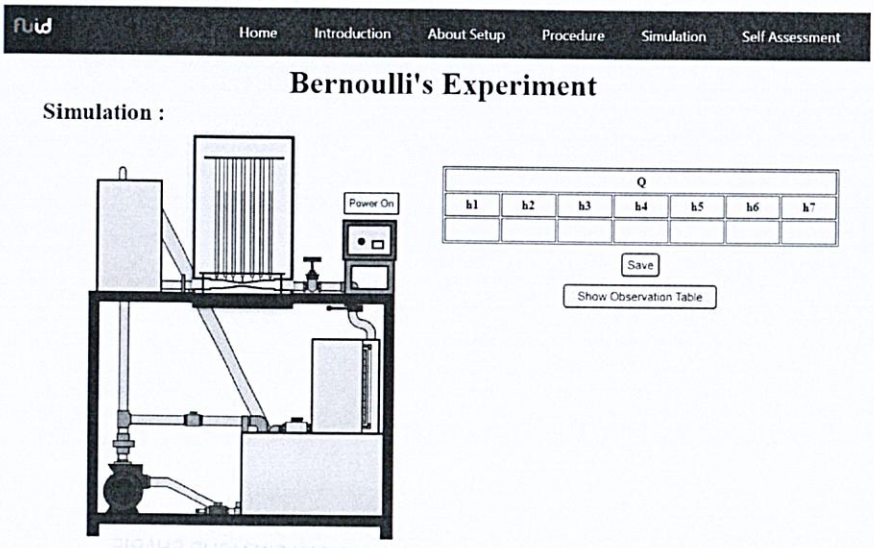
OBJECTIVE :

At the end of experiment, student should be able to:

1. Explain about the flow of fluid in venturi meter.

TASK INSTRUCTIONS :

1. Enter the link above into the address bar.
   https://me.iitp.ac.in/Virtual-Fluid-Laboratory/bernoulli/simulation.html



PRACTICAL TASK 4

Programme	:	DKM / DMP
Course Code	:	DJJ20273 FLUID MECHANICS
Title	:	PT4 – Flow of fluid
Course Learning Outcome (CLO)	:	Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)
Group members	:	1)
Name / Matrix No	:	2)
	:	3)
	:	4)

OBJECTIVE :

At the end of experiment, student should be able to:

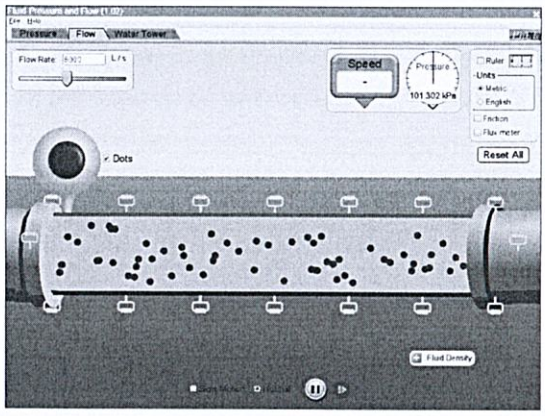
1. Explain about the relationship between the diameter of a pipe and the speed of the fluid flowing through it.
2. Explain about the relationship between the speed and pressure of a fluid in motion.

TASK INSTRUCTIONS :

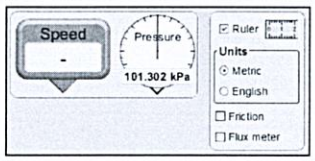
Part 2 – Motion of Fluids

1. Enter the link above into the address bar.

https://phet.colorado.edu/sims/cheerpj/fluid-pressure-and-flow/latest/fluid-pressure-and-flow.html?simulation=fluid-pressure-and-flow



2. Click the "Flow" tab at the top of the window. In the top right corner there are pressure and speed gauges that can be dragged to any location on the screen. Clicking the check box next to "Ruler" in the yellow box at the top right of the screen will cause a ruler to appear.



3. Measure and record the diameter of the pipe as well as the pressure and speed of the water flowing through the pipe.

4. The handles on various parts of the pipe can be clicked and dragged to change the diameter of the pipe at each location. Manipulate the pipe diameter at different locations so that one part has a very narrow diameter and the other part has a wide diameter.

5. Measure and record the diameter, speed, and pressure at a point where the pipe is very narrow and at a point where the pipe is very wide.

DISCUSSION :

1. Explain about the relationship between the diameter of a pipe and the speed of the fluid flowing through it.
2. Explain about the relationship between the speed and pressure of a fluid in motion.

CONCLUSION :

REFERENCE :

Prepared by :

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6/1/25

MECHANICAL ENGINEERING DEPARTMENT
DJJ20273 FLUID MECHANICS
SESSION II:2024/2025

RUBRIC FOR PRATIKAL TASK

No	PLO	CLO	DK	DP	Psychomotor Domain	Attribute	Excellent 5	Good 4	Satisfactory 3	Need Improvement 2	Unsatisfactory 1	Poor 0	Weightage	Score
1	PLO5: Modern Tool Usage: Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations. (DK6)	CLO3: Organize appropriately experiment in groups according to Standard Operation Procedures. (P4, PLO 5)	DK1 DK6	DP1, DP4	P3	**Ability to comprehend the experiment background**	Background information provides appropriate experiment context. Hypothesis is clearly stated related to the theory.	Background information provides experiment context. Hypothesis is stated related to the theory.	The background information is little more than restatement of material. Context given has major flow in logic. Hypothesis is stated but is unclear or imprecise	The background information lack of some important issues. Hypothesis is not stated	Provided little-no background information. No context for study. Hypothesis/Purpose is not mentioned/is vague	No background comprehend	1	5
2					P4	**Ability to organize methods**	Methods are clearly organized in sufficient detail for the experiment to be repeated. All steps and materials are included. Controls are explicitly stated.	Methods are organized in sufficient detail for the experiment to be repeated. All steps and materials are included. Controls are stated.	Procedure and materials are almost complete. Some minor steps or details are missing. Unclear what samples are controls.	Procedure and materials are not sufficient. Some major steps or details are missing. Unclear what samples are controls.	Procedure and materials are incomplete. Key steps/details are missing. Controls are not mentioned.	No method organized	2	10
3			DK1 DK2 DK3 DK6	DP3	P4	**Ability to measure findings and analysis.**	Well organized, clear data and table. Graph clear and axes labeled properly. Data described in a clear, concise and accurate manner. Calculations are presented neatly.	Data are presented in ways (charts, tables, graphs) that facilitate analysis and interpretation. Calculation are clear presentated.	Data are presented in ways (charts, tables, graphs). Calculations are not complete. Results are interpreted but interpretation is not explicit.	Data table incorrect or missing. Graph is unclear, incomplete, or missing. Data is not described or it is described incorrectly	Data analysis is not included.Calculations are missing. Graphs are missing or grossly incorrect.	No data presented.	4	20
4					P4	**Ability to construct discussion**	Student clearly constructed results in relation to the hypothesis/purpose. Each portion of results was used to address aspects of the question(s).	Student constructed results in relation to the hypothesis/purpose. Each portion of results was used to address aspects of the question(s).	Interpretations of all results are provided, but they are not clearly related to hypothesis. Results may be stated but analysis has major logical error.	Results are simply restated but not related to hypothesis and analysis has major logical error.	Results are simply restated without interpretation. Significant portions of the initial question or hypothesis are not addressed. Results are not addressed.	Discussion section is missing.	2	10
5					P4	**Ability to construct conclusion.**	Conclusion constructed a through and accurate understanding of technical concepts underlying the lab. Describes numerous future application to real life situations and makes it clear how they would be useful.	Conclusion constructed an accurate understanding of most concepts underlying the lab. But does not describe the skills and information learned or make it clear how they woud useful.	Conclusion constructed a limited undrstanding of concpets underlaying lab. Does not describe the skills and information learned, any possible applications to real life situations, or explain how they could be useful.	Conclusion constructed an inaccurate understanding of concepts underlying the lab. No meaningful applications to real life situations are described.	Conclusions are not logical and/or do not agree with data presented.	Conclusion section is missing.	1	5
														50

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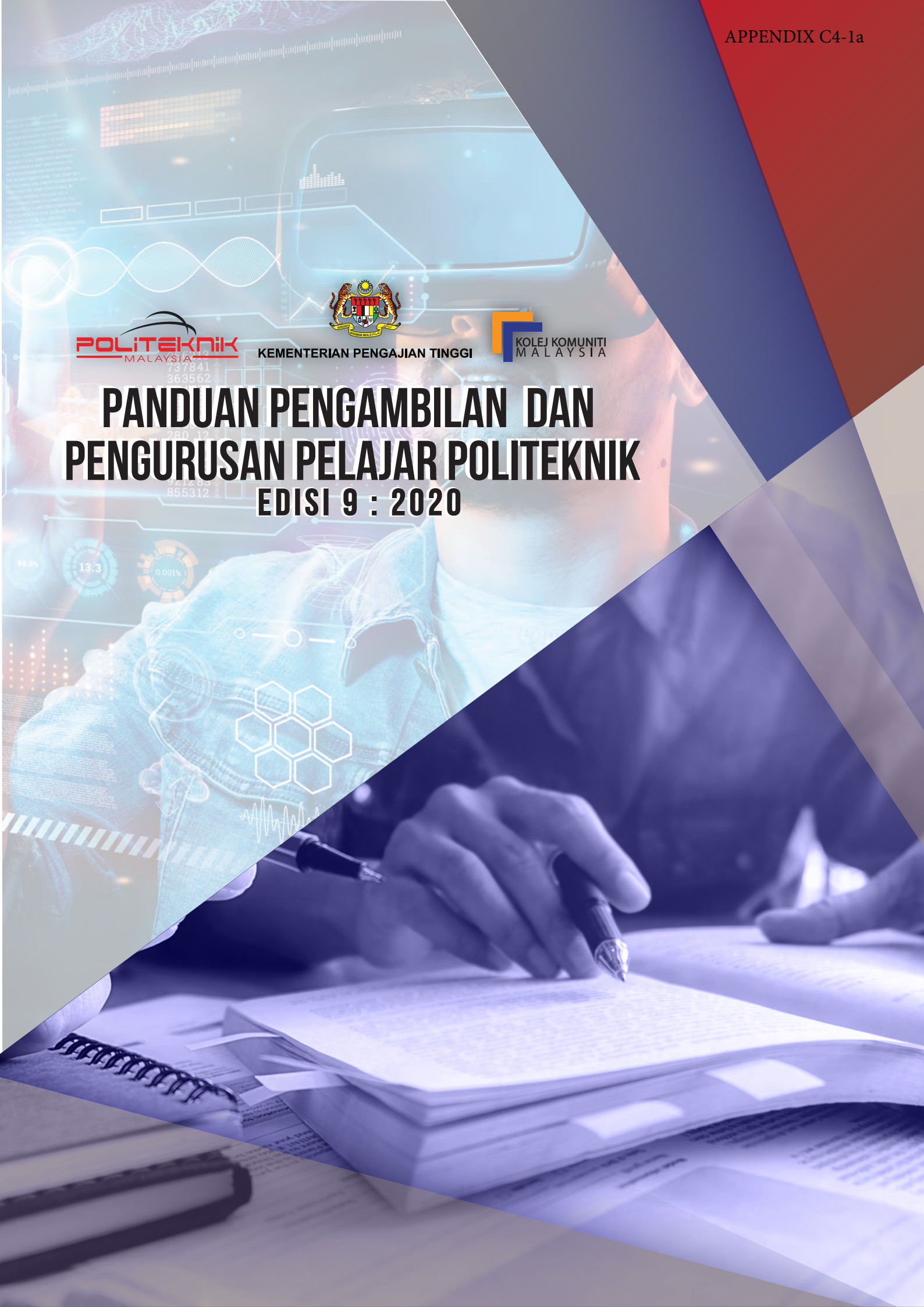
KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

APPENDICES C4:
STUDENTS

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA) DIPLOMA IN MECHANICAL ENGINEERING (DKM)

APPENDIX C4-1a



POLITEKNIK MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

KOLEJ KOMUNITI MALAYSIA

PANDUAN PENGAMBILAN DAN PENGURUSAN PELAJAR POLITEKNIK

EDISI 9 : 2020

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Buku ini menerangkan proses pengurusan kemasukan, pendaftaran, rekod dan semua urusan yang berkaitan pengambilan pelajar agar dilaksanakan dengan berkesan dan sistematik.

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1 MAKLUMAT AM

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Pn. Maliah binti Rohaizat

1.1 DASAR PENGAMBILAN DAN PENGURUSAN PELAJAR

Dasar pengambilan dan pengurusan pelajar ke Politeknik ditentukan oleh Jabatan Pendidikan Politeknik Dan Kolej Komuniti (JPPKK), Kementerian Pengajian Tinggi (KPT). Sebarang perubahan dasar adalah tertakluk kepada keputusan Mesyuarat Pengurusan JPPKK. Mesyuarat Jemaah Menteri pada 2 April 2010 memutuskan bahawa, "Pusat Pengambilan Setempat Kemasukan ke *Technical and Vocational Education and Training* (TVET) dan Institut Latihan Kemahiran Awam (ILKA) untuk mengikuti Program Sijil, Sijil Lanjutan, Diploma dan Diploma Lanjutan akan diselaraskan oleh Bahagian Pengurusan Kemasukan Pelajar (BPKP), Jabatan Pengajian Tinggi (JPT) mulai tahun 2011". Bagi menyokong Hala Tuju Transformasi Politeknik, beberapa dasar tambahan berkaitan pengambilan telah diperkenalkan mulai tahun 2013 iaitu:

1.1.1 Pelaksanaan Mekanisme Mod Kemasukan Baharu Bagi Isi Rumah 40% Terendah Ke Politeknik KPT.

Pada 16 Januari 2013, Jemaah Menteri telah bersetuju untuk melaksanakan mekanisme mod kemasukan baharu bagi isi rumah 40% terendah (bottom 40% household) pengurusan kemasukan ke Institusi Pengajian Tinggi Awam (IPTA) dan politeknik bagi pelajar yang tercicir melalui sistem pemilihan berasaskan prinsip meritokrasi mulai sesi akademik 2013/2014. (Sila rujuk Dasar Pengambilan & Pengurusan Pelajar; D1 di portal KJHEP)

1.1.2 Program Laluan Khas (PLK) Pra Diploma Politeknik

1.1.2.1 Program Mengubah Destini Anak India Malaysia (MDAIM)

Pada 5 Februari 2013, YB Menteri Pengajian Tinggi telah memutuskan pelaksanaan PLK Pra Diploma Politeknik dimulakan dengan program Mengubah Destini Anak India Malaysia (MDAIM) yang memberi fokus kepada anak-anak India sahaja. Kelulusan ini berasaskan dengan kuasa yang diberi di bawah Bab 7 – Seksyen 36, Akta Pendidikan 1996 (Akta 550). (Sila rujuk Dasar Pengambilan & Pengurusan Pelajar; D2 di portal KJHEP)

1.1.2.2 Program Menggilap Impian Anak Muda (MUTIARA)

Pada 24 November 2014, Mesyuarat Pengurusan JPP Bil 17/2014, bersetuju untuk meluluskan penawaran program pengajian Pra Diploma kepada semua kaum mulai sesi Disember 2014. (Sila rujuk Dasar Pengambilan & Pengurusan Pelajar; D3 di portal KJHEP)

1.1.3 Penawaran Program Sarjana Muda Politeknik

Pengesahan tawaran Program Sarjana Muda Politeknik telah diluluskan melalui Mesyuarat Pengurusan Jabatan Pengajian Politeknik Bilangan 18/2013 pada 8 Julai 2013 bagi pengambilan pertama sesi September 2013. Ini selaras dengan pemerkasaan peranan Politeknik di dalam Teras Keempat Pelan Strategik Pengajian Tinggi Negara dan Halatuju Transformasi Politeknik. (Sila rujuk Dasar Pengambilan & Pengurusan Pelajar; D4 di portal KJHEP)

1.2 TAKRIFAN

1.2.1 Pelajar

Pelajar ialah individu yang mendaftar dan mengikuti program pengajian sepenuh masa atau separa masa yang ditawarkan di politeknik.

1.2.2 Status Pelajar Politeknik

Menerangkan situasi semasa bagi pelajar politeknik.

1.2.3 Ambilan

Ambilan bermaksud proses pengambilan pelajar ke politeknik merujuk kepada tahun proses tersebut dilakukan.

1.2.4 Sesi Ambilan Pelajar

Sesi Ambilan Pelajar adalah satu jangkamasa proses pengambilan pelajar baharu ke politeknik bermula dari permohonan sehingga ke hari pendaftaran pelajar. Kekerapan pengambilan pelajar ke politeknik ialah tiga (3) kali setiap tahun.

Sesi Ambilan Pelajar yang dimaksudkan itu adalah:

i. Sesi Jun/ Disember

Sesi Ambilan Pelajar bagi program Diploma Politeknik, program Diploma dari pelbagai lulusan dan program Pra Diploma dari lulusan SPM. Proses pengambilan dikendalikan oleh BPKP, JPT kecuali pengambilan sesi Disember dikendalikan oleh Bahagian Ambilan dan Pembangunan Pelajar (BAPP). Manakala pengambilan pelajar program Sijil Kemahiran Khas Politeknik dikendalikan oleh BAPP.

ii. Sesi September

Sesi Ambilan Pelajar bagi program Sarjana Muda bagi lulusan Diploma Politeknik/ Diploma Lanjutan Politeknik. Proses pengambilan dikendalikan oleh BAPP.

1.2.5 Tahap Pengajian

Tahap pengajian adalah tahap kelayakan dan laluan pendidikan yang ditetapkan oleh Kerangka Kelayakan Malaysia (MQF). (Sila rujuk dokumen berkaitan Dasar Pengambilan & Pengurusan Pelajar di portal KJHEP).

Setiap tahap adalah dibezakan oleh hasil pembelajaran dan jam kredit berasaskan kepada beban belajar pelajar.

Setiap program dibahagikan kepada beberapa tahap. Pada setiap tahap, pelajar akan ditawarkan kursus-kursus berdasarkan jumlah jam kredit yang telah ditetapkan oleh Bahagian Kurikulum (BK), JPPKK.

1.2.6 Semester

Semester bermaksud satu tempoh pengajian di politeknik. Pelajar ditempatkan dalam semester mengikut kohot pengambilan.

1.2.6.1 Tempoh pengajian sesuatu program tertakluk kepada kelulusan pindahan kredit oleh Jawatankuasa Pindahan dan Pengecualian Kredit (CTCE) di politeknik masing-masing.

1.2.6.2 Tempoh pengajian adalah berbeza mengikut program masing-masing. (Lampiran L1 – 01).

1.2.6.3 Tempoh pengajian di politeknik hendaklah merujuk kepada Arahan-Arahan Peperiksaan dan Kaedah Penilaian yang sedang berkuatkuasa.

1.2.7 Kod Program, Kod Pilih dan Kod Kategori. (Lampiran L1 – 02)

1.2.7.1 **Kod Program** bermaksud kod rasmi program yang diguna pakai bagi menentukan peringkat pengajian.

1.2.7.2 **Kod Pilih** bermaksud kod program yang didaftarkan dan digunakan dalam sistem pemilihan pelajar.

1.2.7.3 **Nama Kategori** adalah kumpulan yang terdiri daripada lulusan mana-mana institusi/ sekolah yang diiktiraf oleh kerajaan Malaysia.

1.2.7.4 **Kod Kategori** merupakan singkatan kepada nama kategori.

1.2.8 Lapor Diri Pelajar Senior

Lapor diri pelajar senior bermaksud pelajar yang telah melaksanakan pendaftaran secara dalam talian (online), mendaftar kursus dan menghadiri sesi pengajian pada semester semasa.

1.3 JAWATANKUASA PENGAMBILAN PELAJAR

1.3.1 Anggota Jawatankuasa Pengambilan Pelajar Politeknik:

Penasihat	:	Ketua Pengarah Pengarah Kanan Kompetensi
Pengerusi	:	Pengarah BAPP, JPPKK
Timbalan Pengerusi	:	Timbalan Pengarah Unit Ambilan Pelajar BAPP, JPPKK
Ahli Jawatankuasa	:	i. Pengarah Bahagian JPPKK ii. Pegawai BAPP iii. KJHEP/PHEP iv. Pegawai Perisian Pengambilan Pelajar

1.3.2 Fungsi Jawatankuasa Pengambilan Pelajar Politeknik

i. Merancang hala tuju pengambilan dan pembangunan pelajar termasuk pelajar antarabangsa berdasarkan unjuran enrolmen dan keperluan program pengajian.
ii. Merancang, mengurus dan menyelaras program pengambilan pelajar secara berpusat serta pengambilan pelajar antarabangsa (tidak termasuk program PSH) berdasarkan garis panduan termasuk untuk program mobiliti pelajar dan pendidikan fleksibel.
iii. Merancang, mengurus dan menyenggara sistem aplikasi pengambilan pelajar termasuk pelajar antarabangsa.
iv. Merancang dan mengurus pengambilan pelajar pendidikan dan latihan termasuk promosi, permohonan, penawaran, penerimaan, penawaran susulan, pertukaran antara institusi dan program, pemantauan serta kompilasi maklumat pengambilan pelajar bagi semua institusi termasuk pelajar antarabangsa.

2.0 MAKLUMAT KEMASUKAN

Cik Shamsuri binti Mior Khalid @ Meor Alif
Pn. Nor Suria Hazni binti Che Husain

2.1 PROGRAM YANG DITAWARKAN

2.1.1 Program Diploma bagi lulusan;

i. Sijil Pelajaran Malaysia (SPM) atau kelayakan-kelayakan lain yang setara dengannya. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

ii. *Accreditation of Prior Experiental Experiental Learning* (APEL). (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

iii. Sijil Luar Negara bagi pelajar antarabangsa. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

iv. Sijil Politeknik. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

v. Sijil Kolej Komuniti. (Sila rujuk Pemetaan ke program Diploma; Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

vi. Program Matrikulasi KPM. (Sila rujuk Pemetaan ke program Diploma; Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

vii. Sijil Institut Kemahiran MARA (IKM)/ Sijil Institut Pertanian/ Sijil Kejuruteraan Pertanian PERDA-TECH. (Sila rujuk Pemetaan ke program Diploma; Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

viii. Sijil Kemahiran Malaysia (SKM) Tahap 3. (Sila rujuk Pemetaan ke program Diploma; Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

ix. Pra Diploma Sains/ Perdagangan Politeknik (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

2.1.2 Program Pra Diploma Politeknik bagi Lulusan SPM.

2.1.3 Sijil Kemahiran Khas (Masalah Pendengaran) bagi lulusan yang Tamat Tingkatan Lima dari Sekolah Pendidikan Khas kelolaan Jabatan Pendidikan Khas (JPK), Kementerian Pendidikan Malaysia (KPM) atau Program Pencantuman Pendidikan Khas KPM atau Lulusan Sekolah Menengah Pendidikan Khas Vokasional KPM.

2.1.4 Program Sarjana Muda dengan Kepujian bagi lulusan Diploma/ Diploma Lanjutan Politeknik.

2.2 KOD PILIH DAN NAMA PROGRAM

Senarai kod pilih dan nama program yang digunakan bagi proses pengambilan adalah seperti di Lampiran L2 – 01.

2.3 SYARAT KEMASUKAN

Syarat minimum permohonan kemasukan bagi:

2.3.1 Program Diploma bagi lulusan Sijil Pelajaran Malaysia (SPM) dan kelayakan-kelayakan lain yang setara dengannya. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

2.3.2 Program Diploma bagi lulusan APEL. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

2.3.3 Program Diploma bagi lulusan Sijil Luar Negara yang setara dengannya. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

2.3.4 Program Pra Diploma bagi lulusan Sijil Pelajaran Malaysia (SPM). (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

2.3.5 Program Sijil Kemahiran Khas (Masalah Pendengaran) bagi pelajar berkeperluan khas. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

2.3.6 Program Diploma bagi lulusan Sijil Politeknik, Sijil Kolej Komuniti, Sijil yang diiktiraf setaraf dengannya, Sijil Kemahiran Malaysia (SKM), Pra Diploma Politeknik dan Program Matrikulasi KPM. Bagi lulusan selain SPM (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

2.3.7 Program Sarjana Muda dengan Kepujian bagi lulusan Diploma/ Diploma Lanjutan Politeknik. (Sila rujuk Portal Pengambilan Pelajar Politeknik dan Kolej Komuniti)

Nota:
Dibaca bersama dengan Senarai Kumpulan Mata Pelajaran SPM tahun 2019 dan tahun sebelumnya.
(Lampiran L2 - 02)

2.4 IKLAN TAWARAN KEMASUKAN

Hebahan atau iklan kemasukan ke Politeknik disediakan sekurang-kurangnya dua (2) hari sebelum borang permohonan kemasukan dibuka. Iklan ke Politeknik diuruskan oleh Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) menerusi medium berikut:

2.4.1 Akhbar-akhbar utama tempatan

2.4.2 Laman web;

i. http://upu.mohe.gov.my
ii. http://www.mypolycc.edu.my
iii. http://ambilan.mypolycc.edu.my

2.4.3 Media sosial rasmi Jabatan

i. *Facebook:* politeknik.edu / kolejkomunitiHQ
ii. *Instagram:* politeknikmalaysia / kolejkomunitiHQ
iii. *Twitter:* politeknikmalaysia / kolejkomunitiHQ
iv. *Youtube:* politeknikkolejkomuniti

2.4.4 Media sosial rasmi institusi.

3.0 PERMOHONAN KEMASUKAN

En. Amalulkhair bin Sarbini
En. Esstree bin Ishak

3.1 PERMOHONAN KE PROGRAM DIPLOMA BAGI LEPASAN SPM TAHUN SEMASA.

3.1.1 Pengambilan Sesi Jun tahun semasa.

i. Permohonanan ke Politeknik / Kolej Komuniti adalah melalui kaedah atas talian di laman web http://upu.mohe.gov.my. Pemohon dikehendaki membeli Nombor Unik ID di mana-mana cawangan Bank Simpanan Nasional (BSN) seluruh negara sama ada melalui kaunter atau *Automated Teller Machine* (ATM).

ii. Bagi pemohon yang ingin membeli Nombor Unik ID melalui kaedah perbankan internet, pemohon mestilah mempunyai akaun GIRO BSN.

iii. Kadar harga bagi Nombor Unik ID adalah tertakluk kepada ketetapan semasa.

iv. Pemohon dikehendaki mendaftar dan memohon dengan menggunakan nombor MyKad dan Nombor Unik ID yang telah dibeli di Bank Simpanan Nasional (BSN). Pemohon kali pertama dinasihati untuk merujuk kepada laman web rasmi Bahagian Pengurusan Kemasukan Pelajar, Jabatan Pengajian Tinggi (http://upu.mohe.gov.my) untuk maklumat lanjut berkenaan pendaftaran dan permohonan. (Rujuk Manual Pengguna M01 di portal KJHEPP).

3.1.2 Pengambilan Sesi Disember tahun semasa.

i. Permohonan ke Politeknik / Kolej Komuniti adalah melalui kaedah atas talian yang disediakan oleh Bahagian Ambilan dan Pembangunan Pelajar (BAPP) Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) di pautan berikut http://ambilan.mypolycc.edu.my.

ii. Permohonan untuk sesi ini tidak memerlukan Nombor Unik ID tetapi menggunakan nombor MyKad untuk urusan permohonan dan pendaftaran. (Rujuk Manual Pengguna M02 di portal KJHEPP).

3.2 PERMOHONAN KE PROGRAM DIPLOMA BAGI LULUSAN SPM (BUKAN TAHUN SEMASA)/ LEPASAN SIJIL POLITEKNIK/ SIJIL KOLEJ KOMUNITI/ SIJIL INSTITUT KEMAHIRAN TINGGI PERDA/ SIJIL INSTITUT PERTANIAN/ SIJIL INSTITUT KEMAHIRAN MARA (IKM)/ LULUSAN SKM TAHAP 3.

3.2.1 Pengambilan Sesi Jun dan Disember.

i. Permohonan kemasukan ke program Diploma Politeknik untuk lulusan seperti yang dinyatakan adalah melalui kaedah atas talian yang disediakan oleh BAPP, JPPKK di pautan berikut, http://ambilan.mypolycc.edu.my (Rujuk Manual Pengguna M02 di portal KJHEPP).

ii. Bagi lepasan Sijil, calon perlu memastikan tarikh tamat pengajian atau tarikh tamat latihan pada **surat Pengesahan Tamat Latihan atau Pengajian** adalah sebelum tarikh tutup permohonan ke peringkat pengajian Diploma Politeknik.

iii. Permohonan bagi lepasan yang dinyatakan tidak memerlukan pembelian Nombor Unik ID. Permohonan hendaklah dibuat melalui laman web http://ambilan.mypolycc.edu.my dan menggunakan nombor MyKad untuk urusan permohonan.

iv. Bagi lepasan peringkat sijil, pemohon hendaklah menyemak kelayakan ke peringkat pengajian Diploma di pautan berikut http://ambilan.mypolycc.edu.my/esemak/index.asp.

v. Bagi lulusan SKM Tahap 3, pemohon hendaklah menghantar salinan sijil SKM Tahap 3 berserta salinan keputusan SPM (memperolehi sekurang-kurangnya 1 kredit) sebelum tarikh tutup permohonan.

3.3 PERMOHONAN KE PROGRAM SIJIL KEMAHIRAN KHAS POLITEKNIK BAGI LULUSAN TAMAT TINGKATAN LIMA DARI SEKOLAH PENDIDIKAN KHAS KELOLAAN JABATAN PENDIDIKAN KHAS (JPK), KEMENTERIAN PENDIDIKAN MALAYSIA (KPM) ATAU PROGRAM PENCANTUMAN PENDIDIKAN KHAS KPM ATAU LULUSAN KOLEJ VOKASIONAL KPM.

3.3.1 Pengambilan Sesi Jun dan Disember.

i. Permohonan kemasukan ke program Sijil Kemahiran Khas Politeknik untuk lulusan seperti yang dinyatakan adalah melalui kaedah atas talian yang disediakan oleh BAPP, JPPKK di pautan http://ambilan.mypolycc.edu.my (Rujuk Manual Pengguna M02 di portal KJHEPP).

ii. Pemohon perlu memohon menggunakan nombor MyKad dan nombor Kad OKU (jika ada) untuk mengisi borang permohonan atas talian. Pemohon tidak perlu membeli Nombor Unik ID untuk tujuan ini.

3.4 PERMOHONAN KE PROGRAM PRA DIPLOMA BAGI LULUSAN SPM.

3.4.1 Pengambilan Sesi Jun dan Disember.

i. Permohon yang hendak memohon ke program ini harus memohon melalui pautan http://ambilan.mypolycc.edu.my yang disediakan oleh BAPP, JPPKK.

ii. Pemohon perlu menggunakan nombor MyKad untuk mengisi permohonan atas talian.

iii. Pembelian Nombor Unik ID adalah tidak diperlukan untuk proses permohonan ke program ini.

3.5 PERMOHONAN KE PROGRAM IJAZAH SARJANA MUDA BAGI LULUSAN DIPLOMA / DIPLOMA LANJUTAN POLITEKNIK.

3.5.1 Pengambilan Sesi September.

i. Lepasan Diploma / Diploma Lanjutan Politeknik perlu memohon melalui pautan http://ambilan.mypolycc.edu.my

ii. Pemohon perlu menggunakan nombor MyKad untuk mengisi borang permohonan secara atas talian yang disediakan oleh BAPP, JPPKK. (Sila rujuk Manual Pengguna M03 di portal KJHEPP)

4

TAWARAN KEMASUKAN

En. Shuhaimi bin Samanol
En. Mohamad Khairul bin Mohamad @ Alwi
En. Mohd Hanif bin Abd Rahman

4.1 DATA PENAWARAN

4.1.1 BAPP, JPPKK mengedar statistik penawaran sesi semasa ke politeknik. Data penawaran yang mengandungi maklumat calon boleh dimuat turun di portal KJHEP.

4.1.2 Data penawaran boleh didapati di dalam Sistem Pengurusan Maklumat Pelajar (SPMP) bagi politeknik yang menggunakan sistem tersebut. Bagi politeknik yang tidak menggunakan SPMP, PHEP boleh memuat turun data penawaran dari portal KJHEP selepas keputusan permohonan diumumkan. (Sila rujuk Manual Pengguna M04 di portal KJHEP)

4.2 SEMAKAN KEPUTUSAN PERMOHONAN

4.2.1 Sesi Jun

4.2.1.1 Semakan Untuk Lulusan SPM (tahun semasa dan dua tahun sebelum).

Semakan keputusan permohonan di http://upu.mohe.gov.my dan seterusnya mencetak surat tawaran di http://ambilan.mypolycc.edu.my .

4.2.1.2 Semakan Lulusan SPM (selain perkara 4.2.1.1)/ Lulusan Sijil atau setaraf/ Sijil Kolej Komuniti/ Sijil Kemahiran Malaysia Tahap 3/ Program Matrikulasi KPM/ Sijil Kejuruteraan Pertanian PERDA-Tech/ Sijil Pertanian/ Sijil Institut Kemahiran Mara (IKM).

Semakan keputusan permohonan dan seterusnya mencetak surat tawaran di http://ambilan.mypolycc.edu.my.

4.2.2 Sesi Disember/ Sesi September

Semakan keputusan permohonan dan seterusnya mencetak surat tawaran di http://ambilan.mypolycc.edu.my.

4.3 PENERIMAAN TAWARAN KEMASUKAN

4.3.1 Calon dikehendaki membuat pengesahan penerimaan atau penolakan tawaran di http://ambilan.mypolycc.edu.my.

4.3.2 Calon yang bersetuju menerima tawaran MESTILAH mencetak Surat Tawaran dan Borang Jawapan Tawaran (BJT-JPP).

4.3.2.1 Tawaran Pertama

Calon hendaklah menghantar borang BJT-JPP berserta salinan dokumen yang disahkan dalam tempoh yang ditetapkan daripada tarikh surat tawaran.

Semua BJT-JPP yang diterima dalam tempoh tersebut hendaklah diproses penerimaannya walaupun telah melebihi norma ambilan.

4.3.2.2 Tawaran Susulan

Calon dikehendaki menghubungi politeknik berkenaan dalam tempoh yang ditetapkan dari tarikh surat tawaran.

4.3.3 Penerimaan Tawaran Melebihi Tempoh Yang Ditetapkan

PHEP perlu menerima calon tersebut dan melaksanakan tatacara semakan dokumen jika ada kekosongan. Sekiranya tiada kekosongan, calon akan dimaklumkan bahawa permohonannya dikategorikan sebagai Calon Simpanan. (Lampiran L4 – 01)

4.3.4 PHEP hendaklah memastikan;

4.3.4.1 Borang BJT-JPP tersebut dicop tarikh terima.

4.3.4.2 Salinan kad pengenalan dipalang dan dicop seperti "Untuk Kegunaan Politeknik Sahaja"

4.4 SEMAKAN DOKUMEN PENERIMAAN TAWARAN

4.4.1 PHEP hendaklah memastikan calon mengemukakan dokumen berikut:

4.4.1.1 Calon **lulusan SPM** yang ditawarkan program diploma atau pra diploma;

i. Borang Jawapan Tawaran (BJT-JPP)
ii. Salinan Surat Tawaran
iii. Salinan MyKad
iv. Salinan keputusan peperiksaan SPM
v. Salinan sijil berhenti sekolah

4.4.1.2 Calon **lulusan selain SPM** yang ditawarkan program diploma;

i. Borang Jawapan Tawaran (BJT-JPP)
ii. Salinan Surat Tawaran
iii. Salinan MyKad
iv. Salinan keputusan peperiksaan SPM
v. Salinan transkrip / Slip keputusan peperiksaan setiap semester (kecuali lulusan SKM)
vi. Salinan sijil / surat pengesahan tamat pengajian dari insitusi

4.4.1.3 Calon **lulusan luar negara** yang ditawarkan program diploma;

i. Borang Jawapan Tawaran (BJT-JPP)
ii. Salinan Surat Tawaran
iii. Salinan MyKad
iv. Salinan keputusan peperiksaan dan sijil yang dimiliki
v. Salinan surat akuan Agensi Kelayakan Malaysia (MQA) bagi mengesahkan sijil adalah setara dengan SPM

4.4.1.4 Calon **pelajar pendidikan khas** yang ditawarkan program sijil kemahiran khas;

i. Borang Jawapan Tawaran (BJT-JPP)
ii. Salinan Surat Tawaran
iii. Salinan MyKad
iv. Salinan kad OKU
v. Salinan sijil berhenti sekolah

4.4.1.5 Calon **lulusan diploma politeknik** yang ditawarkan program sarjana muda;

i. Borang Jawapan Tawaran (BJT-JPP)
ii. Salinan Surat Tawaran
iii. Salinan MyKad
iv. Salinan keputusan peperiksaan SPM
v. Salinan transkrip/Slip keputusan peperiksaan setiap semester
vi. Salinan slip keputusan MUET

Nota:

a) Semua salinan dokumen mesti dalam saiz A4 dan disahkan.

b) Semua salinan sijil dan dokumen mesti disahkan oleh pegawai yang layak seperti berikut;
   i. Pegawai Kerajaan Kumpulan Pengurusan dan Profesional/Kumpulan A;
   ii. Pegawai Kehakiman dan Perundangan, Hakim, Peguam, Majistret/ Jaksa Pendamai dan Doktor Kerajaan sahaja;
   iii. Pengetua/Guru Besar Sekolah;
   iv. Pegawai Polis berpangkat ASP dan ke atas;
   v. Pegawai Tentera berpangkat Kapten dan ke atas;
   vi. Penguasa Penjara, Penguasa Bomba dan Penguasa Kastam;
   vii. Wakil Rakyat/ Senator;
   viii. Pengurus Felda atau Pengurus Felcra;
   ix. Wakil Rakyat/Senator;
   x. Penghulu/ Penggawa/ Ketua Kampung/ Pemanca/ Ketua Kaum (Sabah & Sarawak)

4.4.2 PHEP hendaklah memastikan Butiran Pemohon bagi calon berkenaan dicetak. (Sila rujuk Manual Pengguna M05 di portal KJHEP)

4.4.3 Semakan Dokumen

PHEP hendaklah membuat semakan maklumat pelajar bagi menentukan sama ada calon layak mendaftar dan memastikan perkara berikut dilaksanakan:

4.4.3.1 Menyemak butiran pemohon dengan maklumat dalam salinan sijil/dokumen yang telah disahkan.

4.4.3.2 Sekiranya dokumen yang dihantar tidak lengkap, PHEP hendaklah mengemaskini maklumat berkaitan dokumen yang tidak lengkap di portal KJHEP. PHEP perlu menghubungi calon untuk membuat pengesahan. (Sila rujuk Manual Pengguna M05 di portal KJHEP).

4.4.3.3 Tanda '√' jika maklumat betul. Tandatangan dan tulis tarikh dalam ruangan di bawah lajur semakan dalam Butiran Pemohon.

4.4.3.4 Tanda 'X' dan *highlight* pada maklumat yang bercanggah. Catat dan tandatangan ruangan di bawah lajur Semakan dalam Butiran Pemohon (Sila rujuk Manual Pengguna M06 di portal KJHEP).

4.4.4 PHEP perlu memuat naik dokumen Pendaftaran Pelajar Baharu ke laman sesawang Politeknik masing-masing bagi tujuan memudahkan pelajar baharu mendapat maklumat berkaitan pendaftaran. (Lampiran L4-02)

Nota:

PHEP boleh membuat semakan dokumen pada bila-bila masa sepanjang pengajian berdasarkan keperluan semasa.

4.5 PERCANGGAHAN MAKLUMAT

4.5.1 Percanggahan maklumat berlaku apabila maklumat dalam Butiran Pemohon berbeza dengan maklumat pada salinan dokumen berikut:

4.5.1.1 MyKad untuk mengesahkan nombor dan status kewarganegaraan

4.5.1.2 Sijil/Slip Keputusan Peperiksaan SPM atau sijil luar negara untuk mengesahkan mata pelajaran dan gred.

4.5.1.3 Transkrip peperiksaan daripada institusi yang berkaitan untuk mengesahkan sijil yang dimiliki, HPNM dan tarikh lulus.

4.5.1.4 Slip keputusan MUET bagi mengesahkan tarikh lulus dan band yang diperolehi.

4.5.1.5 Sijil Kemahiran Malaysia bagi mengesahkan pencapaian tahap 3. (Lampiran L4 – 03).

4.5.1.6 Sijil APEL

4.5.2 Sekiranya berlaku percanggahan maklumat;

4.5.2.1 PHEP dikehendaki menghubungi calon untuk membuat pengesahan.

4.5.2.2 PHEP hendaklah melaksanakan proses e-Canggah. (Sila rujuk Manual Pengguna M06 di portal KJHEP).

4.5.2.2.1 Sekiranya keputusan e-Canggah membenarkan calon mendaftar, PHEP hendaklah mencetak laporan percanggahan maklumat dan failkan bersama Butiran Pemohon. PHEP menghubungi calon untuk memuat turun dokumen pendaftaran.

4.5.2.2.2 Sekiranya keputusan e-Canggah membatalkan tawaran pengajian calon, PHEP hendaklah mencetak laporan dan surat pembatalan tawaran untuk difailkan bersama Butiran Pemohon. Surat pembatalan tawaran hendaklah diposkan kepada calon.

4.5.2.2.3 Sebarang rayuan, calon boleh merujuk kepada BAPP, JPPKK.

4.5.3 Sekiranya percanggahan maklumat dikesan dalam tempoh pengajian, PHEP hendaklah melaksanakan langkah-langkah berikut;

4.5.3.1 Mendapatkan maklumat tambahan untuk mengesahkan percanggahan tersebut.

4.5.3.2 Memaklumkan kepada Pengarah BAPP, JPPKK sekiranya disahkan berlakunya percanggahan tersebut. (Lampiran L4 – 04)

4.5.3.3 Memaklumkan keputusan percanggahan daripada Pengarah BAPP, JPPKK kepada pelajar. (Lampiran L4 – 05)

4.5.3.4 Sebarang rayuan, calon boleh merujuk kepada BAPP, JPPKK.

4.6 RAYUAN KEMASUKAN

4.6.1 Rayuan secara dalam talian (*online*) boleh dibuat dalam tempoh 10 hari dari tarikh tawaran rasmi diumumkan.

4.6.2 Semua rayuan kemasukan dibuat di http://ambilan.mypolycc.edu.my.

5

PENDAFTARAN PELAJAR BAHARU

Pn. Noraina binti Wahid
Pn. Nor Fazilah binti Soid

5.1 MAKLUMAT AM

KJHEP/PHEP hendaklah memastikan proses pendaftaran berjalan dengan sistematik, teratur dan lancar.

5.1.1 Pihak politeknik perlu memastikan sistem pendaftaran secara atas talian dikemaskini. (Lampiran L5 – 01)

5.1.2 Pendaftaran secara atas talian hendaklah dibuat sebelum pelajar melapor diri.

5.1.3 Prosedur kerja dan proses pengurusan pendaftaran pelajar hendaklah merujuk kepada dokumen pendaftaran di politeknik masing-masing.

5.1.4 Pihak politeknik hendaklah mengemaskini tarikh pendaftaran dan alamat pautan pendaftaran atas talian politeknik masing-masing di portal pengambilan pelajar.

5.2 PROSES PENDAFTARAN

5.2.1 Sebelum Pendaftaran

Bagi politeknik yang menggunakan sistem SPMP, pelajar baharu perlu membuat pendaftaran secara atas talian di laman sesawang politeknik masing-masing dan mencetak Slip Pengesahan Pendaftaran untuk dibawa pada hari pendaftaran. KJHEP/PHEP memastikan penyediaan kemudahan pada hari pendaftaran seperti:

i. Papan tanda arah
ii. Tempat meletak kenderaan
iii. Khemah
iv. Tempat duduk pelajar dan ibu bapa
v. Borang soal selidik
vi. Sistem giliran
vii. Pengangkutan
viii. Kaunter pendaftaran

5.2.2 Semasa Pendaftaran

KJHEP/PHEP perlu memastikan kaunter beroperasi seperti:

i. Urusetia,
ii. Nombor giliran,
iii. Dokumen pendaftaran,
iv. Bayaran,
v. Koperasi,
vi. Kolej kediaman pelajar
vii. Kad Pelajar

5.3 BAYARAN YURAN

Pelajar **wajib** menjelaskan semua yuran berkaitan bagi membolehkan proses pendaftaran dilaksanakan.

5.4 PENEMPATAN PELAJAR DI KOLEJ KEDIAMAN (ASRAMA)

Pengurus Asrama hendaklah memastikan proses penempatan di kolej kediaman pelajar berjalan dengan sistematik, teratur dan lancar.

5.5 SOAL SELIDIK PENDAFTARAN

5.5.1 PHEP bertanggungjawab melaksanakan soal selidik pendaftaran sebagai rujukan dan panduan untuk melaksanakan proses penambahbaikan pada masa akan datang. (Lampiran L5 - 02).

5.5.2 Soal selidik boleh dilaksanakan semasa/ selepas pendaftaran.

5.5.3 Menyediakan laporan soal selidik mengikut format yang ditetapkan. (Lampiran L5 - 03).

6

LAPOR DIRI PELAJAR SENIOR

En. Irwandih bin Mat Jaili
En. Mohd Hafeez bin Mohd Soid

6.1 LAPOR DIRI

6.1.1 Lapor diri dilaksanakan bertujuan untuk memastikan pelajar senior membayar yuran berkaitan sebelum mendaftar kursus. PHEP dikehendaki memastikan proses lapor diri berjalan dengan lancar.

6.1.2 Lapor Diri Pelajar Senior melibatkan pelajar semasa yang layak meneruskan pengajian pada semester berikutnya berdasarkan Keputusan Penilaian Akhir Semester.

6.1.3 Lapor diri pelajar senior hendaklah diadakan selewat-lewatnya minggu pertama sesi pengajian bermula berdasarkan kalendar akademik yang dikeluarkan oleh Jabatan Pendidikan Politeknik dan Kolej Komuniti.

6.1.4 Pelajar senior perlu melakukan pendaftaran dalam talian sebelum memulakan pengajian di politeknik pada semester baharu. Kaedah pendaftaran dalam talian perlu merujuk kepada buku panduan sistem pendaftaran yang digunakan.

6.2 PROSES LAPOR DIRI

6.2.1 Sebelum Proses Lapor Diri

PHEP hendaklah memastikan perkara berikut dilaksanakan:

6.2.1.1 Pihak politeknik perlu menetapkan tarikh lapor diri dan mengemaskini maklumat dalam sistem pendaftaran pelajar.

6.2.1.2 Menghebahkan maklumat lapor diri kepada pelajar melalui Ketua Jabatan Akademik, Pegawai Peperiksaan (PPep), Pegawai Perhubungan dan Latihan Industri (PPLI) dan di laman sesawang politeknik masing-masing.

6.2.2 Semasa Lapor Diri

PHEP hendaklah memastikan perkara berikut dilaksanakan:

6.2.2.1 Pelajar melapor diri di jabatan akademik

6.2.2.2 Pelajar mengemukakan Slip Pengesahan Pendaftaran Dalam Talian kepada penasihat akademik.

6.2.3 Selepas Lapor Diri

PHEP hendaklah memastikan perkara berikut dilaksanakan:

6.2.3.1 Jabatan/ Unit boleh mendapatkan senarai nama pelajar yang telah lapor diri melalui sistem pendaftaran pelajar.

6.2.3.2 Pendaftaran kursus hanya boleh dilakukan selepas proses lapor diri selesai.

6.2.4 Lapor Diri Lewat

6.2.4.1 Pelajar senior yang melapor diri selepas tarikh yang ditetapkan perlu mendapat kebenaran Ketua Jabatan Akademik terlebih dahulu. (Lampiran L6 - 01)

6.3 PELAJAR TIDAK MELAPOR DIRI

6.3.1 PHEP menerima salinan surat peringatan yang dikeluarkan mulai minggu pertama perkuliahan oleh Ketua Jabatan Akademik kepada pelajar berkenaan untuk dimasukkan ke dalam fail pelajar. (Lampiran L6 - 02)

6.3.2 Sekiranya pelajar tidak melapor diri pada semester tersebut maka semester itu diambil kira dalam pengiraan tempoh pengajian. (Rujuk tempoh pengajian daripada Arahan-Arahan Peperiksaan dan Kaedah Penilaian)

6.3.3 Rayuan secara bertulis oleh pelajar untuk meneruskan pengajian hendaklah dikemukakan kepada Pengarah politeknik. Pertimbangan kelulusan rayuan perlu mengambilkira tempoh maksimum pengajian.

6.3.4 PHEP mengeluarkan surat makluman keputusan rayuan meneruskan pengajian kepada pelajar. (Lampiran L6 - 03).

6.4 PELAJAR MENGULANG PENILAIAN (MP)

6.4.1 PHEP menerima senarai nama pelajar yang mengulang penilaian daripada Unit Peperiksaan.

6.4.2 PHEP menyemak tarikh tamat tempoh insuran dan kad pelajar.

6.4.3 PHEP perlu mencetak kad pelajar baharu dan mempembaharui insuran sekiranya tamat tempoh.

7

YURAN DAN BAYARAN PELBAGAI

En. Mohd. Hazely bin Abdul Rahim
Pn. Maliah binti Rohaizat
En. Aidil Azhiim bin Shamsuddin

7.1 YURAN

Semua pelajar mesti membuat bayaran yuran pengajian dan kolej kediaman (jika berkenaan). Pelajar yang tidak membuat bayaran tidak layak menghadiri semua aktiviti pengajaran dan pembelajaran.

7.2 JENIS YURAN

7.2.1 Jenis yuran yang perlu dibayar oleh setiap pelajar adalah seperti berikut:

BIL	JENIS YURAN	AMAUN	KAEDAH BAYARAN
1.	Yuran Pengajian	RM 200.00	***Bank-in:*** **Bank Islam (M) Berhad (BIMB)** Bayar kepada: **Politeknik KPT**
2.	Yuran Kolej Kediaman i. Asrama *Private Finance Incentives (PFI)* ii. Asrama Naik Taraf iii. Asrama Konvensional	 RM 630.00 RM 360.00 RM 60.00	

7.2.2 Penyediaan data pelajar di Bank Islam

i. BAPP menyediakan fail inbound berdasarkan data enrolmen pelajar.

ii. BAPP akan menghantar fail *inbound* ke BIMB untuk dimasukkan ke dalam sistem *Bill Presentment BIMB*.

iii. BIMB akan memaklumkan status penerimaan dan pengemaskinian data di dalam sistem *Bill Presentment* kepada BAPP.

iv. BAPP akan memaklumkan kepada PHEP tarikh pembayaran yuran pengajian/ kolej kediaman boleh dibuat oleh pelajar.

7.2.3 Pembayaran Yuran Pengajian/ Kolej Kediaman

i. Kaedah pembayaran yuran pengajian/ kolej kediaman boleh dibuat melalui mesin CDM, ATM dan perbankan internet BIMB. (Sila rujuk Manual Pengguna M07 di portal KJHEP)

ii. Sekiranya pelajar gagal membuat pembayaran yuran pengajian/ kolej kediaman disebabkan ketiadaan data, pelajar perlu memaklumkan kepada PHEP politeknik masing-masing.

iii. PHEP dikehendaki memaklumkan kepada pihak BAPP untuk melaksanakan prosedur para 7.2.2

7.2.4 Kemaskini Data Bayaran Yuran Pengajian/ Kolej Kediaman Pelajar Di Dalam SPMP.

i. PHEP perlu memuat turun data bayaran yuran pengajian/ kolej kediaman di laman web *Bill Payment System BIMB* dan mengemaskini fail data bayaran di dalam SPMP. (Sila rujuk Manual Pengguna M08 di portal KJHEP)

7.2.5 Isu Berkaitan Yuran Pengajian/ Kolej Kediaman

i. Yuran pengajian/ kolej kediaman hendaklah dibayar sebelum atau pada tarikh pendaftaran.

ii. Pelajar yang gagal membayar yuran pengajian tidak layak mengikuti sebarang aktiviti di politeknik.

iii. Pelajar yang tangguh pengajian selepas mendaftar/ melapor diri tidak boleh menuntut yuran pengajian/ kolej kediaman.

iv. Pelajar yang diluluskan penangguhan pengajian selepas mendaftar/ melapor diri tidak boleh dikecualikan daripada membuat bayaran yuran pengajian pada sesi berikutnya.

v. Pelajar yang berhenti pengajian dalam tempoh sebulan selepas mendaftar/ melapor diri DIBENARKAN menuntut yuran pengajian/ kolej kediaman (Rujuk Tatacara Arahan Perbendaharaan semasa).

vi. Pelajar senior yang tidak layak melapor diri (pelajar berstatus Gagal Berhenti) tetapi telah membuat bayaran yuran pengajian/ kolej kediaman BOLEH membuat tuntutan kepada Unit Kewangan Politeknik bersama dokumen-dokumen berkaitan (Rujuk Tatacara Arahan Perbendaharaan semasa).

vii. Calon yang tidak mendaftar sebagai pelajar baharu tetapi telah membuat bayaran yuran pengajian/ kolej kediaman BOLEH membuat tuntutan kepada Unit Kewangan Politeknik bersama dokumen-dokumen berkaitan (Rujuk Tatacara Arahan Perbendaharaan semasa).

viii. Calon/ pelajar yang bertukar tempat pengajian (politeknik) BOLEH menggunakan yuran pengajian/ kolej kediaman sesi semasa daripada politeknik asal dengan mengemukakan salinan resit bayaran.

ix. Yuran pengajian yang telah dibayar di institusi selain politeknik TIDAK BOLEH digunakan sebagai yuran pengajian di politeknik.

x. Pelajar yang mengulang penilaian (MP) tetapi telah membuat bayaran yuran pengajian/ kolej kediaman BOLEH membuat tuntutan kepada Unit Kewangan Politeknik bersama dokumen-dokumen berkaitan (Rujuk Tatacara Arahan Perbendaharaan semasa).

xi. Pelajar yang dibatalkan tawaran tetapi telah membuat bayaran yuran pengajian/ kolej kediaman BOLEH membuat tuntutan kepada Unit Kewangan Politeknik bersama dokumen-dokumen berkaitan untuk semester semasa sahaja (Rujuk Tatacara Arahan Perbendaharaan semasa).

7.2.6 Tatacara permohonan tuntutan balik yuran pengajian/ kolej kediaman.

7.2.6.1 Peranan PHEP Politeknik

i. Menerima surat permohonan tuntutan (Lampiran L7 – 01) daripada pelajar beserta dokumen-dokumen seperti berikut:

a. Salinan MyKad yang telah disahkan.
b. Salinan hadapan buku bank/ maklumat akaun bank pemohon yang telah disahkan.
c. Slip bayaran BIMB yang asal.

ii. Mengemukakan dokumen tersebut kepada Unit Kewangan Politeknik.

7.2.6.2 Peranan Unit Kewangan Politeknik

Melaksanakan perkara berikut setelah menerima dokumen pelajar:

i. Menyemak nombor MyKad pelajar di resit ATM.

ii. Mengakses dan mencetak laporan *Bill Presentment BIMB.*

iii. Menyemak bukti pembayaran di *Bill Payment System BIMB*.

iv. Mengemukakan permohonan kepada Unit Kewangan, Bahagian Khidmat Pengurusan JPPKK.

7.3 BAYARAN PELBAGAI

Jumlah bayaran pelbagai adalah merujuk kepada ketetapan politeknik dan arahan yang sedang berkuatkuasa.

7.3.1 Tatacara pembayaran:

i. Bayaran secara tunai di mana-mana bank yang telah ditetapkan oleh politeknik.

ii. Salinan slip bayaran untuk politeknik perlu diserahkan semasa pendaftaran/ lapor diri (jika perlu).

iii. Pelajar juga perlu menyimpan salinan slip pembayaran sebagai bukti pembayaran.

 Nota:

a) Bagi politeknik yang melaksanakan pendaftaran dan lapor diri secara dalam talian (online), pelajar boleh mengemukakan resit ATM/CDM bank bagi tujuan pendaftaran pengajian/ pendaftaran asrama.

7.3.2 Isu Berkaitan Bayaran Pelbagai

Semua pelajar mesti membuat bayaran pelbagai.

i. Pelajar yang diluluskan penangguhan pengajian selepas mendaftar, TIDAK BOLEH membuat tuntutan terhadap bayaran yang telah dijelaskan.

ii. Pelajar yang diluluskan pertukaran politeknik selepas mendaftar, DIKEHENDAKI membuat bayaran mengikut keperluan semasa politeknik baharu.

iii. Pelajar yang berhenti pengajian selepas mendaftar/ melapor diri BOLEH menuntut balik bayaran mengikut kadar yang ditetapkan oleh politeknik.

iv. Pelajar senior yang tidak layak melapor diri (pelajar GB) tetapi telah membuat bayaran, BOLEH membuat tuntutan kepada politeknik berkenaan bersama bukti pembayaran (salinan slip pembayaran).

v. Calon yang tidak mendaftar sebagai pelajar baharu tetapi telah membuat bayaran, BOLEH membuat tuntutan kepada politeknik berkenaan bersama bukti pembayaran (salinan slip pembayaran).

vi. Pelajar yang bertukar tempat pengajian TIDAK BOLEH menggunakan bayaran yang telah dibuat dari politeknik asal ke Politeknik baharu. Pelajar dibenarkan membuat tuntutan dari Politeknik asal.

7.3.3 Permohonan tuntutan balik bayaran pelbagai hendaklah dikemukakan ke PHEP politeknik masing-masing dengan menyertakan dokumen berikut:

i. Surat permohonan tuntutan

ii. Salinan MyKad yang telah disahkan

iii. Slip bayaran (asal).

iv. Salinan hadapan buku bank/ maklumat akaun bank pemohon yang telah disahkan.

7.4 PELAJAR TAJAAN

7.4.1 Pelajar perlu mengemukakan surat pengesahan tajaan daripada mana-mana agensi seperti Pusat Zakat, Baitulmal, Jabatan Kemajuan Orang Asli (JAKOA) dan lain-lain sebagai jaminan pembayaran yuran.

7.4.2 PHEP perlu membuat tuntutan kepada agensi yang berkenaan bagi pihak pelajar.

7.4.3 PHEP perlu mengemaskini status rekod bayaran pelajar setelah pembayaran diterima daripada agensi.

8

PENGURUSAN PELAJAR

En. Muhd Zaki bin Mustapha
Cik Khamsiah binti Ishak
Cik Shamsuri binti Mior Khalid @ Meor Alif

8.1 PERTUKARAN TEMPAT PENGAJIAN

8.1.1 Calon Yang Belum Mendaftar

Sebarang rayuan pertukaran, maklumkan kepada calon supaya membuat permohonan kepada BAPP, JPPKK agar dipertimbangkan untuk urusan penawaran semula.

8.1.2 Pelajar Yang Telah Mendaftar

8.1.2.1 Pada asasnya, **pelajar tidak dibenarkan membuat pertukaran tempat pengajian**. Walaubagaimanapun, pertimbangan boleh diberi ke atas kes-kes khas dan kritikal. Permohonan pertukaran boleh dibuat melalui PHEP dan perlu dihantar ke BAPP, JPPKK dengan kadar segera. Antara kes kritikal:

a. Kesihatan diri pelajar (penyakit kronik)
b. Keselamatan diri pelajar
c. Kepentingan negara/ politeknik

8.1.2.2 Sebarang ulasan dan sokongan daripada pihak politeknik perlulah mengambil kira kepentingan akademik pelajar.

8.1.2.3 PHEP perlu memastikan tindakan berikut dilaksanakan:

a. Pelajar mengisi borang permohonan dan menyertakan dokumen sokongan. (Lampiran L8 - 01)

b. Pelajar mendapat ulasan daripada pegawai berikut:
   i. Penasihat Akademik
   ii. Ketua Jabatan Akademik
   iii. Pegawai Psikologi (jika perlu)
   iv. Pegawai Perhubungan dan Latihan Industri (jika perlu)
   v. Pustakawan (jika perlu)

c. KJHEP perlu membuat ulasan:

   iii. Status pelajar berdaftar bagi program yang berkaitan di politeknik semasa dan yang dipohon
   iv. Tatatertib/ Disiplin
   v. Bantuan Kewangan

d. Mengemukakan borang tersebut kepada Pengarah Politeknik/ Timbalan Pengarah Politeknik untuk mendapatkan sokongan.

e. PHEP memasukkan maklumat permohonan pelajar ke dalam e-Tukar. (Sila rujuk Manual Pengguna M09 di portal KJHEP)

f. BAPP, JPPKK akan mengeluarkan keputusan permohonan pelajar di dalam e-Tukar.

g. PHEP perlu menyemak status pertukaran pelajar melalui e-Tukar. Keputusan permohonan pertukaran tempat pengajian akan dikeluarkan mulai minggu ke tiga belas (M13).

h. Mengedarkan surat makluman keputusan permohonan pertukaran tempat pengajian (Lampiran L8 – 02) kepada pelajar dan salinan surat makluman kepada pegawai yang berkaitan, antaranya:

   i. Pengarah politeknik baharu
   ii. Ketua Jabatan Akademik
   iii. Pegawai Perhubungan dan Latihan Industri (jika perlu)
   iv. Pegawai Peperiksaan
   v. Pustakawan
   vi. Pegawai Sukan dan Kokurikulum (jika perlu)
   vii. Fail Pelajar

i. Bagi permohonan pelajar yang diluluskan, PHEP perlu mengemaskini data pelajar di dalam SPMP. (Sila rujuk Manual Pengguna M10 di portal KJHEP)

j. PHEP politeknik asal perlu menghantar fail pelajar ke politeknik baharu beserta surat iringan setelah pengesahan lapor diri pelajar tersebut dibuat oleh politeknik berkenaan. (Lampiran L8 - 03)

8.1.2.4 Pelajar yang memohon pertukaran hanya dibenarkan bertukar pada semester berikutnya.

8.1.2.5 PHEP Politeknik yang menerima pelajar hendaklah melaksanakan langkah berikut:

a. Menyemak surat makluman daripada politeknik asal.

b. Menyemak status akademik semasa pelajar seperti keputusan peperiksaan akhir pelajar.

c. Mendaftar dan memberi nombor pendaftaran baharu dengan mengekalkan tahun proses dan sesi ambilan pelajar di politeknik asal di dalam SPMP bagi program yang sama. (Sila rujuk Manual Pengguna M11 di portal KJHEP)

d. Nombor pendaftaran baharu akan didaftarkan bagi kes pertukaran yang melibatkan program yang berbeza mengikut ambilan sesi semasa.

e. Memaklumkan pengesahan lapor diri pelajar dan permohonan penghantaran fail pelajar. (Lampiran L8 - 04)

f. Mengesahkan kepada PHEP politeknik asal penerimaan fail pelajar. (Lampiran L8 - 05)

8.1.2.6 Pelajar memohon untuk membatalkan/ menangguh Pertukaran

a. Pelajar mengemukakan Surat Permohonan Pembatalan/ Penangguhan Pertukaran kepada Pengarah Politeknik asal.

b. Politeknik asal hendaklah memaklumkan keputusan tersebut kepada Pelajar, Pengarah BAPP, JPPKK dan Pengarah Politeknik baharu.
(Lampiran L8 – 06 / Lampiran L8 – 07)

Nota:

a) Bagi pelajar yang sedang menjalani siasatan kes polis, pastikan pertukaran politeknik tidak mengganggu proses siasatan.

b) Bagi permohonan pertukaran tempat pengajian yang melibatkan pertukaran program, pelajar hendaklah menggunakan Borang Permohonan Pertukaran Tempat Pengajian (Lampiran L8 - 01) dan mencatat program yang dipohon.

8.2 PERTUKARAN PROGRAM

Pada asasnya penawaran program dan tempat pengajian adalah **muktamad**. Walau bagaimanapun, pertimbangan boleh diberi ke atas kes-kes khas dan kritikal.

8.2.1 Pertukaran Program Diploma

8.2.1.1 Calon yang belum mendaftar

Sebarang rayuan pertukaran, maklumkan kepada calon supaya membuat permohonan kepada BAPP, JPPKK agar dipertimbangkan untuk urusan penawaran semula.

8.2.1.2 Pelajar yang telah mendaftar

a. Permohonan yang diterima dalam tempoh satu (1) bulan sesi pengajian semasa bermula akan diproses untuk sesi semasa.

b. Permohonan yang diterima selepas tempoh di atas, akan dipertimbangkan untuk semester berikutnya.

c. Pelajar yang diluluskan permohonannya akan ditempatkan pada semester yang ditetapkan oleh Ketua Jabatan Akademik yang baharu.

d. Pelajar akan diberi nombor pendaftaran yang baharu mengikut sesi ambilan semasa.

8.2.1.3 PHEP perlu memastikan tindakan berikut dilaksanakan:

a. Pelajar mengisi Borang Permohonan Pertukaran Program dan menyertakan dokumen sokongan. (Lampiran L8 - 08)

b. Pelajar mendapat ulasan daripada pegawai berikut:

i. Penasihat Akademik
ii. Ketua Jabatan Akademik asal
iii. Ketua Jabatan Akademik baharu
iv. Pegawai Psikologi

c. KJHEP membuat ulasan mengenai:

   i. Syarat kelayakan kemasukan ke program yang dipohon termasuklah merujuk kepada sijil kait bagi lepasan Sijil Politeknik / Kolej Komuniti.
   ii. Statistik pelajar berdaftar bagi program semasa dan program yang dipohon.
   iii. Pilihan program yang dipohon pada Butiran Pemohon.

d. Mengemukakan borang tersebut kepada Pengarah Politeknik/ Timbalan Pengarah untuk kelulusan.

e. Memaklumkan keputusan permohonan kepada pelajar (Lampiran L8 - 09) secara bertulis dan mengedarkan salinan surat makluman pertukaran program pelajar kepada pegawai yang berkaitan, antaranya:

   i. Ketua Jabatan Akademik Asal
   ii. Ketua Jabatan Akademik Baharu
   iii. Pegawai Perhubungan dan Latihan Industri
   iv. Pegawai Peperiksaan
   v. Pustakawan
   vi. Pegawai Sukan dan Kokurikulum
   vii. Fail Pelajar.

f. Bagi permohonan yang berjaya, pelajar akan diberi nombor pendaftaran yang baharu mengikut sesi ambilan semasa. PHEP perlu mengemaskini data pelajar di dalam SPMP.
(Sila rujuk Manual Pengguna M12 di portal KJHEP)

g. Mengeluarkan kad pelajar yang baharu.

h. Mengemaskini fail pelajar. Mencatat nombor pendaftaran baharu dan tarikh kuatkuasa pertukaran pada fail pelajar berkenaan.

8.3 PERTUKARAN MOD PENGAJIAN (PROGRAM SEPENUH MASA KE PROGRAM KURSUS SECARA SAMBILAN)

Bagi pertukaran di politeknik yang sama, kelulusan pertukaran adalah di bawah bidang kuasa Pengarah Politeknik masing-masing. Sekiranya ia melibatkan pertukaran ke politeknik lain, kelulusan pertukaran adalah di bawah bidang kuasa BAPP, JPPKK.

8.3.1 Permohonan pertukaran program diploma sepenuh masa ke program diploma secara sambilan sahaja yang boleh dipertimbangkan. Permohonan sebaliknya tidak dibenarkan.

8.3.2 Pertukaran Mod Pengajian di politeknik yang sama.

PHEP perlu memastikan tindakan berikut dilaksanakan:

a. Pelajar mengisi Borang Permohonan Pertukaran Mod Pengajian dan menyertakan dokumen sokongan seperti surat rayuan pelajar, surat tawaran pekerjaan atau dokumen sokongan yang berkaitan.
(Lampiran L8 - 10)

b. Pelajar mendapat ulasan daripada pegawai berikut:

i. Penasihat Akademik
ii. Ketua Jabatan Akademik
iii. Ketua Jabatan Hal Ehwal Pelajar

c. Mengemukakan borang tersebut kepada Pengarah Politeknik / Timbalan Pengarah untuk kelulusan.

d. Memaklumkan keputusan permohonan kepada pelajar secara bertulis dan mengedarkan salinan surat makluman pertukaran mod pengajian pelajar kepada pegawai yang berkaitan, antaranya:

i. Penyelaras KSS politeknik
ii. Ketua Jabatan Akademik asal
iii. Pegawai Peperiksaan
iv. Pustakawan
v. Fail Pelajar
(Lampiran L8 - 11)

8.3.3 Pertukaran mod pengajian dan tempat pengajian.

PHEP perlu memastikan tindakan berikut dilaksanakan:

a. Program yang dipohon mestilah ditawarkan oleh politeknik berkaitan.

b. Pelajar mengisi Borang Permohonan Pertukaran Mod Pengajian dan menyertakan dokumen sokongan seperti surat rayuan pelajar, surat tawaran pekerjaan atau dokumen sokongan yang berkaitan.

c. Pelajar mendapat ulasan daripada pegawai berikut:

i. Penasihat Akademik
ii. Ketua Jabatan Akademik
iii. Ketua Jabatan Hal Ehwal Pelajar

d. Mengemukakan borang tersebut kepada Pengarah Politeknik / Timbalan Pengarah untuk sokongan.

e. Menghantar surat iringan dengan ringkasan maklumat, borang permohonan dan dokumen sokongan kepada Pengarah BAPP, JPPKK.

Contoh ringkasan maklumat seperti di bawah.

Bil	Nama, No. KP & No. Pendaftaran	Program & Mod Program Sekarang	Program & Mod Program Dipohon	Sem	Politeknik Dipohon	Sebab Memohon
1	Imran bin Ajmain 001030145341 20DKA19F1003	DKA/ Sepenuh Masa	DKA/ Secara Sambilan	1	PMU	Menerima tawaran pekerjaan

f. Menerima keputusan pertukaran daripada Pengarah BAPP, JPPKK melalui Pengarah Politeknik.

g. Memaklumkan keputusan pertukaran kepada pelajar secara bertulis dan mengedarkan salinan surat makluman pertukaran mod pengajian pelajar kepada pegawai yang berkaitan, antaranya:

i. Pengarah politeknik baharu
ii. Ketua Jabatan Akademik asal
iii. Pegawai Peperiksaan
iv. Pustakawan
v. Fail Pelajar
(Lampiran L8 – 11)

h. Mengemaskini data pelajar di SPMP.

i. Menghantar fail pelajar ke pejabat Unit Latihan dan Pendidikan Lanjutan (ULPL) politeknik berkaitan. (Lampiran L8 – 12)

Nota:

a) Jika diluluskan pertukaran mod pengajian, kad pelajar hendaklah dikembalikan ke JHEP.
b) Pemohon boleh memohon untuk menangguhkan pengajian, sementara menunggu keputusan permohonan pertukaran mod pengajian.

8.4 TANGGUH PENGAJIAN

8.4.1 Permohonan boleh dikemukakan kepada Pengarah Politeknik untuk pertimbangan sepanjang sesi pengajian.

8.4.2 Tangguh pengajian hanya dibenarkan untuk sesi semasa sahaja kecuali kes kesihatan dan dibuktikan dengan akuan doktor.

8.4.3 Sebarang penangguhan pengajian yang diluluskan oleh Pengarah Politeknik tidak diambil kira sebagai tempoh pengajian (rujuk Arahan-Arahan Peperiksaan Dan Kaedah Penilaian yang sedang berkuatkuasa).

8.4.4 PHEP perlu memastikan tindakan berikut dilaksanakan:

a. Borang Permohonan Penangguhan Pengajian (Lampiran L8 – 13) diisi oleh pemohon dan menyertakan dokumen sokongan (surat rayuan pelajar/ ibu/ bapa/ penjaga atau laporan kesihatan).

b. Permohonan perlu mendapat ulasan daripada pegawai berkaitan.

i. Penasihat Akademik
ii. Pegawai Psikologi (Jika perlu)
iii. Pegawai Perhubungan Dan Latihan Industri (jika berkaitan)
iv. Ketua Jabatan Akademik

c. KJHEP membuat ulasan seperti:

i. Masalah kesihatan (jika ada)
ii. Kes disiplin/tatatertib/kes polis
iii. Masalah kewangan
iv. Masalah lain

d. Mengemukakan borang tersebut kepada Pengarah Politeknik/ Timbalan Pengarah.

e. Memaklumkan keputusan permohonan kepada pelajar secara bertulis dan mengedarkan salinan surat tangguh pengajian pelajar kepada pegawai yang berkaitan, antaranya:

i. Ketua Jabatan Akademik
ii. Pegawai Perhubungan dan Latihan Industri
ii. Pegawai Peperiksaan
iii. Pustakawan
iv. Pegawai Sukan dan Kokurikulum
v. Fail Pelajar.
(Lampiran L8 – 14)

f. Mengemaskini data pelajar di dalam SPMP sekiranya permohonan diluluskan (Sila rujuk Manual Pengguna M10 di portal KJHEP)

g. Mengemaskini fail pelajar.

Nota:

a) Jika pelajar masih belum bersedia untuk meneruskan pengajian pada semester berikut, perlu mengemukakan permohonan tangguh pengajian sekali lagi.
b) Pelajar yang dalam status tangguh pengajian, dibenarkan memohon pertukaran politeknik.
c) Pelajar yang gagal melapor diri pada sesi berikutnya, tindakan hendaklah diambil mengikut prosedur Pelajar Tidak Melapor Diri.

8.5 BERHENTI PENGAJIAN

Apabila menerima surat atau borang permohonan berhenti pengajian (Lampiran L8 – 15 dan Lampiran L8 – 16) daripada pihak pelajar/ menerima makluman daripada jabatan, PHEP hendaklah mengambil tindakan berikut:

8.5.1 Memaklumkan kepada pemohon atau wakil untuk mendapatkan ulasan daripada pegawai berkaitan:

i. Penasihat Akademik
ii. Pegawai Psikologi (jika perlu)
iii. Pegawai Perhubungan Dan Latihan Industri (jika berkaitan)
iv. Ketua Jabatan Akademik
v. Pustakawan
vi. Ketua Jabatan Hal Ehwal Pelajar

8.5.2 Mengemukakan borang permohonan kepada Pengarah/ Timbalan Pengarah Politeknik.

8.5.3 Memaklumkan keputusan permohonan kepada pelajar secara bertulis dan mengedarkan salinan surat berhenti pengajian pelajar kepada pegawai yang berkaitan, antaranya:

i. Ketua Jabatan Akademik
ii. Pegawai Perhubungan dan Latihan Industri
iii. Pegawai Peperiksaan
iv. Pustakawan
v. Pegawai Sukan dan Kokurikulum
vi. Pegawai Psikologi (jika perlu)
vii. Fail Pelajar
viii. Ibu/ bapa/ penjaga
(Lampiran L8 – 17)

8.5.4 Mengemaskini data pelajar di SPMP. (Sila rujuk Manual Pengguna M10 di portal KJHEP)

8.5.5 Mengemaskini Fail Pelajar.

Nota:

a) Sekiranya ada permohonan berhenti pengajian secara lisan seperti melalui telefon, pegawai yang menerima maklumat tersebut perlu membuat catatan seperti pemaklum, hubungan dengan pelajar, tarikh, masa, nombor telefon.
b) Maklumat tersebut hendaklah dilampirkan bersama dengan borang permohonan berhenti pengajian.

8.6 KAD PELAJAR

PHEP perlu memastikan tindakan berikut dilaksanakan:

8.6.1 Menyediakan kad pelajar yang mengandungi maklumat berikut:

i. Nama penuh pelajar
ii. No pendaftaran
iii. No MyKad
iv. Tempoh Sah laku
v. Gambar pelajar
vi. Logo Politeknik
vii. No Siri yang mengandungi Kod Pilih dan Kod Kategori (Lampiran L8 - 18)

8.6.2 Merekod dan menyerahkan kad pelajar.

8.7 FAIL PELAJAR

PHEP memastikan tindakan berikut dilaksanakan:

8.7.1 Menyediakan fail bagi setiap pelajar yang mengandungi dokumen yang telah disahkan seperti berikut, antaranya:

i. Borang Jawapan Tawaran (BJT-JPP)
ii. Salinan Surat Tawaran
iii. Salinan Sijil SPM/ Slip Keputusan Akademik Luar Negara dan surat akuan Agensi Kelayakan Malaysia (MQA) atau Slip Keputusan Sijil Kemahiran atau Transkrip Politeknik/ Kolej Komuniti/ Sijil yang diiktiraf setaraf dengannya;
iv. Salinan MyKad
v. Salinan Sijil Berhenti Sekolah
vi. Borang BHEP1 hingga BHEP6 yang lengkap diisi

8.7.2 Mengemaskini Fail Pelajar

PHEP meminta pelajar menyerahkan dokumen yang tiada atau tidak lengkap.

8.7.3 Mengurus Fail Pelajar

i. Fail pelajar hendaklah disimpan di lokasi yang sesuai.
ii. Hanya pegawai yang dibenarkan sahaja boleh mengakses fail pelajar.
iii. Urusan pergerakan fail perlu direkodkan.

8.7.4 Pelupusan Fail

i. Pelupusan fail selepas LIMA (5) tahun fail tidak aktif hendaklah dibuat mengikut prosedur Arkib Negara Malaysia (ARKIB).

ii. Permohonan perlu dikemukakan melalui politeknik masing-masing.

Nota:

a) Fail pelajar cemerlang atau bermasalah disarankan untuk disimpan.

8.8 PENGURUSAN PANGKALAN DATA PELAJAR

8.8.1 Kod status dalam pangkalan data pelajar hendaklah seperti di bawah:

Status	Medan Status	Medan Semester	Catatan
Aktif	A	S2	Aktif pada semester 2
Aktif Latihan Industri	L	S4/ S6	Latihan Industri pada semester 4 / semester 6
Tangguh	D	S2	Tangguh pada semester 2
Tukar Politeknik	C	S2	Tukar pada semester 2
Berhenti	W	S2	Berhenti pada semester 2
Gagal Berhenti	X	S2	Gagal Berhenti pada semester 2
Graduat	G	S6	Graduat pada semester 6
Senior Tidak Lapor Diri	M	S2	Tidak Lapor Diri semester 2
Gantung Pengajian	H	S2	Gantung Pengajian Semester 2
Meninggal Dunia	E	S2	Meninggal pada semester 2

Nota:

a) Medan semester di dalam SPMP diisi dengan 1 hingga 9 sahaja.

8.8.2 Kod Jabatan dalam pangkalan data pelajar hendaklah direkodkan seperti di bawah:

Kod	Jabatan
A	Jabatan Kejuruteraan Awam
E	Jabatan Kejuruteraan Elektrik
M	Jabatan Kejuruteraan Mekanikal
P	Jabatan Perdagangan
H	Jabatan Pelancongan dan Hospitaliti
F	Jabatan Teknologi Maklumat dan Komunikasi
V	Jabatan Reka Bentuk dan Komunikasi Visual
K	Jabatan Kejuruteraan Perkapalan
T	Jabatan Teknologi Makanan
R	Jabatan Kejuruteraan Petrokimia
B	Jabatan Penyenggaraan Pesawat
G	Jabatan Agroteknologi dan Bio-Industri
S	Jabatan Matematik, Sains dan Komputer
L	Jabatan Pengajian Am
N	Jabatan Teknologi Kimia & Makanan

8.8.3 Kod Bangsa dalam pangkalan data hendaklah seperti di bawah:

Kod	Bangsa
M	Melayu
C	Cina
I	India
S	Bumiputera Sabah
Q	Bumiputera Sarawak
O	Bumiputera Orang Asli
L	Lain-lain

8.8.4 PHEP hendaklah memastikan data pelajar dibuat *backup* secara berkala.

9 STATISTIK

En. Shuhaimi bin Samanol
Pn. Norhayati binti Ismail
Pn. Maliah binti Rohaizat

9.1 STATISTIK PENERIMAAN TAWARAN

PHEP boleh mencetak statistik penerimaan tawaran melalui Portal KJHEP.

9.2 STATISTIK PENDAFTARAN

PHEP boleh mencetak statistik pendaftaran melalui portal KJHEP.

9.3 STATISTIK KEMASUKAN, ENROLMEN DAN LULUSAN (IEO)

9.3.1 Definisi

a. Kemasukan

Pelajar baharu yang mendaftar pada sesi semasa (termasuk bilangan pelajar yang berhenti, tangguh dan tukar tempat pengajian).

b. Enrolmen

Bilangan pelajar berdaftar pada sesi semasa (termasuk bilangan pelajar yang menjalani latihan industri, tangguh pengajian, mengulang penilaian, gantung pengajian dan tidak lapor diri) dan pelajar pindah masuk dari politeknik lain kecuali pelajar berhenti, pindah keluar ke politeknik lain dan KSS.

c. Lulusan

Pelajar yang telah tamat pengajian pada sesi sebelumnya.

9.3.2 PHEP perlu memastikan tindakan berikut dilaksanakan:

a. Menyediakan data pelajar berdasarkan format yang disediakan. Contoh struktur data seperti di bawah:

No MyKad	Nama	No. Pend.	Jantina	Bangsa	Sem	Sesi Semasa	Sesi Ambilan	Status
900331135459	Hafiz Abu Chek	20DIP13F2001	L	M	S1	DIS 2013	JUN 2013	A

b. Menghantar data ke BAPP, JPPKK.

c. Menyemak statistik IEO di portal KJHEP.

9.4 NORMA AMBILAN PELAJAR

9.4.1 PHEP memastikan tindakan berikut dilaksanakan:

a. Memuat turun cadangan norma ambilan pelajar melalui portal KJHEP

b. Menyelaras pengesahan norma ambilan pelajar dengan Ketua Jabatan Akademik.

c. Mengemukakan maklumbalas norma ambilan pelajar kepada Pengarah BAPP, JPPKK. (Lampiran L9 – 01).

d. Menerima pengesahan norma ambilan daripada Pengarah BAPP, JPPKK.

10

MAKLUMAT TAMBAHAN

En. Muhd Zaki bin Mustapha
Pn. Azizah binti Safie
Pn. Nur Hidayah binti Khalid

10.1 KURSUS SECARA SAMBILAN

10.1.1 Penawaran program peringkat diploma adalah bergantung kepada politeknik masing-masing.

10.1.2 Iklan kemasukan bagi Kursus Secara Sambilan (KSS) diuruskan oleh BAPP, JPPKK.

10.1.3 Permohonan kemasukan diselaraskan secara dalam talian melalui Sistem Pengambilan Kursus Secara Sambilan (SPKSS).

10.1.4 Proses pemilihan dan penawaran pelajar diselaraskan bersama oleh BAPP, JPPKK dan Unit Latihan dan Pendidikan Lanjutan (ULPL).

10.1.5 Proses pendaftaran pelajar akan dikendalikan di politeknik masing-masing melalui Unit Latihan dan Pendidikan Lanjutan (ULPL).

10.1.6 Statistik pendaftaran disediakan oleh Pegawai Latihan & Pendidikan Lanjutan (PLPL) untuk dihantar kepada Pengarah Bahagian Kolaborasi Industri Dan Komuniti, JPPKK.

Nota:

Maklumat lanjut, rujuk Buku Panduan Pengambilan Dan Pengurusan Kursus Secara Sambilan (KSS) yang sedang berkuatkuasa.

10.2 SENARAI POLITEKNIK

Senarai Politeknik, Kementerian Pengajian Tinggi. (Lampiran L10 – 01)

10.3 SKOP TUGAS PEGAWAI HAL EHWAL PELAJAR (PENGAMBILAN & DATA)

Senarai tugas seperti di lampiran. (Lampiran L10 – 02)

LAMPIRAN

TEMPOH PENGAJIAN PROGRAM DI POLITEKNIK

LULUSAN	PROGRAM	TEMPOH PENGAJIAN* (SEMESTER)
SPM	Diploma Kejuruteraan Perkapalan	7
	Diploma Lain	6
	Diploma Bidang Perdagangan di Politeknik METrO **KECUALI** Diploma Kewangan dan Perbankan (6 Semester)	5
	Diploma Teknologi Maklumat (Teknologi Digital) di Politeknik Ungku Omar (PUO), Politeknik Balik Pulau (PBU), Politeknik Seberang Perai (PSP), Politeknik Sultan Idris Shah (PSIS) dan Politeknik METrO Kuala Lumpur (PMKL)	5
	Diploma Pengajian Video & Filem di Politeknik METrO Tasek Gelugor (PMTG)	5
	Pra Diploma Sains	2
	Pra Diploma Perdagangan	1
Program Matrikulasi KPM	Dibuka untuk semua bidang bagi jurusan Sains, Perakaunan dan aliran Teknikal **KECUALI** Kejuruteraan Perkapalan dan Kejuruteraan Penyenggaraan Pesawat.	6
Sijil Kejuruteraan Pertanian PERDA-TECH	Diploma Kejuruteraan Mekanikal (Pertanian)	6
Sijil Institut Pertanian	- Diploma Agroteknologi - Diploma Akuakultur - Diploma Hortikultur Lanskap	6
Sekolah/Program Percantuman Pendidikan Khas	Sijil Kemahiran	4
Sijil Politeknik	Diploma	6
Sijil Kolej Komuniti	Diploma	6
Sijil Kemahiran Malaysia Tahap 3	Diploma	6
Sijil Institut Kemahiran MARA (IKM)	Diploma	6
Lulusan Pra Diploma Politeknik	- Diploma bidang Kejuruteraan berkaitan - Diploma bidang Perdagangan berkaitan	6
Diploma Politeknik	Diploma Lanjutan	3

Dploma Kejuruteraan Awam	Sarjana Muda Teknologi Kejuruteraan Awam Dengan Kepujian	6
Diploma Pengurusan Pelancongan	Sarjana Muda Sains (Kepujian) Pengurusan Pelancongan dan Hospitaliti Antarabangsa	
Diploma Pengurusan Hotel		
Diploma Kejuruteraan Elektronik	Sarjana Muda Teknologi Kejuruteraan Elektronik (Elektronik Perubatan) Dengan Kepujian	
Diploma Kejuruteraan Elektronik (Kawalan)		
Diploma Kejuruteraan Elektronik (Komputer)		
Diploma Kejuruteraan Elektronik (Komunikasi)		
Diploma Kejuruteraan Elektronik (Perubatan)		
Diploma Kejuruteraan Elektronik (Optoelektronik)		
Diploma Kejuruteraan Mekanikal	Sarjana Muda Teknologi Kejuruteraan Pembuatan (Reka Bentuk Automotif) Dengan Kepujian	
Diploma Kejuruteraan Mekanikal (Automotif)		
Diploma Kejuruteraan Mekanikal (Pembuatan)		
Diploma Kejuruteraan Mekanikal (Rekabentuk Pembuatan Automotif)		
Diploma Rekabentuk Grafik	Sarjana Muda Reka Bentuk Komunikasi Visual dan Media Baharu Dengan Kepujian	
Diploma Seni Digital		
Diploma Pengajian Video dan Filem		
Diploma Rekabentuk Fesyen dan Pakaian		
Diploma Rekabentuk Industri		
Diploma Lanjutan Pengurusan Fasiliti	Sarjana Muda Teknologi Pengurusan Fasiliti Dengan Kepujian	4
Diploma Kejuruteraan Perkhidmatan Bangunan	Sarjana Muda Teknologi Pengurusan Fasiliti Dengan Kepujian	7
Diploma Kejuruteraan yang berkaitan	Sarjana Muda Teknologi Pengurusan Fasiliti Dengan Kepujian	8
Diploma Lanjutan Kejuruteraan Mekanikal	Sarjana Muda Teknologi Kejuruteraan Pembuatan (Pengurusan Rangkaian Bekalan) Dengan Kepujian	4

Diploma Lanjutan Kejuruteraan Rekabentuk & Pembuatan Automotif	Sarjana Muda Teknologi Kejuruteraan Pembuatan (Pengurusan Rangkaian Bekalan) Dengan Kepujian	6
Diploma Lanjutan Kejuruteraan Mekatronik		
Diploma Kejuruteraan Mekanikal yang berkaitan		
Diploma Seni Bina	Sarjana Muda Sains Perumahan, Bangunan dan Perancangan (Kepujian) (Senibina)	

Nota :

- Tempoh pengajian sebenar program Sarjana Muda Politeknik secara *Home-grown* adalah 8 semester. Pengecualian kredit diberi berdasarkan kelulusan pemohon.
- Penangguhan pengajian tidak diambil kira dalam bilangan semester.
- Penggantungan pengajian di bawah Akta 174 diambil kira dalam bilangan semester. Walau bagaimanapun, bagi pelajar yang digantung pengajian sementara menunggu keputusan perbicaraan dan jika didapati tidak bersalah, semester di mana pelajar tersebut digantung tidak diambil kira dalam bilangan semester.
- Semester di mana pelajar tidak melapor diri diambil kira dalam bilangan semester.
- Tempoh pengajian politeknik hendaklah dibaca bersama dengan peraturan peperiksaan dan peraturan-peraturan politeknik yang sedang berkuatkuasa.
- Diploma Lanjutan di politeknik telah diiktiraf oleh Jabatan Perkhidmatan Awam (JPA) setara dengan Ijazah Sarjana Muda Am dari IPTA.

KOD PROGRAM, KOD PILIH DAN KOD KATEGORI

Peringkat Pengajian	Kod Program	Kod Pilih	Kod Kategori	Nama Kategori	Semester Permulaan
Diploma	DXX	DX999	AA	Lepasan Sijil Pelajaran Malaysia	1
			AB	Lulusan Sijil Politeknik	1
			AD	Lulusan Sijil Kolej Komuniti	1
			AJ	Lulusan Sijil Kolej Komuniti Bermodular	1
			AF	Lulusan Sijil Matrikulasi KPM	1
			AG	Lulusan Sijil Pertanian Institut Pertanian Malaysia	1
			AH	Lulusan Sijil Institut Kemahiran Tinggi PERDA	1
			AL	Lulusan Pra Diploma (MUTIARA)	1
			AM	Lulusan Pra Diploma (MDAIM)	1
			AP	Lulusan Pra Diploma (MDGF)	1
			AR	Lulusan Sijil Institut Kemahiran MARA	1
			AT	Lulusan Sijil Kemahiran Malaysia (SKM)	1
			AW	Lepasan Sijil Pelajaran Malaysia (TUDM)	1
Pra Diploma	IXX	PX999	AN	Lepasan Sijil Pelajaran Malaysia (MDAIM)	1
			AS	Lepasan Sijil Pelajaran Malaysia (MDGF)	1
			AU	Lepasan Sijil Pelajaran Malaysia (MUTIARA)	1
Sijil Kemahiran Politeknik (Berkeperluan Khas)	KXX	KX999	AC	Lepasan SPM/Sekolah Pendidikan Khas	1
Sarjana Muda	BXX	BX999	AE	Diploma Politeknik	1/3
			AV	Diploma Politeknik (Kejuruteraan Perkhidmatan Bangunan)	2
			AK	Diploma Lanjutan Politeknik	3/5

SENARAI KOD PILIH DAN NAMA PROGRAM PERINGKAT DIPLOMA POLITEKNIK

Bil.	Kod Pilih	Kod Program	Nama Program
1	DA001	DKA	Diploma Kejuruteraan Awam
2	DA002	DPB	Diploma Kejuruteraan Perkhidmatan Bangunan
3	DA003	DBK	Diploma Teknologi Berasaskan Kayu
4	DA004	DPW	Diploma Perancangan Bandar dan Wilayah
5	DA005	DSB	Diploma Seni Bina
6	DA006	DUB	Diploma Ukur Bahan
7	DA008	DAS	Diploma Kejuruteraan Alam Sekitar
8	DA010	DGU	Diploma Geomatik
9	DB001	DAM	Diploma Kejuruteraan Penyenggaraan Pesawat
10	DE001	DET	Diploma Kejuruteraan Elektrik
11	DE002	DJK	Diploma Kejuruteraan Elektronik (Kawalan)
12	DE003	DTK	Diploma Kejuruteraan Elektronik (Komputer)
13	DE004	DEP	Diploma Kejuruteraan Elektronik (Komunikasi)
14	DE005	DEU	Diploma Kejuruteraan Elektronik (Perubatan)
15	DE007	DEE	Diploma Kejuruteraan Elektrik & Elektronik
16	DE008	DOE	Diploma Kejuruteraan Elektronik (Optoelektronik)
17	DE009	DEG	Diploma Kejuruteraan Elektrik (Tenaga Hijau)
18	DE011	DEQ	Diploma Kejuruteraan Elektrik (Kecekapan Tenaga)
19	DF007	DDT	Diploma Teknologi Maklumat (Teknologi Digital)
20	DG001	DBT	Diploma Bioteknologi
21	DG002	DAG	Diploma Agroteknologi
22	DG003	DAQ	Diploma Akuakultur
23	DG004	DLH	Diploma Hortikultur Landskap
24	DH001	DEV	Diploma Pengurusan Acara
25	DH004	DUP	Diploma Pengurusan Pelancongan
26	DH006	DCC	Diploma Seni Kulinari
27	DH007	DHM	Diploma Pengurusan Hotel
28	DH008	DHR	Diploma Pengurusan Resort
29	DH009	DRT	Diploma Pelancongan Rekreasi
30	DH010	DHF	Diploma Perkhidmatan Makanan Amalan Halal
31	DK001	DKP	Diploma Kejuruteraan Perkapalan
32	DK002	DNA	Diploma Senibina Kapal
33	DM001	DKM	Diploma Kejuruteraan Mekanikal
34	DM002	DAD	Diploma Kejuruteraan Mekanikal (Automotif)
35	DM003	DJL	Diploma Kejuruteraan Mekanikal (Loji)
36	DM004	DTP	Diploma Kejuruteraan Mekanikal (Pembuatan)

Bil.	Kod Pilih	Kod Program	Nama Program
37	DM005	DPU	Diploma Kejuruteraan Mekanikal (Penyamanan Udara dan Penyejukbekuan)
38	DM006	DPT	Diploma Kejuruteraan Mekanikal (Pertanian)
39	DM007	DMP	Diploma Kejuruteraan Mekanikal (Pembungkusan)
40	DM008	DMK	Diploma Kejuruteraan Mekanikal (Plastik)
41	DM009	DMT	Diploma Kejuruteraan Mekanikal (Tekstil)
42	DM010	DMB	Diploma Kejuruteraan Mekanikal (Bahan)
43	DM011	DEM	Diploma Kejuruteraan Mekatronik
44	DM012	DRA	Diploma Kejuruteraan Mekanikal (Rekabentuk Pembuatan Automotif)
45	DM013	DRP	Diploma Kejuruteraan Mekanikal (Rekabentuk Produk)
46	DM014	DMA	Diploma Kejuruteraan Mekanikal (Automasi)
47	DP001	DAT	Diploma Akauntansi
48	DP002	DIN	Diploma Insurans
49	DP003	DKB	Diploma Kewangan dan Perbankan
50	DP004	DPR	Diploma Pemasaran
51	DP005	DPM	Diploma Pengajian Perniagaan
52	DP006	DPI	Diploma Perniagaan Antarabangsa
53	DP007	DSK	Diploma Sains Kesetiausahaan
54	DP008	DRM	Diploma Pengurusan Peruncitan
55	DP011	DIB	Diploma Kewangan dan Perbankan Islam
56	DP012	DEN	Diploma Keusahawanan
57	DP013	DBS	Diploma Sistem Maklumat Perniagaan
58	DP014	DLS	Diploma Pengurusan Logistik dan Rantaian Bekalan
59	DR001	DPE	Diploma Kejuruteraan Proses (Petrokimia)
60	DR002	DPC	Diploma Kejuruteraan Mekanikal (Petrokimia)
61	DR003	DEI	Diploma Kejuruteraan Elektrik & Instrumentasi
62	DR004	DCE	Diploma Kejuruteraan Kimia
63	DT001	DTM	Diploma Teknologi Makanan
64	DT002	DMH	Diploma Teknologi Makanan Pengurusan Halal
65	DT003	DFO	Diploma Teknologi Kimia (Lemak dan Minyak)
66	DV001	DFP	Diploma Rekabentuk Fesyen dan Pakaian
67	DV002	DRG	Diploma Rekabentuk Grafik
68	DV003	DRI	Diploma Rekabentuk Industri
69	DV004	DDS	Diploma Seni Digital
70	DV005	DDV	Diploma Pengajian Video Dan Filem
71	DV006	DMC	Diploma Teknologi Media Cetak
72	DV009	DAK	Diploma Animasi Kreatif

SENARAI KUMPULAN MATA PELAJARAN SPM TAHUN 2019 & TAHUN SEBELUMNYA

BAHASA	
Bahasa Melayu / Malaysia	Bahasa Inggeris
Bahasa Arab Komunikasi	Bahasa Cina
Bahasa Arab Tinggi	Bahasa Tamil
Bahasa Arab	Bahasa Kadazan / Dusun
Bahasa Iban	Bahasa Perancis
Kesusasteraan Cina	Bahasa Punjabi
Kesusasteraan Tamil	Bible Knowledge
Bahasa Jerman	Bahasa Jepun
SAINS	
Biologi / Biology	Sains / Science
Fizik / Physics	Sains Kejuruteraan
Kimia / Chemistry	Sains Tambahan / Additional Sciences
TEKNOLOGI	
Fundamentals of Programming	Pengajian Kejuruteraan Jentera / Mekanikal
Grafik Berkomputer	Pengajian Pakaian
Lukisan Kejuruteraan	Pengurusan Makanan
Matematik / Mathematics	Produksi Multimedia
Matematik Tambahan / Additional Mathematics	Programming and Development Tools
Pengajian Agroteknologi	Reka Cipta
Pengajian Kejuruteraan Awam	Sains Pertanian
Pengajian Kejuruteraan Elektrik & Elektronik	Teknologi Kejuruteraan
Pengajian Kejuruteraan Elektrik	Pertanian
Asas Kelestarian	Sains Komputer
Grafik Komunikasi Teknikal	Teknologi Maklumat / Information & Communication Technology
SASTERA IKHTISAS	
Asas Perakaunan	Perdagangan
Ekonomi Asas	Prinsip Perakaunan / Prinsip Akaun
Ekonomi Rumah Tangga	Prinsip Perniagaan
Geografi	Sejarah
Perniagaan	Ekonomi
Sains Rumah Tangga	
KEMANUSIAAN	
English for Science and Technology	Teater
Kesusasteraan Melayu	Pendidikan Moral
Literature in English	Pengetahuan Sains Sukan
Pendidikan Muzik	Tasawwur Islam
Muzik	Tari
Seni Halus	Sains Sukan
PENGAJIAN ISLAM	
Pendidikan Al-Quran dan As-Sunnah	Pendidikan Syariah Islamiah
Pendidikan Islam	Hifz Al Quran
Maharat Al Quran	Turath Al-Quran Dan Al-Sunnah
Turath Dirasat Islamiah	Turath Bahasa Arab
Usul Al-Din	Al-Syariah
Al-Lughah Al-Arabiah Al-Mu'asirah	Manahij Al-'Ulum Al-Islamiah
Al-Adab Wa Al-Balaghah	

SENARAI KUMPULAN MATA PELAJARAN SPM TAHUN 2019 & TAHUN SEBELUMNYA

VOKASIONAL	
Akuakultur & Haiwan Rekreasi	Menservis Peralatan Elektrik Domestik
Amalan Bengkel & Kejuruteraan	Menservis Peralatan Penyejukan & Penyamanan Udara
Amalan Bengkel Mekanikal	Menservis Radio & TV
Amalan Bengkel Mesin	Patisserie
Aplikasi Elektrik & Elektronik	Pelancongan dan Rekreasi
Aplikasi Komputer Dalam Perniagaan	Pemasangan & Kawalan Elektrik
Applied Science	Pembinaan Domestik
Asas Kemahiran Pelancongan	Pemesinan Berkomputer
Asas Pemerosesan Maklumat	Pemprosesan Hasil Pertanian
Asuhan & Pendidikan Awal Kanak-Kanak	Pemprosesan Makanan
Asuhan Kanak-Kanak	Pendawaian Domestik
Automotif Elektrik & Diesel	Pendidikan Islam (Aliran Kemahiran)
Automotif kenderaan	Pendidikan Seni / Pendidikan Seni Visual
Bahan Binaan	Pengajian Keusahawanan
Bahasa Inggeris (Aliran Kemahiran)	Pengajian Perkembangan Kanak-Kanak
Bakeri	Pengaturcaraan
Binaan Bangunan	Pengeluaran Tanaman
Dandanan Rambut	Pengeluaran Ternakan
Fesyen	Pengurusan Ladang
Gerontologi Asas dan Perkhidmatan Geriatrik	Pengurusan Perniagaan / Pengurusan Teknologi Pejabat
Hiasan Dalaman Asas	Penjagaan Muka & Dandanan Rambut
Hortikultur Hiasan & Landskap	Penyajian Makanan dan Minuman
Hortikultur Hiasan dan Landskap	Penyamanan Udara
Katering	Penyediaan & Perkhidmatan Makanan
Katering & Penyajian	Penyediaan Masakan Barat & Timur
Kejenteraan Ladang	Penyejukan
Kejenteraan Pertanian	Perakaunan Perniagaan
Kerja Kayu & Bata	Perkembangan & Perkhidmatan Kanak-kanak
Kerja Kimpalan	Perkhidmatan Awal Kanak-Kanak
Kerja Menggegas & Memesin	Perniagaan & Keusahawanan
Kerja Paip Domestik	Persolekan
Kerja Penyejukan & Penyamanan Udara	Persolekan & Mendandan Rambut
Kimpalan Arka	Pola Pakaian
Kimpalan Arka & Gas	Prinsip Elektrik dan Elektronik
Kimpalan gas	Rekaan & Jahitan Pakaian
Komunikasi Visual	Rekaan Fesyen & Membuat Pakaian
Landskap & Nurseri	Rekabentuk
Lukisan Geometri & Automotif	Roti dan Masakan Yis
Lukisan Geometri & Binaan Bangunan	Sains Gunaan
Lukisan Geometri & Elektrik	Seni Kecantikan
Lukisan Geometri & Elektronik	Seni Reka Tanda
Lukisan Geometri & Fabrikasi Logam	Tanaman Makanan
Lukisan Geometri & Mesin	Teknologi Automotif
Lukisan Geometri & Penyamanan Udara	Teknologi Bakeri & Konfeksioneri

SENARAI KUMPULAN MATA PELAJARAN SPM TAHUN 2019 & TAHUN SEBELUMNYA

VOKASIONAL	
Matematik (Aliran Kemahiran)	Teknologi Bengkel Mesin
Membuat Pakaian	Teknologi Binaan
Membuat Perabot	Teknologi Binaan Bangunan
Membuat Roti & Patisserie	Teknologi Elektrik
Mengasuh & Membimbing Kanak-kanak	Teknologi Elektronik
Mengetuk & Mengecat Kereta	Teknologi Katering
Menservis & Membaiki Kenderaan	Teknologi Kimpalan & Fabrikasi Logam
Menservis & Membaiki Televisyen	Teknologi Pejabat Perniagaan
Menservis Automobil	Teknologi Penyejukan & Penyamanan Udara
Menservis Motosikal	Teknologi Rekaan, Fesyen & Membuat Pakaian
Teknologi Seni Kecantikan	

POLITEKNIK SULTAN HAJI AHMAD SHAH
KEMENTERIAN PENGAJIAN TINGGI
Semambu
25350 Kuantan
PAHANG

Tel : 09-5655300
Faks : 09-5663104
Laman web : www.polisas.edu.my
Facebook:politeknik.edu

Ruj Kami : POLISAS/HEP/001/1 (2)
Tarikh: 20 Jun 2020

Nur Afifah Nabilah Bt Mohd Rusmi (990101-13-1192)
56A, Kg. Losong Atap Zing,
202000 Kuala Terengganu,
Terengganu

Tuan,

STATUS TAWARAN KEMASUKAN KE POLITEKNIK SESI JUN 2020

Adalah saya dengan hormatnya merujuk kepada perkara di atas.

2. Dimaklumkan bahawa Borang Jawapan Tawaran (BJT-JPP) dan dokumen berkaitan tuan telah diterima pada _____ dan melebihi tarikh yang ditetapkan iaitu 14 hari dari tarikh surat tawaran yang dikeluarkan. Sehubungan itu, dukacita dimaklumkan bahawa tawaran kemasukan ke Politeknik KPT adalah terbatal.

3. Walau bagaimanapun, pihak kami mengkategorikan tawaran kemasukan tuan dalam status **'Simpan Dalam Perhatian (KIV)'** kerana Borang Jawapan Tawaran tuan diterima selepas tempoh 14 hari dari tarikh surat tawaran dikeluarkan.

4. Pihak kami akan menghubungi tuan sekiranya masih terdapat kekosongan tempat pengajian, selepas hari pendaftaran. Jika tiada kekosongan, tawaran tersebut kekal terbatal.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

(RAMLEE BIN JANTAN)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Haji Ahmad Shah

CONTOH

POLITEKNIK SULTAN AZLAN SHAH
KEMENTERIAN PENGAJIAN TINGGI
Behrang Stesen
35950 Behrang
PERAK, MALAYSIA

Tel : 05-454 4431
Faks : 05-454 4993
Laman web : www.psas.edu.my
Facebook:politeknik.edu

Ruj.Kami: PSAS/HEP/(PD)04/052(40)
Tarikh: 03 November 2019

SEMUA PELAJAR BAHARU
POLITEKNIK SULTAN AZLAN SHAH

Saudara/saudari ,

MAKLUMAN PENDAFTARAN PELAJAR BAHARU SESI DISEMBER 2019.

Dengan segala hormatnya perkara tersebut di atas adalah dirujuk.

2. Politeknik Sultan Azlan Shah (PSAS) mengucapkan tahniah kepada saudara/saudari kerana telah berjaya menyambung pengajian di institusi ini. Terima kasih juga diucapkan kerana telah memilih Politeknik Sultan Azlan Shah sebagai institusi pilihan untuk menyambung pengajian saudara/saudari.

3. Untuk makluman saudara/saudari, maklumat pendaftaran bagi adalah seperti berikut:

Tarikh	**:**	**24 November 2019 (Ahad)**
Masa	**:**	**8.30 pagi – 12.30 tengah hari**
Tempat	**:**	**Dewan Serbaguna, PSAS**

4. Bersama-sama ini dilampirkan sebahagian maklumat berkaitan pendaftaran pelajar baru. Saudara/saudari perlu mendapatkan maklumat lanjut pendaftaran di laman web PSAS, www.psas.edu.my . Bagi melancarkan lagi urusan pada hari pendaftaran, saudara/saudari dimohon melengkapkan semua butiran yang diperlukan.

5. Sehubungan dengan itu, saudara/saudari dikehendaki membuat pendaftaran secara *online* mulai 10 November 2019 selepas membuat pembayaran yuran sepertimana yang ditetapkan. Sebarang pertanyaan, sila hubungi Puan Rahimah bt Ibrahim (Pegawai HEP) di talian 05-4544431 (samb. 4003).

Sekian terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MARZUKI BIN SEPIAAIL)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Azlan Shah

CONTOH

JABATAN PEMBANGUNAN KEMAHIRAN
KEMENTERIAN SUMBER MANUSIA

SIJIL KEMAHIRAN MALAYSIA

BANDHARI RESTORAN INDIA

TAHAP TIGA

Dengan ini adalah disahkan bahawa

TAMILARASSI A/P RAMAN

950910-14-5778

telah mencapai tahap kompetensi yang ditetapkan dalam Standard Kemahiran Pekerjaan Kebangsaan (SKPK)

PENILAIAN TELAH DILAKSANAKAN DI PUSAT BERTAULIAH
ASEAN CULINARY ACADEMY
SELANGOR DARUL EHSAN

JABATAN PEMBANGUNAN KEMAHIRAN

Ketua Pengarah

Ketua Setiausaha

HT-030-3-L-01914-082013
14/11/2013

A 631733

JABATAN PEMBANGUNAN KEMAHIRAN
DIPLOMA KEMAHIRAN MALAYSIA
SENI KULINARI
Dengan ini disahkan bahawa
NURHAFIZA BINTI ISNO
910430-15-5060
telah mencapai tahap prestasi yang ditetapkan
PENGAJIAN TELAH DILAKSANAKAN DI PUSAT BERTAULIAH
IKIP ADVANCED SKILLS CENTRE
PAHANG DARUL MAKMUR
Ketua Pengarah
Ketua Setiausaha
CONTOH
CONTOH

JABATAN PEMBANGUNAN KEMAHIRAN

DIPLOMA LANJUTAN KEMAHIRAN MALAYSIA

TEKNOLOGI TELEKOMUNIKASI
(OPERASI AKSES RANGKAIAN PELANGGAN)

Dengan ini disahkan bahawa

ROSYILA BINTI ROSLI

891017035122

telah mencapai tahap prestasi yang ditetapkan

PENILAIAN TELAH DILAKSANAKAN DI PUSAT BERTAULIAH
PUSAT LATIHAN PENGAJAR & KEMAHIRAN LANJUTAN (CIAST)
SELANGOR DARUL EHSAN

Ketua Setiausaha

CONTOH

JABATAN PEMBANGUNAN KEMAHIRAN
KEMENTERIAN SUMBER MANUSIA

SIJIL KEMAHIRAN MALAYSIA

TERAPI SPA

TAHAP TIGA

Dengan ini adalah disahkan bahawa

LIEW YOKE CHING

750523-14-5329

telah mencapai tahap kompetensi yang ditetapkan dalam Standard Kemahiran Pekerjaan Kebangsaan (SKPK)

PENILAIAN TELAH DILAKSANAKAN MELALUI KAEDAH
PENGIKTIRAFAN PENCAPAIAN TERDAHULU (PPT)

CONTOH

CONTOH

MP-061-3:2012-T01001-01/14-DN0258A
27/02/2014

Ketua Pengar *Ketua Setiausaha*

A 672893

JABATAN PEMBANGUNAN KEMAHIRAN
DIPLOMA KEMAHIRAN MALAYSIA
LIDANG TERUKUR (BUMINUM)
Dengan ini disahkan bahawa
ROY ROGER BIGILLAH
telah mencapai tahap prestasi yang diterapkan
CONTOH
CONTOH

JABATAN PEMBANGUNAN KEMAHIRAN

DIPLOMA LANJUTAN KEMAHIRAN MALAYSIA

PENGURUSAN LATIHAN VOKASIONAL

Dengan ini disahkan bahawa

MUHAMMAD BIN YUSOF

760221-11-5041

telah mencapai tahap prestasi yang ditetapkan

PENILAIAN TELAH DILAKSANAKAN MELALUI SAEDAH PENGIKTIRAFAN KHAS PENGIKTIRAFAN PENCAPAIAN TERDAHULU (PPT)

Ketua Setiausaha

CONTOH

POLITEKNIK SULTAN HAJI AHMAD SHAH
KEMENTERIAN PENGAJIAN TINGGI
Semambu
25350 Kuantan
PAHANG

Tel : 09-5655300
Faks : 09-5663104
Laman web : www.polisas.edu.my
Facebook:politeknik.edu

Ruj Kami: POLISAS/HEP/04/13 (16)
Tarikh: 3 Januari 2020

Pengarah
Bahagian Ambilan dan Pembangunan Pelajar
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Galeria PjH, Aras 6, Jalan P4W,
Persiaran Perdana, Presint 4,
62100 Putrajaya

Tuan,

MAKLUMAN PERCANGGAHAN MAKLUMAT PELAJAR POLITEKNIK SULTAN HAJI AHMAD SHAH

Adalah saya dengan hormatnya merujuk kepada perkara di atas.

2. Adalah dimaklumkan bahawa pihak kami telah menemui percanggahan maklumat seperti berikut:

Pelajar	**Maklumat dalam e-*Borang***	**Maklumat dalam salinan sijil / dokumen yang dikemukakan**
Mohd Hafiz bin Abu Chek (000406-12-8777) 03DPP13F2032	Warganegara	Pemastautin Tetap

3. Bersama ini disertakan salinan dokumen berkaitan untuk makluman tuan.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(RAMLEE BIN JANTAN)
Ketua Jabatan Hal Ehwal Pelajar
b.p Pengarah
Politeknik Sultan Haji Ahmad Shah

CONTOH

POLITEKNIK SULTAN HAJI AHMAD SHAH
KEMENTERIAN PENGAJIAN TINGGI
Semambu
25350 Kuantan
PAHANG

Tel : 09-5655300
Faks : 09-5663104
Laman web : www.polisas.edu.my
Facebook:politeknik.edu

Ruj Kami: POLISAS/HEP/04/13/ (16)
Tarikh: 4 Julai 2020

Mohd Hafiz Bin Abu Chek (000406-12-8777)
No 5, Jalan 4/5,
Taman Seri Pelangi
60500 Sungai Besi
Kuala Lumpur

Tuan,

PERCANGGAHAN MAKLUMAT DI DALAM PERMOHONAN SESI JUN 2020

Adalah saya dengan hormatnya merujuk kepada perkara di atas.

2. Jawatankuasa Pengambilan Pelajar Ke Politeknik Kementerian Pengajian Tinggi telah menemui percanggahan maklumat seperti berikut:

Perkara	Maklumat dalam e-Borang	Maklumat dalam salinan sijil SPM yang dikemukakan
Lukisan Kejuruteraan	4	7

3. Sehubungan itu, tuan dikehendaki mengesahkan perkara ini dengan menghubungi pejabat Jabatan Hal Ehwal Pelajar ini di talian 09-565 5300 ext. 111 dengan segera.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

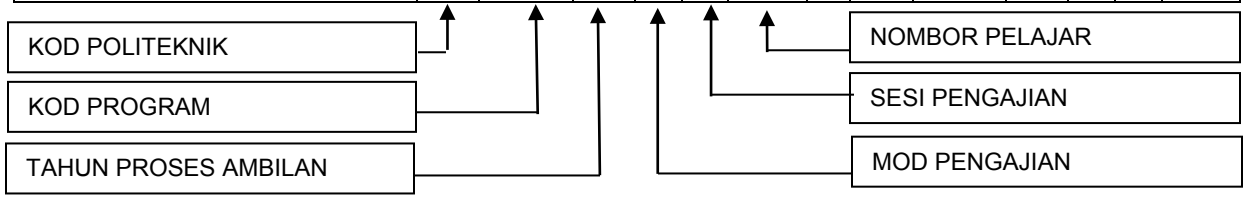
Saya yang menjalankan amanah,

(RAMLEE BIN JANTAN)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Haji Ahmad Shah

CONTOH

FORMAT NOMBOR PENDAFTARAN PELAJAR

PROGRAM	SESI JUN						SESI DISEMBER					
PROGRAM PRA DIPLOMA BAGI LULUSAN SPM	02	IPP	20	F	1	001	02	IPP	20	F	2	001
• PROGRAM DIPLOMA BAGI LULUSAN SPM • PROGRAM DIPLOMA BAGI LULUSAN SIJIL POLITEKNIK • PROGRAM DIPLOMA BAGI LULUSAN SIJIL KOLEJ KOMUNITI • PROGRAM DIPLOMA BAGI LULUSAN MATRIKULASI • PROGRAM DIPLOMA BAGI LULUSAN SIJIL KEJURUTERAAN PERTANIAN PERDA-TECH • PROGRAM DIPLOMA BAGI LULUSAN SIJIL INSTITUT KEMAHIRAN MARA • PROGRAM DIPLOMA BAGI LULUSAN SIJIL KEMAHIRAN MALAYSIA	02	DHM	20	F	1	001	02	DHM	20	F	2	001
PROGRAM SIJIL KEMAHIRAN (BERKEPERLUAN KHAS)	07	KHK	20	F	1	001	07	KHK	20	F	2	001
PROGRAM DIPLOMA LANJUTAN BAGI LULUSAN DIPLOMA POLITEKNIK	01	ANS	20	F	1	001	01	ANS	20	F	2	001
PROGRAM SARJANA MUDA BAGI LULUSAN DIPLOMA/ DIPLOMA LANJUTAN POLITEKNIK	01	BMS	20	F	1	001	01	BMS	20	F	2	001



Nota:

1. Kod Politeknik – Kod yang diguna pakai merujuk kepada penubuhan sesebuah politeknik.

   01 = Politeknik Ungku Omar, Perak
   02 = Politeknik Sultan Haji Ahmad Shah, Pahang
   03 = Politeknik Sultan Abdul Halim Mu'adzam Shah, Kedah
   04 = Politeknik Kota Bharu, Kelantan
   05 = Politeknik Kuching, Sarawak
   06 = Politeknik Port Dickson, Negeri Sembilan
   07 = Politeknik Kota Kinabalu, Sabah
   08 = Politeknik Sultan Salahuddin Abdul Aziz Shah, Selangor
   09 = Politeknik Ibrahim Sultan, Johor
   10 = Politeknik Seberang Perai, Pulau Pinang
   11 = Politeknik Melaka, Melaka
   12 = Politeknik Kuala Terengganu, Terengganu
   13 = Politeknik Sultan Mizan Zainal Abidin, Terengganu
   14 = Politeknik Merlimau, Melaka
   15 = Politeknik Sultan Azlan Shah, Perak
   16 = Politeknik Tuanku Sultanah Bahiyah, Kedah
   17 = Politeknik Sultan Idris Shah, Selangor
   18 = Politeknik Tuanku Syed Sirajuddin, Perlis
   19 = Politeknik Muadzam Shah, Pahang
   20 = Politeknik Mukah, Sarawak
   21 = Politeknik Balik Pulau, Pulau Pinang
   22 = Politeknik Jeli, Kelantan
   23 = Politeknik Nilai, Negeri Sembilan
   24 = Politeknik Banting,Selangor
   25 = Politeknik Mersing, Johor
   26 = Politeknik Hulu Terengganu, Terengganu
   27 = Politeknik Sandakan, Sabah
   28 = Politeknik METrO Kuala Lumpur,Setiawangsa
   29 = Politeknik METrO Kuantan, Pahang
   30 = Politeknik METrO Johor Bahru
   31 = Politeknik METrO Betong, Sarawak
   32 = Politeknik METrO Tasek Gelugor, Pulau Pinang
   33 = Politeknik Tun Syed Nasir Syed Ismail, Johor
   34 = Politeknik Besut, Terengganu
   35 = Politeknik Bagan Datuk, Perak
   36 = Politeknik Tawau Sabah

2. Kod Program- Kod sesuatu program yang diikuti oleh pelajar.
   (Contoh: DHM – Diploma Pengurusan Hotel)

3. Tahun Proses Ambilan – Tahun bagi permohonan dibuka dan diproses.
   (Proses permohonan dibuat sebanyak dua kali setahun iaitu pada pertengahan tahun dan hujung tahun)

4. Jenis - jenis pengajian yang diikuti oleh seseorang pelajar
   F = Sepenuh Masa S = Sambilan

POLITEKNIK
KEMENTERIAN PENGAJIAN TINGGI

BORANG SOAL SELIDIK
PENDAFTARAN PELAJAR BAHARU
SESI : _____

Tujuan soal selidik ini adalah untuk mendapatkan maklum balas berhubung keseluruhan proses pendaftaran pelajar yang telah dijalankan pada …….. Maklumat ini adalah penting bagi pihak politeknik untuk mengenalpasti ruang penambahbaikan dalam memenuhi kepuasan pelanggan. Sila beri jawapan anda secara ikhlas.

ARAHAN : Sila lengkapkan maklumat atau tanda (√) pada petak yang berkenaan.

A MAKLUMAT AM

1. **Program** : ……..

2. **Peringkat Pengajian** : ☐ Sijil Khas ☐ Diploma ☐ Diploma Lanjutan

   ☐ Program Sambilan

3. **Waktu** :

3.1 Pendaftaran Pengajian

a. Tiba di Politeknik : ☐ (cth: 9.00 pagi)

b. Tempoh urusan (tandakan √ diruang yang berkenaan):

Jenis Urusan	< 5 minit	5 – 10 minit	11-15 minit	16 – 20 minit	> 20 minit
i) Kaunter penerimaan Fail Peribadi Pelajar	☐	☐	☐	☐	☐
ii) Kaunter Semakan Dokumen	☐	☐	☐	☐	☐
iii) Kaunter bayaran dan pendaftaran	☐	☐	☐	☐	☐
iv) Pendaftaran Kamsis (jika ditawarkan)	☐	☐	☐	☐	☐

4. Berapa ramai ahli keluarga yang datang bersama anda?

   ☐ orang

5. Adakah petunjuk arah dan kawalan lalu lintas sempurna dan lancar.

   ☐ Ya ☐ Tidak (nyatakan : …….. ……..)

6 Apakah jenis kenderaan yang anda gunakan semasa hadir ke politeknik?

☐ Kenderaan sendiri ☐ Kenderaan Awam

Nota : Jika kenderaan awam, terus ke no. 8.

7 Adakah ruang tempat letak kenderaan mencukupi dan sesuai? (Jika berkaitan)

☐ Ya ☐ Tidak (nyatakan : ……)

8 Perlukah perkhidmatan pengangkutan daripada tempat pendaftaran ke Kamsis disediakan?.

☐ Ya ☐ Tidak

CONTOH

B. PROSES MEMOHON

1. Adakah anda mendapat maklumat melalui iklan diakhbar? Jika tidak terus ke soalan 4. ☐ Ya ☐ Tidak.

		Amat tidak Memuaskan				Amat Memuaskan
2.	Iklan yang disiarkan mudah difahami	1	2	3	4	5
3.	Panduan di dalam iklan permohonan kemasukan	1	2	3	4	5

4. Adakah anda mengisi e-borang sendiri? Jika tidak terus ke soalan Bahagian C. ☐ Ya ☐ Tidak.

		Amat tidak Memuaskan				Amat Memuaskan
5.	Permohonan secara *On-line* di Laman Web					
	a. Arahan dan panduan di dalam laman web	1	2	3	4	5
	b. Proses memasukkan butiran permohonan kedalam e-borang	1	2	3	4	5
	c. Maklumbalas tentang permohonan yang dihantar	1	2	3	4	5

C. PROSES PENDAFTARAN

		Amat tidak Memuaskan				Amat Memuaskan
1.	Arahan di dalam Buku Panduan Pendaftaran Kemasukan ke Politeknik KPT	1	2	3	4	5
2.	Borang–borang Pendaftaran mudah difahami dan dilengkapkan.	1	2	3	4	5
3.	Proses menyemak dokumen di Kaunter Semakan.	1	2	3	4	5
4.	Penggunaan sistem nombor giliran untuk Pendaftaran (jika ada).	1	2	3	4	5
5.	Urusan pembayaran yuran pengajian dan bayaran pendaftaran melalui Bank.	1	2	3	4	5
6.	Urusan pemberian kad pelajar di kaunter (jika ada).	1	2	3	4	5
7.	Tempat duduk yang disediakan semasa menunggu proses pendaftaran.	1	2	3	4	5
8.	Layanan oleh Urusetia Pendaftaran.	1	2	3	4	5
9.	Proses Pendaftaran Kamsis (jika berkenaan).	1	2	3	4	5
10.	Keseluruhan Proses Pendaftaran Pelajar adalah terkawal dan berjalan lancar.	1	2	3	4	5

D. ULASAN DAN CADANGAN (jika ada)

_____

_____

_____

_____

Terima Kasih Atas Kerjasama Anda.

Nota:
Indikator : ***1 – Amat Tidak Memuaskan 2 – Tidak Memuaskan 3 – Sederhana 4 – Memuaskan 5 – Amat Memuaskan***

CONTOH

FORMAT PENULISAN LAPORAN SOAL SELIDIK

A. PENGENALAN

- Sesi pengajian.
- Tujuan kajian.

B. METODOLOGI

- Penerangan dan kaedah penentuan sampel.

C. ALAT KAJIAN

- Penerangan tentang item kajian, iaitu maklumat am dan proses pendaftaran.

D. DAPATAN KAJIAN (Maklumat Am dan Proses Pendaftaran)

- Julat masa yang ramai hadir.
- Tempoh proses pendaftaran : berada dalam dewan dan berurusan di kaunter.
- Jumlah pengiring semasa datang mendaftar.
- Petunjuk arah dan kawalan lalulintas.
- Maklumbalas daripada borang soal selidik proses pendaftaran.

E. RUMUSAN

- Rumusan keseluruhan hasil kajian/soal selidik.

F. CADANGAN PENAMBAHBAIKAN

- Cadangan penambahbaikan daripada maklumat kajian/soal selidik.

CONTOH

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA IBRAHIM SULTAN

BORANG LEWAT LAPOR DIRI PELAJAR SENIOR

MAKLUMAT PELAJAR			
Nama			
No. K/P		Semester	
No. Pendaftaran		Kelas	
Program		Alamat Tetap	
Jabatan			
No. Telefon			

MAKLUMAT LEWAT LAPOR DIRI			
Tarikh Diminta Lapor Diri (Asal)			
Tarikh Lapor Diri Sebenar			
Nyatakan Sebab / Alasan Lewat lapor Diri ***(Sila sertakan surat tunjuk sebab kepada Pengarah)***			
Tarikh		Tandatangan Pemohon	

ULASAN / KENYATAAN PEGAWAI HAL EHWAL PELAJAR (PENGAMBILAN & DATA)
(Sila sertakan lampiran sekiranya ruang ini tidak mencukupi)

☐ **Surat tunjuk sebab lewat lapor diri** ☐ **Slip bayaran yuran pengajian** ☐ **Slip bayaran pelbagai** ☐ **Slip bayaran yuran asrama (jika berkaitan)** ☐ **Slip keputusan peperiksaan**		**ULASAN**	
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

ULASAN / KENYATAAN KETUA JABATAN HAL EHWAL PELAJAR ***(Sila sertakan lampiran sekiranya ruang ini tidak mencukupi)***			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN / KENYATAAN KETUA JABATAN AKADEMIK / TIMBALAN PENGARAH POLITEKNIK / PENGARAH POLITEKNIK ***(Sila sertakan lampiran sekiranya ruang ini tidak mencukupi)***			
Kebenaran Lapor Diri Pelajar: **DILULUSKAN / TIDAK DILULUSKAN ***			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

UNTUK KEGUNAAN PEJABAT
(Diisi oleh PHEP Jabatan)
Pelajar Lapor Diri Pada: _____
Key-In dalam sistem: _____
*Potong yang mana tidak berkaitan
*Borang hendaklah disimpan dalam fail P.A

…….
(Cop & Tandatangan PHEP Jabatan)
Tarikh:

POLITEKNIK METrO KUALA LUMPUR
KEMENTERIAN PENGAJIAN TINGGI
2-14, Jalan Setiawangsa 10
Taman Setiawangsa,
54200, KUALA LUMPUR
MALAYSIA

Tel : 03 - 4251 8000
Faks : 03 - 4251 7979
LamanWeb :www.pmkl.edu.my
Facebook : politeknik.edu

Ruj.Kami: PMKL/HEP/01/06/205(27)
Tarikh: 6 Disember 2019

NO.PENDAFTARAN:28DRM13F1001
NABILLAH BINTI JAMIL

47, JALAN MELUR 11, TAMAN MELUR,
68000 AMPANG,
SELANGOR

Tuan,

SURAT AMARAN TIDAK MELAPOR DIRI SEBAGAI PELAJAR BAGI PENGAJIAN SESI DISEMBER 2019

Saya dengan segala hormatnya ingin merujuk kepada perkara diatas.

2. Menurut rekod kami, anda telah didapati tidak melapor diri sebagai pelajar Politeknik METrO Kuala Lumpur bagi pengajian Sesi Disember 2019 pada tarikh yang telah ditetapkan iaitu pada 29 November 2019.

3. Sehubungan itu, anda diberi tempoh satu (1) minggu daripada tarikh surat ini untuk **MELAPOR DIRI DENGAN SEGERA** dengan membawa bersama surat tunjuk sebab Unit Hal Ehwal Pelajar. Anda diingatkan sekiranya anda gagal berbuat demikian tanpa mengemukakan sebarang alasan yang boleh diterima, tindakan boleh di ambil mengikut Akta 174 kerana telah mengabaikan tanggungjawab anda untuk hadir ke kuliah.

Sekian terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

.....
(MOHD RIZUAN BIN MAT RAMLI)
Ketua Jabatan (Akademik)
b/p Pengarah
Politeknik METrO Kuala Lumpur

s.k.
1. Pengarah
2. Unit HEP
3. Ibu bapa/ Penjaga Pelajar
4. Penasihat Akademik

CONTOH

POLITEKNIK TUN SYED NASIR SYED ISMAIL
KEMENTERIAN PENGAJIAN TINGGI
Hub Pendidikan Pagoh,
KM 1, Jalan Panchor,
84600 Pagoh,
JOHOR

Tel: 09-565 5467
Fax: 09-566 3104
Facebook: politeknik.edu

Ruj. Kami: PPG/HEP/17/02/02 (28)
Tarikh: 1 Mei 2017

MOHD HAIDAR BIN HAFIZ (33DPE17F2001)
KAMPUNG PULAU RAJA
PALEBANG
16040 TUMPAT
KELANTAN

Tuan,

KEPUTUSAN RAYUAN BELAJAR SEMULA

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan bertarikh 19 April 2017 adalah berkaitan.

2. Dimaklumkan bahawa tuan telah dibenarkan menyambung semula pengajian di Politeknik Tun Syed Nasir Syed Ismail mulai sesi Jun 2017.

3. Bersama ini dilampirkan maklumat berkaitan tarikh dan masa pendaftaran berserta dengan bayaran yang perlu dijelaskan pada hari tersebut.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MUSTAFA KAMAL BIN SURIF)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Tun Syed Nasir Syed Ismail

CONTOH

(Nama dan alamat pelajar)

_____

_____

_____

Kepada:

Pengarah
Politeknik Sultan Idris Shah
Sungai Lang,
45100 Sungai Air Tawar,
Selangor

11 Julai 2019

Tuan,

PERMOHONAN TUNTUTAN BAYARAN BALIK YURAN PENGAJIAN DAN ASRAMA SESI JUN 2019.

Saya, (Nama Pelajar), (No Kad Pengenalan), (No. Pendaftaran Pelajar) memohon jasa baik pihak tuan untuk mengembalikan semula yuran pengajian dan/atau asrama yang telah dibuat berjumlah **RM260.00**.

2. Dengan ini, saya mengaku bahawa jumlah yang dituntut adalah benar dan pihak tuan boleh membatalkan permohonan tuntutan sekiranya maklumat dokumen yang disertakan adalah palsu.

3. Bersama-sama ini saya sertakan dokumen-dokumen yang diperlukan adalah seperti berikut:
   a. Salinan MyKad yang telah disahkan.
   b. Salinan Buku Bank yang telah disahkan.
   c. Slip bayaran BIMB yang asal.

4. Kerjasama pihak tuan amat dihargai dan didahului dengan ucapan terima kasih.

Sekian,terima kasih.

Yang Benar;

(**Nama Pelajar)**
NoTelefon pelajar
No Pendaftaran pelajar

CONTOH

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA MUKAH

BORANG PERMOHONAN PERTUKARAN TEMPAT PENGAJIAN

MAKLUMAT PELAJAR			
Nama			
No.K/P		Semester	
No. Pendaftaran		No. Bilik Asrama*	
Program		Alamat Tetap:	
Jabatan			
No. Telefon			

MAKLUMAT PERTUKARAN TEMPAT PENGAJIAN			
Politeknik yang dipohon			
Program yang dipohon (jika berkaitan)			
Nyatakan sebab/alasan (Sila sertakan laporan kesihatan, surat atau dokumen sokongan)			
Tarikh		Tandatangan Pemohon	

ULASAN & KENYATAAN PENASIHAT AKADEMIK **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

ULASAN/KENYATAAN PEGAWAI PSIKOLOGI **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

ULASAN/KENYATAAN PEGAWAI PERHUBUNGAN DAN LATIHAN INDUSTRI **(Bagi Pelajar Sedang Menjalani Latihan Industri)** **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi))**			
Tarikh		Tandatangan & Cop Nama Jawatan	
ULASAN/KENYATAAN PUSTAKAWAN **(Kenyataan berkaitan pinjaman buku dan media perpustakaan)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN/KENYATAAN KETUA JABATAN (**sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh :		Tandatangan & Cop Nama dan Jawatan	

ULASAN/KENYATAAN KETUA JABATAN HAL EHWAL PELAJAR (**sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Statistik	Disiplin / Tataertib / Kes Polis	Bantuan Kewangan	Ulasan & Kenyataan
Politeknik Asal : Politeknik Yang Dipohon :			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
SOKONGAN PENGARAH POLITEKNIK/ TIMBALAN PENGARAH POLITEKNIK Kenyataan Pengarah Politeknik/ Timbalan Pengarah Politeknik (jika ada)			
Permohonan pertukaran Politeknik DISOKONG / TIDAK DISOKONG **			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

* *sekiranya tinggal di kamsis semasa memohon.*
** *potong yang mana tidak berkaitan.*

POLITEKNIK SULTAN IDRIS SHAH
KEMENTERIAN PENGAJIAN TINGGI
Sungai Lang,
45100 Sungai Air Tawar,
SELANGOR, MALAYSIA

POLITEKNIK MALAYSIA
SULTAN IDRIS SHAH
Tel : 03-3280 6200
Faks : 03-3280 6400
Laman web :www.psis.edu.my
Facebook : politeknik.edu

Rujukan kami: PSIS/HEP/001/5Jld.7 (90)
Tarikh: 04 April 2019

Mohd Asyraf bin Harun (17DHK12F1090)
Lot 18, Kampung Alor Darat,
45100, Sungai Air Tawar
Selangor

Tuan,

KEPUTUSAN PERMOHONAN PERTUKARAN TEMPAT PENGAJIAN

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat dari Bahagian Ambilan dan Pembangunan Pelajar KPT JPP (O).604-1/3/1 (37) bertarikh 27 Mac 2019 adalah berkaitan.

2. Sukacita dimaklumkan bahawa permohonan tuan untuk bertukar ke **Politeknik Ibrahim Sultan (PIS) telah diluluskan dan berkuatkuasa mulai Sesi Jun 2019.**

3. Tuan diminta menghubungi **Jabatan Hal Ehwal Pelajar** politeknik berkenaan dengan kadar segera untuk mendapatkan maklumat lapor diri.

4. Tuan juga diminta membawa bersama slip keputusan peperiksaan setiap semester yang telah disahkan oleh Pegawai Peperiksaan politeknik asal.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(ABD. RASHID BIN MOHD ALI)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Idris Shah

s.k: Pengarah Politeknik Ibrahim Sultan (PIS)
Ketua Jabatan Pelancongan dan Hospitaliti
Pegawai Perhubungan dan Latihan Industri
Pegawai Peperiksaan
Pustakawan
Pegawai Sukan dan Kokurikulum
Fail Pelajar

CONTOH

POLITEKNIK SULTAN HAJI AHMAD SHAH
KEMENTERIAN PENGAJIAN TINGGI
Semambu,
25350 Kuantan
PAHANG, MALAYSIA

POLITEKNIK MALAYSIA
SULTAN HAJI AHMAD SHAH

Tel : 09-5655300
Faks : 09-566 3104
Laman web : www.polisas.edu.my
Facebook : politeknik.edu

Ruj. Kami: POLISAS/HHP/12/01/ Jld.2 (16*)*
Tarikh: 03 Julai 2019

Pengarah
Politeknik Melaka
No. 2, Jalan PPM 10,
Plaza Pandan Malim,
75250 MELAKA

(u.p: Pegawai Hal Ehwal Pelajar)

Tuan,

FAIL PELAJAR YANG BERTUKAR KE POLITEKNIK MELAKA SESI JUN 2019

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan PMK/HEP/001/5 Jld 2(40) bertarikh 24 Jun 2019 adalah berkaitan.

2. Bersama ini disertakan fail pelajar tersebut dibawah untuk tindakan tuan selanjutnya.

Bil	No.KP	Nama	Program
1	940924035750	Wan Nurfarhana bt.Wan Masri	DKA
2	941220035772	Nurul Farahanis bt. Mohd. Aminudin	DKM

3. Sila tuan akui penerimaanya.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(**RAMLEE BIN JANTAN**)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Haji Ahmad Shah

CONTOH

POLITEKNIK SULTAN HAJI AHMAD SHAH
KEMENTERIAN PENGAJIAN TINGGI
Semambu,
25350 Kuantan
PAHANG, MALAYSIA

POLITEKNIK MALAYSIA
SULTAN HAJI AHMAD SHAH

Tel : 09-5655300
Faks : 09-566 3104
Laman web : www.polisas.edu.my
Facebook : politeknik.edu

Ruj. Kami: POLISAS/HHP/001/5 Jld.24 (90)
Tarikh: 24 Julai 2019

Pengarah
Politeknik Sultan Mizan Zainal Abidin
KM.08, Jalan Paka,
23000 Dungun.
Terengganu

(u.p: Pegawai Hal Ehwal Pelajar)

Tuan,

PENGESAHAN LAPOR DIRI PELAJAR YANG BERTUKAR TEMPAT PENGAJIAN SESI JUN 2019

Adalah saya dengan hormatnya merujuk kepada perkara diatas.

2. Untuk makluman tuan pelajar dari politeknik tuan telah mendaftar di politeknik ini. Pelajar berkaitan adalah seperti berikut;

BIL	NO.KP	NAMA	PROGRAM
1	941002035517	Muhd.Aimuddin b. Othman	DKM
2	940623295035	Wan Annwarul Imran b. Wan Fasddi	DEM
3	940911035259	Muhammad Affandie b. Abdullah	DKB

3. Sehubungan itu, mohon kerjasama tuan untuk menghantar fail pelajar berkenaan.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(RAMLEE BIN JANTAN)
Ketua Jabatan Hal Ehwal Pelajar
b.p.Pengarah
Politeknik Sultan Haji Ahmad Shah

CONTOH

POLITEKNIK KOTA KINABALU
KEMENTERIAN PENGAJIAN TINGGI
Jalan Politeknik,
88450 Kota Kinabalu,
SABAH

POLITEKNIK MALAYSIA KOTA KINABALU
Tel : 088-499 980
Faks : 088-499 960
Laman web : www.polikk.edu.my
Facebook : politeknik.edu

Ruj. Kami: PKK/HEP/04/13/ Jld.3 (16)
Tarikh: 3 Jun 2019

Pengarah
Politeknik Tuanku Sultanah Bahiyah
Kulim Hi-Tech Park
09000 Kulim

(u.p: Pegawai Hal Ehwal Pelajar)

Tuan,

PENGESAHAN PENERIMAAN FAIL PELAJAR

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan PTSB/HEP/PEL203-POLI-KJLD.2 (23) bertarikh 26 Mei 2019 adalah berkaitan.

2. Adalah dimaklumkan bahawa fail pelajar seperti di bawah telah selamat diterima.

BIL	NO. KP	NAMA	KURSUS
1	940516035392	NIK KHAIRUL AZIRA BT.NIK KHAIRUALDDIN	DAT
2	941019045056	NURUL AKMA BT ALIAS	DEM
3	941211035972	NORLIANA BT ABDULLAH	DPR

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JALANI BIN SAMIDI)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Kota Kinabalu.

CONTOH

POLITEKNIK TUANKU SYED SIRAJUDDIN
KEMENTERIAN PENGAJIAN TINGGI
Pauh Putra,
02600 Arau
PERLIS, MALAYSIA

POLITEKNIK MALAYSIA
TUANKU SYED SIRAJUDDIN

Tel : 04-988 6200
Faks : 04-988 6300
Laman web : www.ptss.edu.my
Facebook : politeknik.edu

Ruj. Kami: PTSS/HEP/17/02/02/Jld.12 (28)
Tarikh: 28 Julai 2019

SUZANA BT. MOHD. NORPIAH (06DKA10F1005)
J.5915 BLOK 1, RUMAH AWAM SEMPANG,
77300 MERLIMAU

Tuan,

KEPUTUSAN PEMBATALAN PERTUKARAN TEMPAT PENGAJIAN

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat dari Bahagian Ambilan dan Pembangunan Pelajar KPT.JPP(O).604-1/3/1 (37) bertarikh 27 Mac 2019 adalah berkaitan.

2. Sukacita dimaklumkan bahawa permohonan tuan untuk membatalkan pertukaran tempat pengajian adalah **DILULUSKAN.**

3. Sehubungan dengan itu, tuan dibenarkan untuk meneruskan pengajian di politeknik ini.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MOHD RUSLAN BIN SALIKIN)
Ketua Jabatan Hal Ehwal Pelajar
b.p Pengarah
Politeknik Tuanku Syed Sirajuddin

s.k
- Pengarah, Bahagian Ambilan dan Pembangunan Pelajar
- Pengarah, Politeknik Merlimau

CONTOH

POLITEKNIK TUANKU SYED SIRAJUDDIN
KEMENTERIAN PENGAJIAN TINGGI
Pauh Putra,
02600 Arau
PERLIS, MALAYSIA

POLITEKNIK MALAYSIA
TUANKU SYED SIRAJUDDIN
Tel : 04-988 6200
Faks : 04-988 6300
Laman web : www.ptss.edu.my
Facebook : politeknik.edu

Ruj. Kami: PTSS/HEP/17/02/02/Jld.12 (28)
Tarikh: 28 Julai 2019

SUZANA BT. MOHD. NORPIAH (06DKA10F1005)
J.5915 BLOK 1, RUMAH AWAM SEMPANG,
77300 MERLIMAU

Tuan,

KEPUTUSAN PENANGGUHAN PERTUKARAN TEMPAT PENGAJIAN

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat dari Bahagian Ambilan dan Pembangunan Pelajar KPT.JPP(O).604-1/3/1(37) bertarikh 27 Mac 2019 adalah berkaitan.

2. Sukacita dimaklumkan bahawa permohonan tuan untuk menangguhkan pertukaran tempat pengajian adalah **DILULUSKAN.**

3. Sehubungan dengan itu, tuan dibenarkan untuk meneruskan pengajian di politeknik ini.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MOHD RUSLAN BIN SALIKIN)
Ketua Jabatan Hal Ehwal Pelajar
b.p Pengarah
Politeknik Tuanku Syed Sirajuddin

s.k
- Pengarah, Bahagian Ambilan dan Pembangunan Pelajar
- Pengarah, Politeknik Merlimau

CONTOH

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA MUKAH

BORANG PERMOHONAN PERTUKARAN PROGRAM

MAKLUMAT PELAJAR			
Nama			
No. K/P		Semester	
No. Pendaftaran		Alamat Tetap	
Program			
Jabatan			
Telefon			

MAKLUMAT PERTUKARAN PROGRAM			
Program yang dipohon			
Jabatan			
Nyatakan sebab/alasan memohon pertukaran program (sila sertakan dokumen sokongan – jika ada)			
Tarikh:		Tandatangan Pemohon	

ULASAN/KENYATAAN PENASIHAT AKADEMIK (sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

ULASAN/KENYATAAN PEGAWAI PSIKOLOGI (sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

ULASAN/KENYATAAN KETUA JABATAN (YANG DIPOHON) **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

ULASAN/KENYATAAN KETUA JABATAN/UNIT HEP (**sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Statistik	Program Yang Dipohon Dalam Butiran Pemohon	Syarat Kelayakan	Catatan
Program Asal :	Pilihan 1:	☐ Memenuhi syarat ☐ Tidak memenuhi syarat	Permohonan kali ke: ☐ Pertama ☐ Kedua
Program Yang Dipohon :	Pilihan 2:	Tandakan (√) yang mana berkenaan	Tandakan (√) yang mana berkenaan
Tarikh		Tandatangan & Cop Nama dan Jawatan	

KELULUSAN PENGARAH POLITEKNIK/ TIMBALAN PENGARAH POLITEKNIK **(Pilih jenis permohonan pertukaran yang berkaitan sahaja)**			
Permohonan pertukaran program ; ☐ Sama taraf DILULUSKAN / TIDAK DILULUSKAN * ☐ Naik tahap DISOKONG / TIDAK DISOKONG *			
Kenyataan Pengarah Politeknik/ Timbalan Pengarah Politeknik (jika ada)			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

* *potong yang mana tidak berkaitan*

CONTOH

POLITEKNIK MELAKA
KEMENTERIAN PENGAJIAN TINGGI
No. 2, Jalan PPM 10,
Plaza Pandan Malim,
75250 MELAKA
MALAYSIA

Tel : 06-337 6000
Faks : 06-337 6007
Laman web : www.polimelaka.edu.my
Facebook : politeknik.edu

Ruj. Kami: PKM/HEP/12/01/Jld.1 (16*)*
Tarikh: 03 Mei 2019

MOHAMAD FAUZI BIN ABDULLAH (17DEP10F2011)

Tuan,

KEPUTUSAN PERMOHONAN PERTUKARAN PROGRAM

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan bertarikh 23 April 2019 adalah berkaitan.

2. Sukacita dimaklumkan bahawa permohonan tuan untuk bertukar program dari Diploma Kejuruteraan Elektronik (Komunikasi) ke Diploma Akauntasi dalam semester 2 mulai Sesi Jun 2019 **DILULUSKAN.**

3. Sehubungan dengan itu, tuan diminta hadir ke Pejabat Hal Ehwal Pelajar dengan kadar segera untuk mendapat maklumat selanjutnya.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(**HAZIRA BINTI SALEH**)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Melaka

CONTOH

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA MUKAH

BORANG PERMOHONAN PERTUKARAN MOD PENGAJIAN/ TEMPAT PENGAJIAN

MAKLUMAT PELAJAR			
Nama			
No. K/P		Semester	
No. Pendaftaran		Alamat Tetap:	
Program			
Jabatan			
No. Telefon			

MAKLUMAT PERTUKARAN			
Program Yang Dipohon			
Sesi Dipohon			
Politeknik yang dipohon			
Nyatakan sebab/alasan memohon pertukaran jenis program (sila sertakan dokumen sokongan – jika ada)			
Tarikh		Tandatangan Pemohon	

ULASAN/KENYATAAN PENASIHAT AKADEMIK **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

ULASAN/KENYATAAN KETUA JABATAN **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN/KENYATAAN KETUA JABATAN/UNIT HAL EHWAL PELAJAR (**sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Statistik Pelajar Program Secara Sambilan Yang Dipohon			
Catatan			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
SOKONGAN PENGARAH POLITEKNIK/ TIMBALAN PENGARAH POLITEKNIK			
Ulasan Pengarah Politeknik/ Timbalan Pengarah Politeknik:			
Permohonan pertukaran mod pengajian DISOKONG / TIDAK DISOKONG*			
Tarikh:		Tandatangan & Cop Nama dan Jawatan	

CONTOH

* *potong yang mana tidak berkaitan*

POLITEKNIK SULTAN HAJI AHMAD SHAH
KEMENTERIAN PENGAJIAN TINGGI
Semambu,
25350 Kuantan
PAHANG, MALAYSIA

POLITEKNIK MALAYSIA
SULTAN HAJI AHMAD SHAH
Tel : 09-5655300
Faks : 09-566 3104
Laman web : www.polisas.edu.my
Facebook : politeknik.edu

Ruj. Kami: POLISAS/HEP/001/1(2)
Tarikh: 02 Mei 2019

ENGKU NORHUDA BT.ENGKU ZAINAL AABIDIN (17DKA09F2010)
PT 233, TAMAN SRI DALAM RHU,
16200 TUMPAT.
KELANTAN

Tuan,

KEPUTUSAN PERMOHONAN PERTUKARAN MOD PENGAJIAN POLITEKNIK KPT

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat dari Jabatan Pendidikan Politeknik dan Kolej Komuniti KPM.JPP(O)604-1/3/3 (4) bertarikh 30 April 2019 adalah berkaitan.

2. Sukacita dimaklumkan bahawa permohonan tuan untuk menukar mod pengajian bagi program Diploma Kejuruteraan Awam dari Sepenuh Masa ke Secara Sambilan dan ditempatkan di Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), telah **diluluskan** mulai Sesi **Jun 2019.**

3. Sehubungan dengan itu, tuan diminta menghubungi Pegawai Latihan dan Pendidikan Lanjutan PSA di talian 03-51634000 untuk mendapatkan maklumat lanjut mengenai pendaftaran tuan di sana.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah

(RAMLEE BIN JANTAN)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Haji Ahmad Shah.

CONTOH

POLITEKNIK SULTAN HAJI AHMAD SHAH
KEMENTERIAN PENGAJIAN TINGGI
Semambu,
25350 Kuantan
PAHANG, MALAYSIA

POLITEKNIK MALAYSIA
SULTAN HAJI AHMAD SHAH
Tel : 09-5655300
Faks : 09-566 3104
Laman web : www.polisas.edu.my
Facebook : politeknik.edu

Ruj. Kami:POLISAS/HHP/001/5JLD.24(90)
Tarikh : 04 April 2019

Pengarah
Politeknik Seberang Perai
Jalan Permatang Pauh
13500 Permatang Pauh
(u.p: Pegawai Unit Latihan dan Pendidikan Lanjutan)

Tuan,

FAIL PELAJAR PERTUKARAN MOD PENGAJIAN

Adalah saya dengan hormatnya merujuk kepada perkara di atas.

2. Bersama ini disertakan fail pelajar yang tersebut seperti di bawah untuk tindakan tuan selanjutnya.

Bil	No.KP	Nama	Program
1.	831114035226	Syarina Wahida bt. Ab. Wahab	DAT6

3. Untuk maklumat tuan, pelajar tersebut telah berjaya di dalam permohonan pertukaran mod program dan ditempatkan di politeknik tuan mulai sesi Dis 2019.

4. Sila tuan akui penerimaanya.

Sekian,terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(RAMLEE BIN JANTAN)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Haji Ahmad Shah

CONTOH

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA MUKAH

BORANG PERMOHONAN PENANGGUHAN PENGAJIAN

MAKLUMAT PELAJAR			
Nama			
No. K/P		Semester	
No. Pendaftaran		Alamat Tetap	
Program			
Jabatan			
Telefon			

MAKLUMAT PENANGGUHAN PENGAJIAN			
Sesi Penangguhan			
Sesi Lapor Diri Semula			
Nyatakan sebab/alasan memohon penangguhan (Sila √ dan sertakan dokumen sokongan – jika ada)	☐ Masalah Kesihatan ☐ Masalah Kewangan	☐ Masalah Peribadi ☐ Lain-lain	
		Tandatangan Pemohon	

ULASAN/KENYATAAN PENASIHAT AKADEMIK **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

ULASAN/KENYATAAN PEGAWAI PSIKOLOGI **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN/KENYATAAN PEGAWAI PERHUBUNGAN DAN LATIHAN INDUSTRI **(Bagi Pelajar Sedang Menjalani Latihan Industri)** **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN/KENYATAAN KETUA JABATAN **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

ULASAN/KENYATAAN KETUA JABATAN/UNIT HAL EHWAL PELAJAR **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Kesihatan	Disiplin / Tatatertib / Kes Polis	Bantuan Kewangan	Ulasan/Kenyataan
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

KELULUSAN PENGARAH POLITEKNIK/ TIMBALAN PENGARAH POLITEKNIK			
Kenyataan Pengarah Politeknik/ Timbalan Pengarah Politeknik (jika ada)			
Permohonan penangguhan pengajian DILULUSKAN / TIDAK DILULUSKAN *			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

* *potong yang mana tidak berkaitan*

CONTOH

POLITEKNIK SULTAN IDRIS SHAH
KEMENTERIAN PENGAJIAN TINGGI
Sungai Lang, 45100 Sungai Air Tawar,
SELANGOR,
MALAYSIA

POLITEKNIK MALAYSIA
SULTAN IDRIS SHAH

Tel : 03-3280 6200
Faks : 03-3280 6400
Laman web :www.psis.edu.my
Facebook : politeknik.edu

Ruj. kami: PSIS/HEP/001/5Jld.7(95)
Tarikh: 08 April 2019

NURRAFIDAH BT. MOHD. RADZI
NO. 8, KAMPUNG SUNGAI SELUANG BAWAH
09600 LUNAS,
KEDAH.

Tuan,

KEPUTUSAN PENANGGUHAN PENGAJIAN SESI DISEMBER 2019

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan bertarikh 04 April 2019 adalah berkaitan.

2. Setelah meneliti permohonan tuan, sukacita dimaklumkan bahawa permohonan tuan untuk menangguhkan pengajian sesi Disember 2019 adalah **DILULUSKAN**.

3. Sila hubungi Pejabat Hal Ehwal Pelajar politeknik ini pada bulan Mei 2020 untuk mendapat maklumat lapor diri bagi sesi Jun 2020.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(ABD. RASHID BIN MOHD ALI)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Idris Shah

s.k: Ketua Jabatan Pelancongan dan Hospitaliti
Pegawai Perhubungan dan Latihan Industri
Pegawai Peperiksaan
Pustakawan
Pegawai Sukan & Kokurikulum
Fail pelajar

CONTOH

(nama dan alamat pelajar)

_____
_____

(NoTel:

Tarikh: _____

Pengarah,

_____
_____
_____

Tuan,

PERMOHONAN BERHENTI PENGAJIAN DI POLITEKNIK KPT

Nama Pelajar: _____

No.Pendaftaran: _____

Program: _____

Semester: _____

Penasihat Akademik: _____

Saya memohon berhenti pengajian mulai dari tarikh surat ini atas sebab*:

☐ mendapat tawaran pekerjaan

☐ menyambung pengajian di institusi lain. Nyatakan nama institusi:

_____

☐ masalah peribadi.

** tandakan (√) di dalam petak berkenaan*

2. Kelulusan daripada pihak tuan amatlah dihargai.

Sekian. Terima kasih.

_____
(*Tanda tangan pelajar*)

CONTOH

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA MUKAH

BORANG PERMOHONAN BERHENTI PENGAJIAN

MAKLUMAT PELAJAR			
Nama			
No. K/P		Semester	
No. Pendaftaran		Alamat Tetap	
Program			
Jabatan			
No. Telefon			

MAKLUMAT BERHENTI PENGAJIAN			
Sesi Berhenti Pengajian			
Nyatakan sebab/alasan memohon berhenti (sila √ dan sertakan dokumen sokongan – jika ada)	☐ Tawaran belajar di tempat lain ☐ Mendapat pekerjaan ☐ Masalah pembelajaran ☐ Lain-lain	☐ Tidak berminat ☐ Masalah kewangan ☐ Masalah kesihatan	
Tarikh		Tandatangan Pemohon	

ULASAN/KENYATAAN PENASIHAT AKADEMIK **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

ULASAN/KENYATAAN PEGAWAI PERHUBUNGAN DAN LATIHAN INDUSTRI **(Bagi Pelajar Sedang Menjalani Latihan Industri)** **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

CONTOH

ULASAN/KENYATAAN PEGAWAI PSIKOLOGI (*jika berkaitan*) **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN/KENYATAAN KETUA JABATAN **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN/KENYATAAN PUSTAKAWAN **(Kenyataan berkaitan pinjaman buku dan media perpustakaan)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
ULASAN/KENYATAAN KETUA JABATAN/UNIT HAL EHWAL PELAJAR **(sila sertakan lampiran sekiranya ruangan ini tidak mencukupi)**			
Tarikh		Tandatangan & Cop Nama dan Jawatan	
KELULUSAN PENGARAH POLITEKNIK/ TIMBALAN PENGARAH POLITEKNIK			
Permohonan berhenti pengajian di atas * DILULUSKAN / TIDAK DILULUSKAN			
Kenyataan Pengarah Politeknik/ Timbalan Pengarah Politeknik (jika ada)			
Tarikh		Tandatangan & Cop Nama dan Jawatan	

** potong yang mana tidak berkaitan*

CONTOH

POLITEKNIK TUANKU SYED SIRAJUDDIN
KEMENTERIAN PENGAJIAN TINGGI
Pauh Putra,
02600 Arau
PERLIS, MALAYSIA

POLITEKNIK MALAYSIA
TUANKU SYED SIRAJUDDIN
Tel : 04-988 6200
Faks : 04-988 6300
Laman web : www.ptss.edu.my
Facebook : politeknik.edu

Ruj. Kami: PTSS/HEP/17/02/02(30)
Tarikh: 28 Julai 2019

_____

_____

_____

Tuan,

KEPUTUSAN PERMOHONAN BERHENTI PENGAJIAN

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan bertarikh adalah berkaitan.

2. Permohonan anda untuk berhenti pengajian program semester adalah diluluskan. Semoga anda berjaya dalam kerjaya yang dipilih.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MOHD RUSLAN BIN SALIKIN)
Ketua Jabatan Hal Ehwal Pelajar
b.p Pengarah,
Politeknik Tuanku Syed Sirajuddin.

s.k - Ketua Jabatan
- PPLI
- Pegawai Peperiksaan
- Pustakawan
- Pegawai Sukan & Kokurikulum
- Pegawai Psikologi
- Fail pelajar
- Ibu/ bapa/ penjaga

CONTOH

KAD PELAJAR BAHARU

Kad pelajar baharu mengandungi maklumat asas seperti berikut :

i. Logo dan Nama Politeknik.
ii. Nombor Pendaftaran
iii. Nombor Siri (merujuk kepada Kod Pilih Baharu)
iv. Gambar
v. Tamat Tempoh Pengajian
vi. Nama Penuh
vii. No Kad Pengenalan
viii. Nama Singkatan
ix. Nota Ringkas
x. Tandatangan & Nama Pengarah

PHEP(PD) perlu menyediakan kad pelajar dan menyerahkan kad pelajar melalui Jabatan Akademik masing-masing untuk diagihkan kepada pelajar selewat-lewatnya dalam tempoh 14 hari selepas tarikh pendaftaran.

Contoh Kad Pelajar:

MUKA DEPAN

MUKA BELAKANG

ix

x

POLITEKNIK SULTAN AZLAN SHAH
KEMENTERIAN PENGAJIAN TINGGI
Behrang Stesen
35950 Behrang
PERAK, MALAYSIA

Tel : 05-454 4431
Faks : 05-454 4993
Laman web : www.psas.edu.my
Facebook:politeknik.edu

Ruj.Kami: PSAS/HEP/(PD)04/052(40)
Tarikh: 03 Februari 2019

Pengarah
Bahagian Ambilan dan Pembangunan Pelajar
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Galeria PjH
Aras 6, Jalan P4W
Persiaran Perdana, Presint4
62100 PUTRAJAYA

Tuan,

MAKLUMBALAS NORMA AMBILAN SESI JUN DAN DISEMBER 2019

Adalah saya dengan hormatnya merujuk kepada perkara di atas dan surat tuan KPT/JPP(O).604-2/2(7) bertarikh 13 Januari 2019 adalah berkaitan.

2. Bersama ini disertakan Norma Ambilan Pelajar Politeknik Sultan Azlan Shah bagi Sesi Jun 2019 dan Disember 2019 untuk perhatian dan tindakan pihak tuan.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(AZLIDA BINTI ABDULLAH)
Ketua Jabatan Hal Ehwal Pelajar
b.p. Pengarah
Politeknik Sultan Azlan Shah

CONTOH

MAKLUMAT POLITEKNIK/ KETUA JABATAN UNIT HAL EHWAL PELAJAR/ PEGAWAI HAL EHWAL PELAJAR

Bil.	Alamat Politeknik	No Telefon	No Faks	Jabatan/Unit Hal Ehwal Pelajar
1	**Politeknik Ungku Omar (PUO)** Jalan Raja Musa Mahadi, 31400 Ipoh, PERAK. www.puo.edu.my	05-545 7622 / 7656 / 7260	05-547 1162	**Cik Shamsuri binti Mior Khalid @ Meor Alif** shamsuri@puo.edu.my 012-510 3564 05-545 7656 **Cik Khamsiah binti Ishak** siahishak@puo.edu.my 019-577 1242 05-545 7656
2	**Politeknik Sultan Haji Ahmad Shah (POLISAS)** Semambu, 25350 Kuantan, PAHANG. www.polisas.edu.my	09-565 5300	09-566 3104	**En. Ramlee bin Jantan** ramlee@polisas.edu.my 019-988 0746 09-565 5343 **En. Mohd Azlan bin Izuddin** azlan_izuddin@polisas.edu.my 019-984 2218 09-565 5342
3	**Politeknik Sultan Abdul Halim Mu'adzam Shah (POLIMAS)** Bandar Darulaman, 06000 Jitra, KEDAH. www.polimas.edu.my	04-914 6100	04-917 4232	**En. Ahmad Walid bin Md Yusuf** warlate@yahoo.com.my 012-534 9261 04-914 6133 **En. Mohd Hafeez bin Mohd Soid** hafeez4462.60@gmail.com 019-4778177 04-9146100 ext 6130
4	**Politeknik Kota Bharu (PKB)** km 24, Kok Lanas, 16450 Ketereh, KELANTAN. www.pkb.edu.my	09-788 9126	09-788 8739	**En. Azmi bin Juadi @ Rosbi** azmijuadi@pkb.edu.my 019-917 9952 09-788 9126 **Pn. Muzimah Aida binti Md Mustafa** aidaasuka80@gmail.com 013- 9407 464 09-789 9126 ext 231

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
5	**Politeknik Kuching (PKS)** KM 22, Jalan Matang, 93050 Kuching, SARAWAK. www.poliku.edu.my	082-845 596	082-845 023	**En. Mahathir bin Mohamad Kamin** mahathir@poliku.edu.my 082-845 596/7/8 019-848 4455 **En. Abdul Yazid bin Ibrahim** abdyazid@poliku.edu.my 082-845 204 016-888 9683
6	**Politeknik Port Dickson (PPD)** KM 14, Jalan Pantai, 71050 Si Rusa, Port Dickson, NEGERI SEMBILAN. www.polipd.edu.my	06-662 2000 / 2111	06-662 2026 / 2027	**Encik Mohd Zaki bin Mustapha** hjpandak75@gmail.com 010-400 3354 06-662 6355 **Pn. Nurfarizah binti Ishak** nurfarizah@polipd.edu.my 013-3551136 06-662 2016
7	**Politeknik Kota Kinabalu (PKK)** Jalan Politeknik, 88450 Kota Kinabalu, SABAH. www.polikk.edu.my	088-401 800	088-499 960	**Ts Saril Bin Haji Yusop** saril@polikk.edu.my 019-881 8084 088-401 812 **En. Mohd Hanif bin Abd Rahman** hanif@polikk.edu.my 011-1305 5900 088-401800 ext 114
8	**Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)** Persiaran Usahawan, Seksyen U1, 40150 Shah Alam, SELANGOR. www.psa.edu.my	03-5163 4000	03-5569 1949	**En. Jasni bin Mohd Noor** mnjasni@psa.edu.my 019-215 3953 03-5163 4063 **En. Abu Bakar Hafis bin Kahar** hafis280280@yahoo.com 0192184827

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
9	**Politeknik Ibrahim Sultan (PIS)** km 10, Jalan Kong Kong, 81700 Pasir Gudang JOHOR. www.pis.edu.my	07-261 2488	07-261 2402	**En. Abu Bakar bin Abdul Hamid** abubakar@pis.edu.my 017-679 1254 07-261 2001 **Pn. Zarina binti Mohd Suhaimi** zms1310@gmail.com 0193065008 072611032
10	**Politeknik Seberang Perai (PSP)** Jalan Permatang Pauh 13500 Permatang Pauh PULAU PINANG www.psp.edu.my	04-538 3322	04-538 9266	**En. Shuhaimi bin Samanol** shuhaimi@psp.edu.my 0134361718 04-5383322 ext 1021 **En. Mohd Kamarulzaman bin Zulkepeli** kzaman@psp.edu.my 0193659966 04-5383322 ext 5100
11	**Politeknik Melaka (PMK)** No. 2, Jalan PPM 10, Plaza Pandan Malim, 75250 MELAKA. www.polimelaka.edu.my	06-337 6000	06-337 6007	**Pn. Hazira binti Saleh** hazira@polimelaka.edu.my 012-6811020 06-337 6118 **Cik Nur Azlina binti Jamil** nurazlina@polimelaka.edu.my 0122687034 063376058
12	**Politeknik Kuala Terengganu (PKT)** Jalan Sultan Ismail, 20200 Kuala Terengganu, TERENGGANU www.pkt.edu.my	09-620 4100	09-620 4102	**En. Mohd Zailani bin Sulong** zailani@pkt.edu.my 012-968 0614 09-6322000 ext 2022 **Pn. Norhayati binti Ismail** norhayati@pkt.edu.my datahep@gmail.com 019-987 7976 09-6322000 ext 2022 **Pn. Nur'aimi binti A.Rahman** datahep@gmail.com 019-9272540 09-6322000 ext 2055

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
13	**Politeknik Sultan Mizan Zainal Abidin (PSMZA)** KM 8, Jalan Paka, 23000 Dungun, TERENGGANU www.psmza.edu.my	09-840 0800	09-845 8781	**En. Yaswadi bin Mat Yasim** yaswadi@psmza.edu.my 013-9041147 **En. Ahmad Tarmizi bin Muhamad** tarmizie@psmza.edu.my 012-981 3637 09-840 0900
14	**Politeknik Merlimau (PMM)** KB 1031 Pejabat Pos Merlimau, 77300 Merlimau, MELAKA. www.pmm.edu.my	06-263 6687	06-263 6678	**En. Ts. Zan Aizuwan Bin Hj Zainal Abidin** zanaizuwan@pmm.edu.my 019-356 6715 06-263 6687 ext 1180 **Pn. Azrina Binti Mohmad Sabiri** azrina@pmm.edu.my 012-563 2344 062636687 ext 1181
15	**Politeknik Sultan Azlan Shah (PSAS)** 35950 Behrang Stesen, PERAK. www.psas.edu.my	05-454 4431	05-454 4993	**En. Marzuki bin Sepiaail** msepiaail@gmail.com 0129009565 05-454 4431 ext 4109 **En. Muhammad Solihin Bin Yaakub** solihin@psas.edu.my 016-338 6095 05-454 4431 ext 4107
16	**Politeknik Tuanku Sultanah Bahiyah (PTSB)** Kulim Hi-Tech Park, 09000 Kulim, KEDAH. www.ptsb.edu.my	04-403 3333	04-403 3033	**En. Norsyahidan bin Mohamad Yusof** norsyahidan@ptsb.edu.my 013-521 4176 04-403 3333 ext 2023/1209 **En. Mohd Rizwan bin Elias** rizwan@ptsb.edu.my 018-466 8134 04-403 3333 ext 2428

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
17	**Politeknik Sultan Idris Shah (PSIS)** Sungai Lang, 45100 Sungai Air Tawar, SELANGOR. www.psis.edu.my	03-3280 6200	03-3280 6400	**En. Che Samsuriza nin Hj. Che Noh** samsuriza@psis.edu.my 013-640 9300 03-3280 6258 **En. Mohammad bin Muda** mohammadmuda@psis.edu.my 019-364 0375 03-328 06257
18	**Politeknik Tuanku Syed Sirajuddin (PTSS)** Pauh Putra, 02600 Arau, PERLIS. www.ptss.edu.my	04-988 6200	04-988 6300	**En. Mazrul Hisyam bin Mat Ali** mazrul@ptss.edu.my 012-525 5033 04-988 6200 ext 6203 **Pn. Syazwani Binti Sobri** syazwani@ptss.edu.my 014-612 6367 04-9886204
19	**Politeknik Muadzam Shah (PMS)** Lebuhraya Tun Abdul Razak, 26700 Muadzam Shah, PAHANG. www.pms.edu.my	09-450 2005 / 2006 / 2007	09-450 2009	**En. Mohd Hazely bin Abdul Rahim** mohd.hazely@mail.com 019-205 8007 09-450 2007
20	**Politeknik Mukah (PMU)** KM 7.5, Jalan Oya, 96400 Mukah SARAWAK. www.pmu.edu.my	084-874 001	084-874 006	**En. Awang Annuar bin Awang Mansor** annuar@pmu.edu.my 012-851 2741 084-874 001 **En. Mohamad Nirza Yusniezam Bin Kusuiri** mnirza@pmu.edu.my 011-625 7171 084-874 001

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
21	**Politeknik Balik Pulau (PBU)** Pinang Nirai, Mukim 6, 11000 Balik Pulau, PULAU PINANG. www.pbu.edu.my	04-868 9000	04-869 2061	**En. Nur Amin bin Abd. Rahim** amin.rahim@pbu.edu.my 019-264 9157 04-868 9000 **En. Mohd Zaidil Adha bin Mat Hussin** zaidiladha@pbu.edu.my 012-331 1885 04-868 9522
22	**Politeknik Jeli (PJK)** Jalan Raya Timur – Barat, 17600 Jeli, KELANTAN. www.pjk.edu.my	09-944 3600	09-946 2802	**En. Irozi bin Ismail** irozi@pjk.edu.my 013-933 9351 09-944 3616 **En. Zakaria bin Deraman** zakaria@pjk.edu.my zakariaderaman37@gmail.com 016-921 5043 09-944 3639
23	**Politeknik Nilai (PNS)** Kompleks Pendidikan Bandar Enstek 71760 Bandar Enstek NEGERI SEMBILAN. www.polinilai.edu.my	06-798 0400	06-791 1269	**En. Nazamuddin bin Ahmad Razali** nazamuddin@polinilai.edu.my 019-380 0025 06-798 0488 **En. Shuharzi bin Md Salleh** shuharzi@polinilai.edu.my 013-604 7732 06-798 0408
24	**Politeknik Banting (PBS)** Persiaran Ilmu, Jalan Sultan Abdul Samad, 42700 Banting SELANGOR. www.polibanting.edu.my	03-3120 1625	03-3120 1706	**En. Roswady bin Abdul Wahab** roswady@polibanting.edu.my 013-922 3252 **Pn. Aiza Shairyna binti Mohd Amin** aizabad@yahoo.com.my 019-7744397

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
25	**Politeknik Mersing (PMJ)** Jalan Nitar, 86800 Mersing, JOHOR. www.pmj.edu.my	07-798 0001	07-798 0002	**Tn. Hj. Lajakarek bin Hj. Mohd Amin** lajaamin@gmail.com 019-280 8550 07-798 0001 ext 2515 **En. Mohd Faizal bin Mohd Asri** faizal@pmj.edu.my 013-982 8583 07-798 0001 ext 2513
26	**Politeknik Hulu Terengganu (PHT)** Jln Pengkalan Gawi, Kuala Jeneris 21700 Kuala Berang, Hulu Terengganu, TERENGGANU. www.pht.edu.my	09-682 5555	09-682 5556	**En. Abdullah @ Mat Yusof bin Yaacob** yusof76@pht.edu.my 013-263 5457 09-682 5555
27	**Politeknik Sandakan (PSS)** Education Hub, Jalan Sungai Batang, Batu 10, 90000 Sandakan, SABAH www.pss.edu.my	089-228 351	089-228 325	**En. Irwandih bin Mat Jaili** irwandih@pss.edu.my 013-777 8292 089-228 351 **Pn. Azlinawati Binti Alidin** hasmidah@pss.edu.my 013-315 8978
28	**Politeknik METrO Kuala Lumpur (PMKL)** No. 2-14, Jalan Setiawangsa 10, Taman Setiawangsa, 54200 KUALA LUMPUR. www.pmkl.edu.my	03-4251 8000	03-4251 7979	**Pn. Sharifah Fadiah binti Syed Mohd** sharifah_fadiah@yahoo.com sharifahfadiah@pmkl.edu.my 013-651 4766 03-4251 8000

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
29	**Politeknik METrO Kuantan (PMKU)** A-5, Jalan Tun Ismail 2, Sri Dagangan II, 25000 Kuantan, PAHANG. www.pmku.edu.my	09-565 9000	09-517 3259	**Pn. Noor Farizan binti Basroh** farizanbasroh@gmail.com 012-338 3258
30	**Politeknik METrO Johor Bahru (PMJB)** No 64, Jalan Suria 19, Taman Putera, 81100 Johor Bahru, JOHOR. www.pmjb.edu.my	07-335 8851	07-335 8854	**Pn. Noraina binti Wahid** noraina.wahid@pmjb.edu.my 019-771 6292 07-335 8851/52 **Pn. Erlia binti Nasir** erlia.nasir@pmjb.edu.my 013-729 4477 07-335 8851/52
31	**Politeknik METrO Betong (PMBS)** 1/12, Fasa 2, Bandar Baru Betong, Jalan Baru Betong, 95700 Betong, SARAWAK. www.pmbs.edu.my	083-472 676	083-472 991	**En. Muhammad Firdaus bin Mohd Ramlee** firdausspiutm@gmail.com 012-922 9582 083-472 686
32	**Politeknik METrO Tasek Gelugor (PMTG)** No. 5-27, Pusat Komersil Tasek Gelugor, 13300 Tasek Gelugor PULAU PINANG. www.pmtg.edu.my	04-3904 799	04-3902 829	**Pn. Norsulliatie binti Muhammad** sulliatie@pmtg.edu.my 019-485 3775 04-390 4799

Bil	Alamat Politeknik	No. Telefon	No. Faks	Jabatan / Unit Hal Ehwal Pelajar
33	**Politeknik Tun Syed Nasir Syed Ismail (PTSN)** Hub Pendidikan Tinggi Pagoh, Km 1, Jalan Panchor, 84600 Pagoh, Muar, JOHOR. www.ptsn.edu.my	06-974 2206	06-974 2395	**En. Mohd Khuzairy Bin Mohd Yusof** xairy79@gmail.com 019-555 5279 06-974 2218 **En. Mohd Zarilfaizi bin Mahyun** jebat765@gmail.com 0137832828 013-783 2828 06-974 2219
34	**Politeknik Besut, Terengganu (PBT)** Lot No. 7222, 7223, 7228 Dan 7229, Mas Sekupang, Mukim Kampung Raja, 22200 Besut, TERENGGANU. www.polibesut.edu.my	09-695 6627	09-695 0701	**En. Mohd Adnan bin Mohd Noor** madnanpbt@gmail.com 013-924 1694 09-695 6627 **Pn. Norazlina binti Abdullah** norazlinaqhaseeh@gmail.com 019-936 8875 09-695 6627
35	**Politeknik Bagan Datuk (PBD)** No 1, Pt 8121, Lorong Lagenda 1, Medan Niaga Lagenda, 36400 Hutan Melintang, PERAK. https://pbd.mypolycc.edu.my	05-641 3416 / 3205	05-641 3570	**En. Azwansyah bin Zulkifli** azwansyah@puo.edu.my 014-517 7244 05-641 3416
36	**Politeknik Tawau, Sabah (PTS)** KM 36, Jalan Apas Balung, 91000 Tawau, SABAH. http://www.politawau.edu.my	089-950 500	089-950 501	**En. Mahadi Ripin** mahadi@politawau.edu.my 016-814 0565 **En. Mohd Iqbal Jaafar** miqbalpts@gmail.com 012-930 2264

KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK MALAYSIA

SKOP TUGAS PEGAWAI HAL EHWAL PELAJAR (PENGAMBILAN DAN DATA)

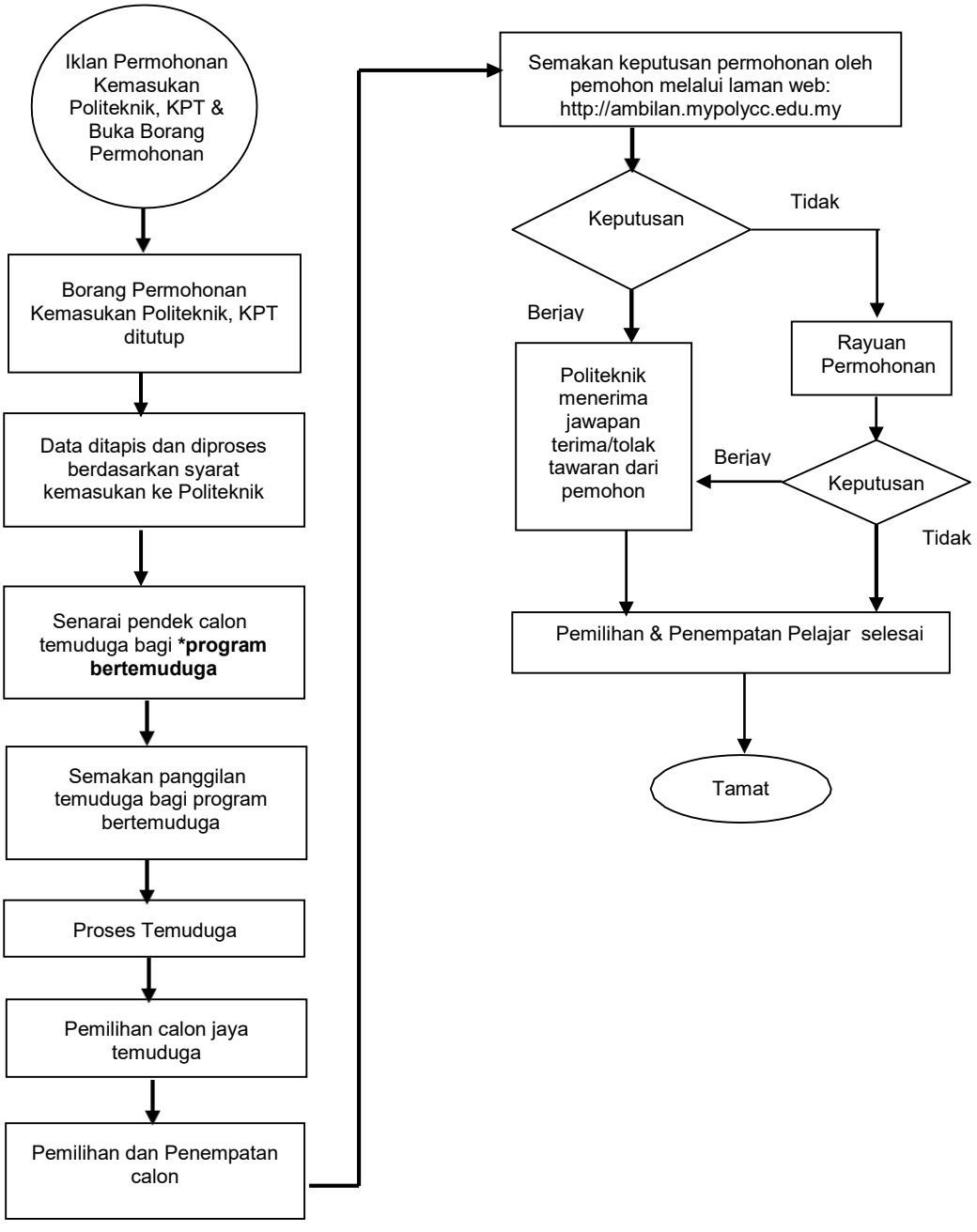
POLITEKNIK MALAYSIA, KEMENTERIAN PENGAJIAN TINGGI

Skop Tugas:

1. Mengurus Pengambilan Pelajar Baharu
2. Mengurus Pendaftaran Pelajar Baharu
3. Mengurus Lapor Diri Pelajar Senior
4. Mengurus Urusan Pelajar Berkaitan:
   - 4.1 Pertukaran Tempat Pengajian
   - 4.2 Pertukaran Program
   - 4.3 Pertukaran Mod Pengajian
   - 4.4 Penangguhan Pengajian
   - 4.5 Berhenti Pengajian
   - 4.6 Mengurus Statistik Pelajar
   - 4.7 Statistik Penerimaan Tawaran
   - 4.8 Statistik Pendaftaran Pelajar Baharu
   - 4.9 Statistik Input, Enrolmen dan Output (IEO)
5. Mengurus Pangkalan Data Pelajar
6. Mengurus Kad Pelajar
7. Mengurus Fail Pelajar
8. Menjalankan tugas-tugas lain yang diarahkan oleh Ketua Jabatan/ Pengarah Politeknik dari semasa ke semasa.

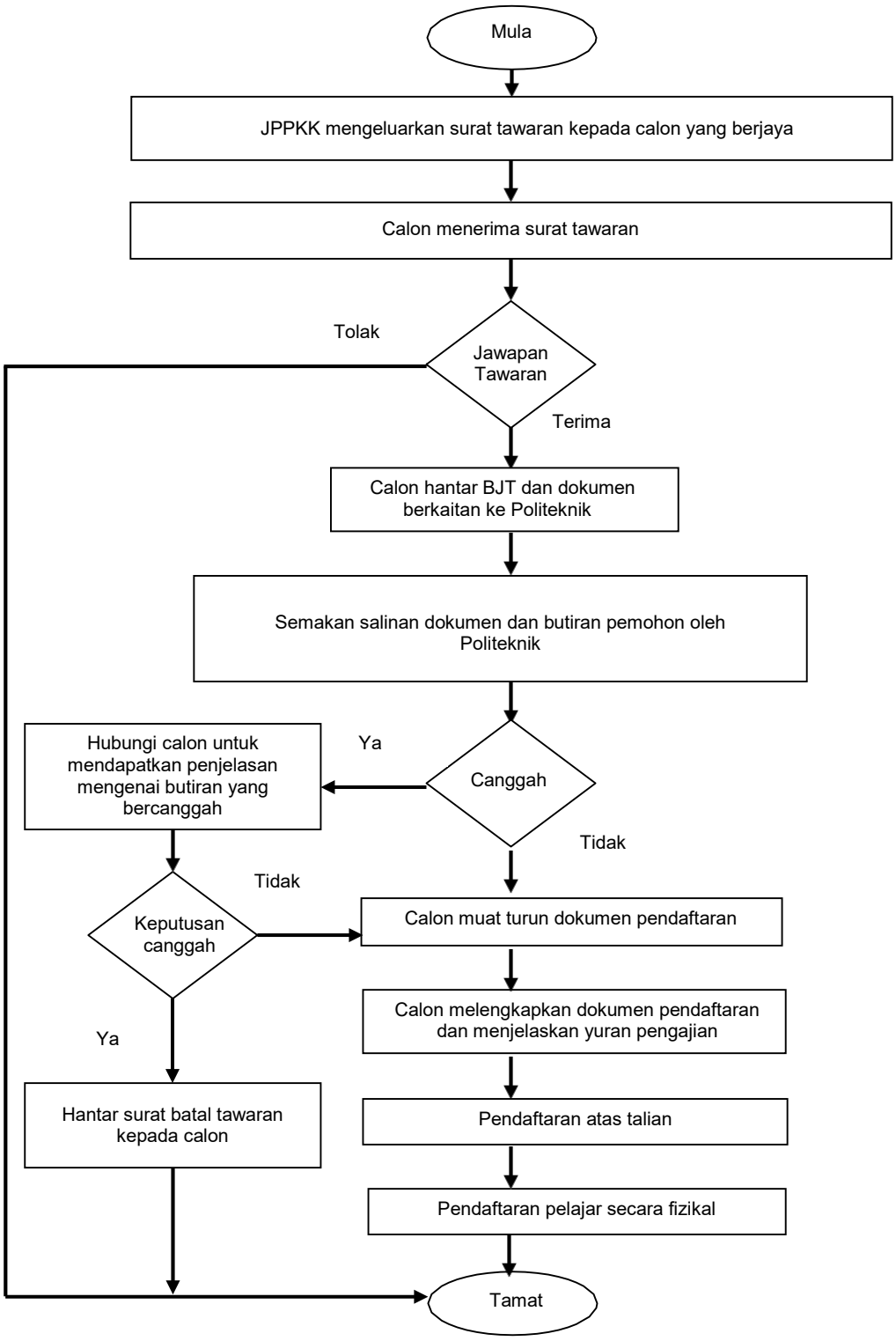
Lampiran C: 01

PENGURUSAN PENGAMBILAN PELAJAR POLITEKNIK KEMENTERIAN PENGAJIAN TINGGI

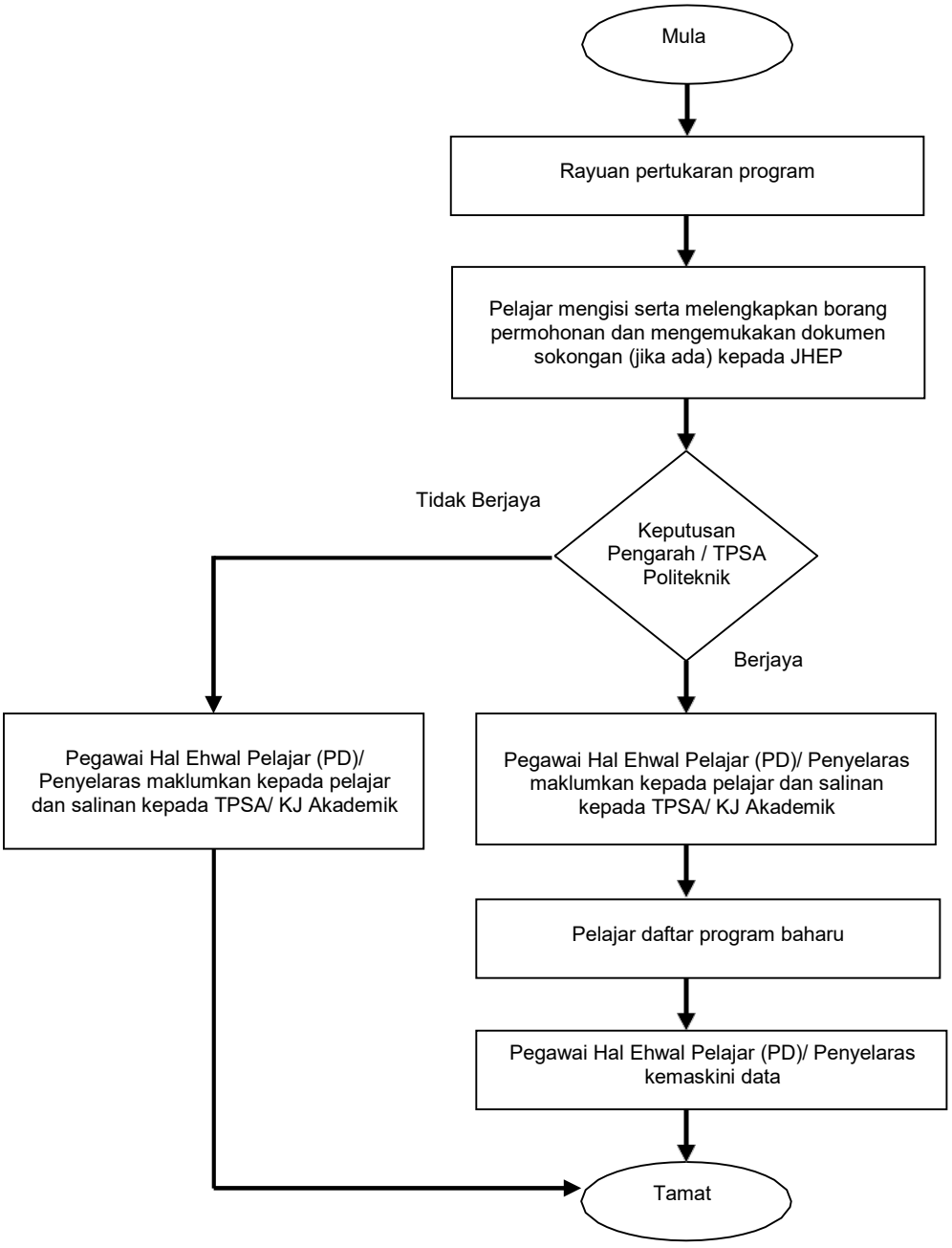


***Program Bertemuduga:**
1. Diploma Kejuruteraan Penyenggaraan Pesawat
2. Diploma Kejuruteraan Perkapalan

PENGURUSAN PENERIMAAN TAWARAN POLITEKNIK KEMENTERIAN PENGAJIAN TINGGI



PENGURUSAN PERTUKARAN PROGRAM PELAJAR TELAH MENDAFTAR POLITEKNIK KEMENTERIAN PENGAJIAN TINGGI



BAHAGIAN AMBILAN & PEMBANGUNAN PELAJAR
ARAS 6 GALERIA PJH, JALAN P4W, PERSIARAN PERDANA, PRESINT 4
62100 WILAYAH PERSEKUTUAN PUTRAJAYA
TEL: 0388883837 FAKS: 0388882111

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Perkhidmatan Online
Fakta & Angka
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Info BKPA
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JPT
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SEBARANG PERTANYAAN BOLEH HUBUNGI NOMBOR YANG TERTERA :
03-8684 2363
WAKTU OPERASI TALIAN OPERASI
ISNIN - KHAMIS : 9.00 PAGI - 5.00 PETANG
REHAT : 1.00 PETANG - 2.00 PETANG
JUMAAT : 9.00 PAGI - 5.00 PETANG
REHAT : 12.15 TENGAH HARI - 2.45 PETANG
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PERMOHONAN
eBORANG MYPOLYCC
KEMASUKAN KE
POLITEKNIK
DAN
KOLEJ KOMUNITI
SESI I 2025/2026
PELAJAR LEPASAN SPM
DIBUKA 21 MAC 2025
(5.00 Petang)
DITUTUP 21 APRIL 2025
(12.00 Tengah Hari)
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SESI AKADEMIK: I : 2025/2026

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Nombor MyKad
(contoh: 010418086127)

Masuk

- **Pemohon dinasihatkan supaya mencuba capaian Permohonan Dalam Talian e-Borang ini pada waktu yang lain jika percubaan pertama gagal atau tidak berjaya pada ketika itu. Ini adalah kerana ada kemungkinan berlaku kesesakan laluan capaian kepada server pangkalan.**
- **Permohonan yang tidak lengkap atau maklumat yang mengelirukan, boleh mengakibatkan permohonan anda ditolak.**

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Dibangunkan oleh Programmer Unit Ambilan Pelajar
Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pendidikan Tinggi
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Syarat Kemasukan

Lepasan SPM (Politeknik Premier)

1. Warganegara Malaysia
2. Memiliki SPM atau setaraf
3. Lulus Sejarah (SPM 2013 dan ke atas)
4. Lulus Bahasa Inggeris
5. Mendapat LIMA (5) kepujian dalam matapelajaran berikut:
    a. Bahasa Melayu
    b. Mathematics
    c. SATU (1) matapelajaran Sains/Teknikal/Vokasional berikut:
        - Akuakultur dan Haiwan Rekreasi
        - Aplikasi Elektrik & Elektronik
        - Asas Kelestarian
        - Asuhan dan Pendidikan Awal Kanak-Kanak
        - Automotif Elektrik & Diesel
        - Automotif Kenderaan
        - Bahan Binaan
        - Biologi
        - Dandanan Rambut
        - Ekonomi Rumahtangga
        - Fizik
        - Fundamental of Programming
        - Gerontologi Asas dan Perkhidmatan Geriatrik
        - Grafik Berkomputer
        - Grafik Komunikasi Teknikal
        - Hiasan Dalaman Asas
        - Hortikultur Hiasan dan Landskap
        - Information and Communication Technology
        - Katering dan Penyajian
        - Kejenteraan Ladang
        - Kerja Bata dan Kayu
        - Kerja Kimpalan
        - Kerja Menggegas & Melarik
        - Kerja Paip Domestik
        - Kimia
        - Kimpalan Arka dan Gas
        - Landskap dan Nurseri
        - Lukisan Geometri dan Automotif
        - Lukisan Geometri dan Elektrik
        - Lukisan Geometri dan Elektronik
        - Lukisan Geometri dan Fabrikasi Logam
        - Lukisan Geometri dan Mesin
        - Lukisan Geometri dan Pembinaan Bangunan
        - Lukisan Geometri dan Penyaman Udara
        - Lukisan Kejuruteraan
        - Matematik Tambahan
        - Membuat Pakaian
        - Membuat Perabot
        - Menservis Automobil

- Menservis Motosikal
- Menservis Peralatan Elektrik Domestik
- Menservis Peralatan Penyejukan dan Penyamanan Udara
- Menservis Radio dan TV
- Patisserie
- Pemasangan dan Kawalan Elektrik
- Pembinaan Domestik
- Pemesinan Berkomputer
- Pemprosesan Makanan
- Pendawaian Domestik
- Pengajian Agroteknologi
- Pengajian Kejuruteraan Awam
- Pengajian Kejuruteraan Elektrik dan Elektronik
- Pengajian Kejuruteraan Mekanikal
- Pengajian Perkembangan Kanak-Kanak
- Pengeluaran Tanaman
- Pengeluaran Ternakan
- Pengurusan Ladang
- Pengurusan Makanan
- Penjagaan Muka dan Dandanan Rambut
- Penyajian Makanan dan Minuman
- Penyamanan Udara
- Penyediaan Masakan Barat dan Timur
- Penyejukan
- Perkhidmatan Awal Kanak-Kanak
- Persolekan
- Pertanian
- Pola Pakaian
- Prinsip Elektrik & Elektronik
- Produksi Multimedia
- Programming and Development Tools
- Rekaan dan Jahitan Pakaian
- Rekacipta
- Sains
- Sains Gunaan
- Sains Komputer
- Sains Pertanian
- Sains Rumah Tangga
- Sains Sukan
- Sains Tambahan
- Seni Reka Tanda
- Tanaman Makanan
- Teknologi Automotif
- Teknologi Bengkel Mesin
- Teknologi Binaan
- Teknologi Binaan Bangunan
- Teknologi Elektrik
- Teknologi Elektronik
- Teknologi Kejuruteraan
- Teknologi Kimpalan dan Fabrikasi Logam
- Teknologi Penyejukan dan Penyamanan Udara

d. DUA (2) matapelajaran lain yang belum diambilkira kepujiannya

6. Calon tidak mempunyai ketidakupayaan penglihatan (buta), ketidakupayaan pendengaran (pekak), ketidakupayaan pertuturan (bisu), ketidakupayaan fizikal (kaki, tangan, lumpuh, lain - lain) dan masalah pembelajaran yang menyukarkan kerja-kerja amali.

Lepasan SPM (Politeknik Konvensional/METrO)

1. Warganegara Malaysia
2. Memiliki SPM atau setaraf
3. Lulus Bahasa Melayu
4. Lulus Sejarah (SPM 2013 dan ke atas)
5. Lulus Bahasa Inggeris
6. Mendapat TIGA (3) kepujian dalam mata pelajaran berikut:
    a. Mathematics
    b. SATU (1) matapelajaran Sains/Teknikal/Vokasional berikut:
        - Akuakultur dan Haiwan Rekreasi
        - Aplikasi Elektrik & Elektronik
        - Asas Kelestarian
        - Asuhan dan Pendidikan Awal Kanak-Kanak
        - Automotif Elektrik & Diesel
        - Automotif Kenderaan
        - Bahan Binaan
        - Biologi
        - Dandanan Rambut
        - Ekonomi Rumahtangga
        - Fizik
        - Fundamental of Programming
        - Gerontologi Asas dan Perkhidmatan Geriatrik
        - Grafik Berkomputer
        - Grafik Komunikasi Teknikal
        - Hiasan Dalaman Asas
        - Hortikultur Hiasan dan Landskap
        - Information and Communication Technology
        - Katering dan Penyajian
        - Kejenteraan Ladang
        - Kerja Bata dan Kayu
        - Kerja Kimpalan
        - Kerja Menggegas & Melarik
        - Kerja Paip Domestik
        - Kimia
        - Kimpalan Arka dan Gas
        - Landskap dan Nurseri
        - Lukisan Geometri dan Automotif
        - Lukisan Geometri dan Elektrik
        - Lukisan Geometri dan Elektronik
        - Lukisan Geometri dan Fabrikasi Logam
        - Lukisan Geometri dan Mesin
        - Lukisan Geometri dan Pembinaan Bangunan
        - Lukisan Geometri dan Penyaman Udara
        - Lukisan Kejuruteraan
        - Matematik Tambahan
        - Membuat Pakaian
        - Membuat Perabot

- Menservis Automobil
- Menservis Motosikal
- Menservis Peralatan Elektrik Domestik
- Menservis Peralatan Penyejukan dan Penyamanan Udara
- Menservis Radio dan TV
- Patisserie
- Pemasangan dan Kawalan Elektrik
- Pembinaan Domestik
- Pemesinan Berkomputer
- Pemprosesan Makanan
- Pendawaian Domestik
- Pengajian Agroteknologi
- Pengajian Kejuruteraan Awam
- Pengajian Kejuruteraan Elektrik dan Elektronik
- Pengajian Kejuruteraan Mekanikal
- Pengajian Perkembangan Kanak-Kanak
- Pengeluaran Tanaman
- Pengeluaran Ternakan
- Pengurusan Ladang
- Pengurusan Makanan
- Penjagaan Muka dan Dandanan Rambut
- Penyajian Makanan dan Minuman
- Penyamanan Udara
- Penyediaan Masakan Barat dan Timur
- Penyejukan
- Perkhidmatan Awal Kanak-Kanak
- Persolekan
- Pertanian
- Pola Pakaian
- Prinsip Elektrik & Elektronik
- Produksi Multimedia
- Programming and Development Tools
- Rekaan dan Jahitan Pakaian
- Rekacipta
- Sains
- Sains Gunaan
- Sains Komputer
- Sains Pertanian
- Sains Rumah Tangga
- Sains Sukan
- Sains Tambahan
- Seni Reka Tanda
- Tanaman Makanan
- Teknologi Automotif
- Teknologi Bengkel Mesin
- Teknologi Binaan
- Teknologi Binaan Bangunan
- Teknologi Elektrik
- Teknologi Elektronik
- Teknologi Kejuruteraan
- Teknologi Kimpalan dan Fabrikasi Logam
- Teknologi Penyejukan dan Penyamanan Udara

c. SATU(1) matapelajaran lain yang belum diambilkira kepujiannya

7. Calon tidak mempunyai ketidakupayaan penglihatan (buta), ketidakupayaan pendengaran (pekak), ketidakupayaan pertuturan (bisu), ketidakupayaan fizikal (kaki, tangan, lumpuh, lain - lain) atau masalah pembelajaran yang menyukarkan kerja-kerja amali

Lulusan Pra Diploma Politeknik

Lulus Pra Diploma Sains

Lulusan selain SPM

1. Warganegara Malaysia
2. Memiliki Sijil Pelajaran Malaysia (SPM)
3. Lulus Bahasa Melayu
4. Lulus Sejarah (SPM 2013 dan ke atas)
5. Calon tidak mempunyai ketidakupayaan penglihatan (buta), ketidakupayaan pendengaran (pekak), ketidakupayaan pertuturan (bisu), ketidakupayaan fizikal (kaki, tangan, lumpuh, lain - lain) atau masalah pembelajaran yang menyukarkan kerja-kerja amali
6. Lulus pengajian peringkat Sijil yang diiktiraf MQA / Sijil Kemahiran Malaysia Tahap 3 dalam bidang yang berkaitan

1	Sijil Politeknik Tahap 3, KKM
	Sijil Kejuruteraan Kimia dan Proses
	Sijil Kejuruteraan Mekanikal
	Sijil Kejuruteraan Mekanikal (Automotif)
	Sijil Kejuruteraan Mekanikal (Bahan)
	Sijil Kejuruteraan Mekanikal (Loji)
	Sijil Kejuruteraan Mekanikal (Pembuatan)
	Sijil Kejuruteraan Mekanikal (Pembungkusan)
	Sijil Kejuruteraan Mekanikal (Penyamanan Udara dan Penyejuk Bekuan)
	Sijil Kejuruteraan Mekanikal (Pertanian)
	Sijil Kejuruteraan Mekanikal (Petroleum)
	Sijil Kejuruteraan Mekanikal (Plastik)
	Sijil Kejuruteraan Mekanikal (Tekstil)

2	Sijil Kolej Komuniti Tahap 3, KKM
	Sijil Mekanikal Pembuatan
	Sijil Penyenggaraan Industri
	Sijil Teknologi Pembuatan
3	Sijil Institut Kemahiran Tinggi PERDA Tahap 3, KKM
	Sijil Kejuruteraan Pembuatan (Pemesinan)
	Sijil Kejuruteraan Pembuatan (Rekabentuk Alatan & Acuan)
	Sijil Kejuruteraan Pembuatan (Rekabentuk Produk)
	Sijil Kejuruteraan Pertanian
	Sijil Teknologi Automotif
	Sijil Teknologi Kimpalan
4	Sijil Institut Kemahiran MARA Tahap 3, KKM
	Sijil Teknologi Elektro Penyaduran
	Sijil Teknologi Kejuruteraan Mekanik Industri
	Sijil Teknologi Kejuruteraan Mekanikal (Lukisan Rekabentuk)
	Sijil Teknologi Kejuruteraan Operasi Loji
	Sijil Teknologi Kejuruteraan Pembuatan
	Sijil Teknologi Kimpalan
5	Sijil Kemahiran Malaysia Tahap 3 *Perlu mengikuti program peralihan (*bridging*) yang ditetapkan
	EDDY CURRENT TESTER (H-080-3)
	Jaminan Kualiti Industri (Pembuatan) (MC-041-3:2012)
	Juruteknik Automasi Senior (H-170-3)
	Juruteknik Automasi Senior (H-176-3)

Juruteknik Fabrikasi & Memasang Struktur Keluli (H-200-3)

JURUTEKNIK FOUNDRI (LEBUR) (G-070-3)

JURUTEKNIK FOUNDRI (PEMBUAT ACUAN & TERAS (G-080-3)

JURUTEKNIK FOUNDRI (PEMBUATAN CORAK) (G-090-3)

JURUTEKNIK FOUNDRI (TUANGAN ACUAN) (G-100-3)

Juruteknik Gulungan (Pembuatan Keluli) (G-113-3)

Juruteknik Kanan Alatan Kepersisan Mekanikal (MC-010-3)

Juruteknik Kanan Jaminan Kualiti (H-301-3)

Juruteknik Kanan Pemeriksaan Radiograf-Binaan Berkimpalan (Minyak & Gas) (MC-110-3:2013)

Juruteknik Kanan Pemeriksaan Ultrasonik-Binaan Berkimpalan (Minyak & Gas) (MC-113-3:2013)

Juruteknik Kanan Rawatan Haba (MC-071-3)

Juruteknik Kanan Rekabentuk Produk Industri (H-312-3)

Juruteknik Kepingan Logam (H-070-3)

Juruteknik Kimpalan Arka Berteraskan Fluks (Keluli Karbon) (H-028-3)

Juruteknik Kimpalan Arka Logam Gas (Keluli Karbon, Keluli Tahan Karat & Aluminium) (H-027-3)

Juruteknik Kimpalan Arka Terbenam (Keluli Karbon) (H-029-3)

Juruteknik Kimpalan Arka Logam Berperisai(Keluli Karbon & Keluli Tahan Karat) (H-024-3)

Juruteknik Kimpalan Arka Tungsten Gas & Arka Logam Berperisai(Keluli Karbon & Keluli Tahan Karat) (H-026-3)

Juruteknik Kimpalan Arka Tungsten Gas (Keluli Karbon & Keluli Tahan Karat & Aluminium) (H-025-3)

Juruteknik Kimpalan Gas (H-022-3)

Juruteknik Kimpalan Logam Tanpa Ferus (H-021-3)

Juruteknik Lebur (Pembuatan Keluli) (G-111-3)

Juruteknik Pemesinan ‘Computer Numerical Control’ (CNC) (CNC Technician) (H-013-3)

Juruteknik Pengendalian Bahan (Pembuatan Keluli) (G-110-3)

Juruteknik Tuangan (Pembuatan Keluli) (G-112-3)

MAGNETIC PARTICLE TESTER- WELDED CONSTRUCTION (H-150-3)

NDT PRACTITIONER (EDDY CURRENT TESTING) L3 (MC-111-3)

NDT PRACTITIONER (MAGNETIC PARTICLE TESTING)L3 (MC-114-3)

Operasi Fabrikasi Paip

Operasi Fabrikasi Struktur Logam (Minyak, Gas & Petrokimia)

Operasi Pembuatan Keluli (MC-076-3:2013 :)

Operasi Pemesinan (MC-050-3:2012)

Operasi Pengeluaran Plastik (MC-100-3:2012)

Operasi Rawatan Haba Industri (MC-071-3:2014)

Pelukis Pelan Kanan Kejuruteraan Mekanikal - Minyak & Gas (MC-082-3)

Pelukis Pelan Kanan Kejuruteraan Mekanikal (H-051-3)

Pelukis Pelan Kanan Kejuruteraan Mekanikal (MC-081-3)

Pelukis Pelan Kanan Kejuruteraan Mekanikal-Minyak & Gas (H-052-3)

Pelukisan Pelan Mekanikal (MC-080-3:2013)

Pembuat Perkakasan Kanan – Acuan Suntikan Plastik (H-097-3)

Pembuat Perkakasan Kanan – Acuan Suntikan Plastik (MC-030-3)

Pembuat Perkakasan Kanan – Alat Tekan (H-096-3)

Pembuat Perkakasan Kanan – Cap Terap Logam (MC-031-3)

Pembuatan Acuan & Dai (MC-031-3:2013)

Pemeriksa Kimpalan Kanan (H-060-3)

Pemeriksaan Kimpalan (MC-060-3:2012)

Pemesin (Operasi Canai) (H-016-3/H-012-3)

Pemesin (Operasi Kisar) (H-015-3/H-011-3)

Pemesin (Operasi Larik) (H-014-3/H-010-3)

Pengamal NDT (Pengujian Penembusan) L3 (MC-112-3)

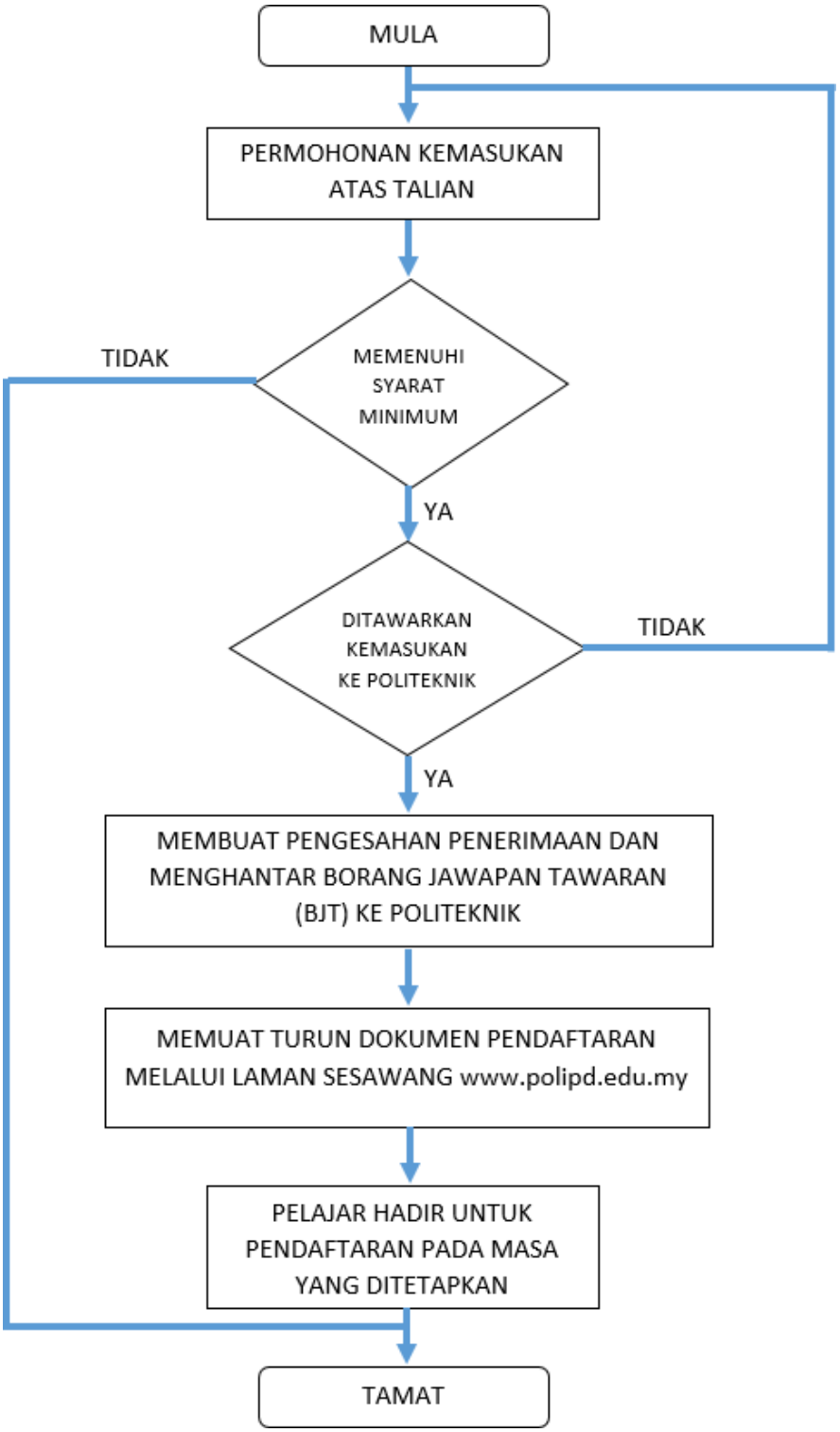
Pengamal NDT (Pengujian Radiografi Industri) L3 (MC-110-3)

Pengamal NDT (Pengujian Ultrasonik) L3 (MC-113-3)
Pengeluaran Penempaan Logam (MC-072-3:2012 :)
Penguji Ultrasonik Aeroangkasa (MC-062-3)
Penguji Ultrasonik Dalam Air (MC-061-3)
Pengujian Arus Pusar – (Minyak & Gas) (MC-111-3:2014)
Pengujian Arus Pusar – Bahan, Komponan & Struktur Aeroangkasa (MC-116-3:2014)
Pengujian Partikel Magnetik – Pembinaan Terkimpal (Minyak & Gas) (MC-114-3:2014)
Pengujian Penembusan- Pembinaan Terkimpal (Minyak & Gas) (MC-112-3:2014)
Pengujian Radiograf – Bahan, Komponan & Struktur Aeroangkasa (MC-117-3:2014)
Penyelenggaraan Mesin Percetakan Mekanikal (PR-027-2:2014)
Penyelia Fabrikasi (Peralatan Tekanan) (MC-075-3)
Penyelia Fabrikasi (SME) (MC-073-3)
Penyelia Fabrikasi (Struktur) (MC-074-3)
Penyelia MHE (MC-043-3)
Penyelia Pengeluaran Plastik – OPP Filem (PG-090-3)
Penyelia Penyelenggara Dandang (H-210-3)
Penyelia Penyelenggaraan (MHE ICT) (MC-042-3)
Penyelia Percetakan (Elektrik/Elektronik) (F-060-3)
Penyeliaan Kejuruteraan Automasi Industri (MC-091-3:2013)
Penyeliaan Operasi Suntikan Acuan Plastik
Penyeliaan Pengeluaran Foundri (MC-070-3:2013)

Lulusan APEL

1. **Warganegara Malaysia**
2. Mendapat sijil APEL (Accreditation of Prior Experiential Learning) daripada MQA untuk kemasukan ke diploma (Tahap 4)

CARTA ALIR PENGAMBILAN, PEMILIHAN DAN KEMASUKAN PELAJAR BAHARU



APPENDIX C4-2a

GARIS PANDUAN PEMINDAHAN KREDIT & PENGECUALIAN KURSUS

Credit Transfer & Course Exemption (CTCE)

POLITEKNIK DAN KOLEJ KOMUNITI

EDISI 2020

Garis Panduan Pemindahan Kredit dan Pengecualian Kursus
Credit Transfer & Course Exemption (CTCE)
Politeknik dan Kolej Komuniti
Edisi 2020

Hak cipta terpelihara. Tiada mana-mana bahagian dalam penerbitan ini dibenarkan ditiru, diterbit semula atau disimpan dalam bentuk yang boleh dipergunakan lagi, atau dipindah dalam mana-mana cara, baik dengan cara elektronik, mekanikal, penggambaran semula, perakaman atau sebaliknya tanpa mendapat izin bertulis daripada Bahagian Kurikulum, Jabatan Pendidikan Politeknik dan Kolej Komuniti.

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Bahagian Kurikulum, Jabatan Pendidikan Politeknik dan Kolej Komuniti
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Tel : 03-88919000 Faks : 03-88919056

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Pihak berkepentingan perlu merujuk kepada Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi (2009-2017) Edisi Kedua susulan penambahbaikan edisi pertama.
Panduan juga perlu dibaca bersama-sama dasar-dasar baharu yang dikeluarkan Jabatan Pendidikan Tinggi(JPT), Malaysian Qualifications Agency(MQA) dan badan-badan akreditasi yang berkaitan.

BAHAGIAN 1 : PENGENALAN

1.0 PENDAHULUAN

1.1 Pemberian pindah kredit dan pengecualian kursus merupakan satu pengiktirafan terhadap kelayakan dan pengetahuan sedia ada seseorang pelajar apabila mula mengikuti sesuatu program pengajian baharu.

1.2 Ia memberi peluang kepada pelajar untuk memindahkan kredit dan dikecualikan daripada mengambil sesuatu kursus apabila mengikuti sesuatu pengajian berdasarkan kepada dasar-dasar yang telah ditetapkan oleh sesebuah Pemberi Pengajian Tinggi (PPT).

1.3 Garis Panduan Pemindahan Kredit dan Pengecualian Kursus *(Credit Transfer and Course Exemption, CTCE)* telah mula digunapakai oleh Politeknik pada Januari 2009. Ia merupakan salah satu elemen penting yang menyumbang kepada proses jaminan kualiti sesuatu program pengajian di Politeknik.

1.4 Panduan pindah kredit dan pengecualian kursus (CTCE) yang dikeluarkan pada Januari 2009 adalah untuk pelajar yang sedang berada dalam sistem pengajian di Politeknik.

1.5 Garis Panduan Pemindahan Kredit dan Pengecualian Kursus *(Credit Transfer and Course Exemption, CTCE)* Politeknik dan Kolej Komuniti Edisi 2020 adalah semakan dan pindaan ketiga daripada panduan terdahulu selaras dengan penambahbaikan dasar pindah kredit dan pemansuhan beberapa dasar pengecualian kursus oleh:

a. ***Malaysian Qualifications Agency* (MQA) berkuatkuasa mulai 19 Ogos 2016 rujukan:JPT.S(A).2000/ 016/015/05(9).**

b. *Engineering Technology Accreditation Council* (ETAC), *Board of Engineers* Malaysia (BEM) bagi **program pengajian kejuruteraan** di Politeknik dan Kolej Komuniti, rujukan ***ENGINEERING TECHNICIAN EDUCATION PROGRAMME ACCREDITATION STANDARD 2020.***

c. *Technology And Technical Accreditation Council* (TTAC), *Malaysia Board of Technologists* (MBOT) bagi **program pengajian teknologi** di Politeknik dan Kolej Komuniti, rujukan ***TECHNOLOGY AND TECHNICAL ACCREDITATION MANUAL 2019.***

2.0 NAMA DAN TARIKH BERKUATKUASA

Panduan ini dinamakan Garis Panduan Pemindahan Kredit dan Pengecualian Kursus *(Credit Transfer and Course Exemption, CTCE)* Politeknik dan Kolej Komuniti. Panduan ini **berkuatkuasa mulai Sesi Jun 2020** berdasarkan kelulusan Mesyuarat Pengurusan Akademik pada 13 Jun 2019 untuk digunakan oleh semua Politeknik dan Kolej Komuniti.

3.0 TUJUAN

Garis panduan ini bertujuan untuk:

3.1 Memaklumkan prosedur berkaitan pindah kredit dan pengecualian kursus yang perlu dipatuhi oleh Politeknik dan Kolej Komuniti.

3.2 Mewujudkan keseragaman dalam pelaksanaan pindah kredit dan pengecualian kursus di Politeknik dan Kolej Komuniti.

4.0 DEFINISI

4.1 Pindah Kredit *(Credit Transfer,CT)*

Pindah kredit adalah proses memindahkan kredit kursus yang telah diambil oleh pelajar dalam sesuatu program ke program yang lain yang membawa kepada penganugerahan kelayakan yang ditawarkan oleh institusi yang sama atau institusi yang berbeza. Proses ini membolehkan kredit bagi kursus tersebut dikira sebagai sebahagian daripada keperluan kredit untuk bergraduat bagi program tersebut. Pada asasnya, kursus yang boleh dipindah kredit adalah kursus yang setara dengan kursus di program yang sedang diikuti.

4.2 Pengecualian Kursus *(Course Exemption,CE)*

Pengecualian kursus adalah proses mengecualikan seseorang pelajar daripada mengambil kursus dalam program yang diikuti atas sebab-sebab tertentu. Pengecualian ini tidak menyebabkan pelajar mendapat kredit bagi kursus yang dikecualikan. Oleh itu, pelajar perlu menggantikan kursus yang dikecualikan dengan kursus yang lain bagi mencukupkan keperluan kredit untuk bergraduat.

Perbezaan antara Pindah Kredit dengan Pengecualian Kursus

Pindah Kredit	Pengecualian Kursus
Proses pindah kredit membolehkan **kredit bagi kursus tersebut dikira sebagai sebahagian daripada keperluan kredit untuk bergraduat** bagi program yang sedang diikuti.	Pengecualian kursus **tidak membawa sebarang nilai kredit.** Pelajar perlu mengambil kursus lain bagi mencukupkan keperluan kredit untuk bergraduat.

BAHAGIAN 2 : PEMINDAHAN KREDIT

5.0 DASAR PINDAH KREDIT

5.1 Pindah kredit boleh dilakukan dalam dua (2) kategori seperti berikut:

a. **Mendatar *(Horizontal)***

Pindah kredit daripada program pengajian di tahap kelayakan yang sama seperti daripada sijil ke sijil, diploma ke diploma dan ijazah sarjana muda ke ijazah sarjana muda.

b. **Menegak *(Vertical)***

Pindah kredit daripada program pengajian peringkat rendah ke peringkat yang lebih tinggi.

5.2 Pindah kredit adalah dibenarkan bagi kes-kes berikut :

a. **Mendatar *(Horizontal)***

Dasar pindah kredit bagi kategori mendatar *(horizontal)* bagi program pengajian yang mendapat akreditasi di bawah MQA, ETAC dan TTAC adalah seperti berikut :

i. **Pelajar sedang mengikuti program dalam sistem Politeknik/Kolej Komuniti**

- Pelajar bertukar program pengajian yang berbeza di Politeknik/Kolej Komuniti
- Pelajar yang berpindah Politeknik/Kolej Komuniti mengikuti program pengajian yang sama
- **Tiada had pindah kredit** bagi program pengajian di bawah MQA dengan mematuhi syarat-syarat umum pindah kredit.

ii. **Pelajar sedang mengikuti program di PPT lain**

- Pelajar daripada PPT lain yang menyambung pengajian di Politeknik/Kolej Komuniti pada peringkat dan program yang sama; atau
- Pelajar daripada PPT lain menyambung pengajian di Politeknik/Kolej Komuniti pada peringkat yang sama tetapi program yang berlainan
- **Pindah kredit bagi 2 situasi di atas dibenarkan dan ia tertakluk kepada tempoh bermastautin pelajar *(residential year)***
- Tempoh pemastautin *(residential year)* di PPT yang menganugerahkan kelayakan mengikut peringkat adalah seperti berikut:
  a) Ijazah Sarjana Muda : 1 tahun
  b) Diploma : 1 semester
  c) Sijil : 1 semester
- Tempoh ini mengambilkira kelaziman *currency of knowledge* bagi sesuatu program adalah 5 tahun.
  (Rujukan : Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi 2009 – 2017, muka surat 94)

iii. Syarat tambahan bagi **program-program pengajian kejuruteraan yang mendapat akreditasi dari ETAC, pindah kredit maksimum 50% daripada jumlah kredit program** yang diikuti dibenarkan bagi pemindahan kredit secara mendatar. Dasar ini tertakluk kepada semua situasi pemindahan mendatar.
(Rujukan : *Engineering Technician Education Programme Accreditation Standard 2020, page* G-17)

iv. Kursus dalam kelompok U1 Matapelajaran Pengajian Umum (MPU) dibenarkan untuk dipindah kredit secara mendatar secara berkelompok *(package)*. Pencapaian hasil pembelajaran adalah dinilai berdasarkan hasil pembelajaran berkelompok dan bukan mengikut kursus. Pelajar yang telah melengkapkan semua kursus Kelompok U1 MPU di PPT terdahulu dianggap telah mencapai hasil pembelajaran berkelompok bagi kursus Kelompok U1 dan seterusnya layak memindah kredit ke IPT lain tanpa melihat perbezaan kredit kursus di PPT terdahulu dan PPT baharu. Pelaksanaan dasar pindah kredit adalah berkuatkuasa bagi semua pelajar yang masih dalam sesi pengajian.

(Rujukan : Mesyuarat Kajian Semula Dasar – Dasar Berkaitan Jaminan Kualiti (MKSDJK) KPM-MQA Bil 3/2019 bertarikh 10 Disember 2019)

v. Kursus Matapelajaran Pengajian Umum (MPU) kelompok U2, U3 dan U4 dibenarkan untuk dipindah kredit secara mendatar dengan mematuhi syarat-syarat umum pindah kredit.

b. **Menegak *(Vertical)***

Dasar pindah kredit bagi kategori menegak *(vertical)* program pengajian yang mendapat akreditasi di bawah MQA, ETAC dan TTAC adalah seperti berikut :

i. **Pemindahan Kredit daripada Sijil ke Diploma**

Pelajar lulusan sijil PPT lain yang menyambung pengajian ke peringkat Diploma Politeknik/Kolej Komuniti. Had maksimum jumlah pindah kredit yang dibenarkan adalah 30% daripada jumlah kredit program yang diikuti di Politeknik/Kolej Komuniti yang berkuatkuasa pada 23 Mei 2016. (Rujukan : Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi 2009 – 2017, muka surat 92)

ii. **Pemindahan Kredit daripada Diploma ke Sarjana Muda**

- Pelajar lepasan Diploma Politeknik/Kolej Komuniti/IPT lain yang menyambung pengajian ke peringkat Ijazah Sarjana Muda Politeknik. Pindah kredit dibenarkan sehingga maksimum 30% (lebih kurang satu tahun pengajian) daripada jumlah kredit program yang akan diikuti di Politeknik. (Rujukan : Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi 2009 – 2017, muka surat 93)
- Pindah kredit untuk kelayakan Diploma (Tahap 4, MQF) ke Sarjana Muda (Tahap 6, MQF) secara vertical dengan pindahan maksimum sebanyak 50% daripada jumlah kredit program yang diikuti dengan ketetapan berikut :

Peratus Pindah Kredit (%)	Gred Minimum Kursus
1 hingga 30	Gred C
31 hingga 50	Gred B

iii. **Pemindahan Kredit daripada Diploma Lanjutan *(Advanced Diploma)* ke Sarjana Muda**

Pelajar yang berkelayakan Diploma Lanjutan yang turut memiliki Diploma boleh dipertimbangkan pindah kredit sehingga maksimum dua (2) tahun pengajian program peringkat Ijazah Sarjana Muda. Oleh itu, pelajar akan mengikuti tahun ketiga program Ijazah Sarjana Muda. (Rujukan : Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi 2009–2017, muka surat 93)

5.3 Pindah kredit tidak dibenarkan bagi kes-kes berikut :

a. **Mendatar *(Horizontal)***

Pelajar yang diberhentikan daripada pengajian **atas sebab kegagalan akademik** dan kemudiannya menyambung semula pengajian dalam program yang lain. (Rujukan : Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi 2009 – 2017, muka surat 94)

b. **Menegak *(Vertical)***

i. Daripada kelayakan yang lebih tinggi ke program di peringkat yang lebih rendah

ii. **Kursus MPW/MPU tidak dibenarkan untuk pindah kredit**. (Rujukan : Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi 2009 – 2017, muka surat 94)

iii. **Kursus Latihan Industri**

5.4 Bagi kes Perkara 5.2, pelajar tertakluk kepada syarat umum pindah kredit dalam Perkara 6.0 dan syarat tempoh pemastautin pelajar. Tempoh pemastautin bermaksud pelajar perlu mengikuti pengajian di Politeknik/Kolej Komuniti selama sekurang-kurangnya satu semester bagi program peringkat Sijil atau Diploma dan satu (1) tahun bagi program peringkat Ijazah Sarjana Muda.

6.0 SYARAT UMUM PINDAH KREDIT

6.1 Pindah kredit hendaklah berasaskan kepada pemetaan kandungan antara kursus-kursus yang berkenaan.

6.2 Bagi kes-kes di perkara 5.2 syarat-syarat umum yang berikut perlulah dipatuhi:

a. **Gred lulus minimum** kursus terlibat yang boleh dipindah kredit ialah **C**;

b. **Kesetaraan** antara kandungan kursus **mestilah tidak kurang** daripada **80%**;

c. **Nilai kredit kursus :**

MQA / ETAC / TTAC : Nilai kredit kursus bagi program terdahulu mestilah **sama atau lebih daripada nilai kredit kursus** bagi program yang diikuti di PPT penerima; dan

d. **Kursus yang dimohon untuk dipindahkan kredit** mestilah daripada program pengajian yang **telah mendapat Perakuan Akreditasi** daripada **MQA.**

7.0 KAEDAH PELAKSANAAN PEMINDAHAN KREDIT

7.1 Pelaksanaan pemindahan kredit adalah berdasarkan permohonan pelajar dan kelulusan Jawatankuasa Pemindahan Kredit dan Pengecualian Kursus di peringkat Politeknik/Kolej Komuniti.

7.2 Bagi kes-kes 5.2a, segala keputusan peperiksaan yang diperolehi daripada pengajian terdahulu adalah dikekalkan. Keputusan kursus yang berkenaan diguna pakai dalam pengiraan Purata Nilaian Mata (PNM) dan Himpunan Purata Nilaian Mata (HPNM).

7.3 Bagi kes-kes 5.2b, kaedah berikut perlu dipatuhi:

a. Keutamaan pindah kredit diberikan kepada kursus daripada tahap rendah terlebih dahulu
b. Nilai kredit bagi kursus yang diberi pemindahan kredit diambil kira bagi memenuhi keperluan jumlah kredit untuk bergraduat.

7.4 **Pindah Kredit Dengan Gred**

Pindah kredit secara mendatar *(horizontal)* bagi pelajar yang masih dalam pengajian, kredit diambilkira dalam kredit bergraduat pelajar dan gred kursus diambilkira dalam pengiraan Purata Nilaian Mata (PNM) dan Himpunan Purata Nilaian Mata (HPNM).

Contoh :

Pelajar yang sedang mengikuti Diploma A bertukar ke Diploma B pada semester kedua. Maka proses pindah kredit pelajar tersebut akan mengambil kira gred kursus dari Diploma A dalam pengiraan PNM dan HPNM pelajar di Diploma B.

7.5 Pindah Kredit Tanpa Gred (Pengecualian Kredit)

Pindah kredit secara menegak *(vertical)* atau mendatar *(horizontal)* bagi pelajar yang telah tamat pengajian atau telah mencapai tahap kompetensi dalam kursus berkenaan, kredit kursus yang dipindahkan diambilkira dalam kredit bergraduat tetapi gred kursus tidak diambil kira dalam pengiraan PNM dan HPNM pelajar.

Contoh 1:

Pelajar lepasan sijil menyambung pengajian ke peringkat diploma dan membuat pindah kredit bagi kursus-kursus yang bersesuaian. Maka kredit bagi kursus yang pernah diikuti di peringkat sijil akan diambil kira dalam pengiraan kredit bergraduat pelajar. Namun, gred kursus tidak akan diambil kira dalam pengiraan PNM dan HPNM pelajar.

Contoh 2:

Pelajar yang telah tamat program Diploma A dan kemudian ingin mengikuti program Diploma B. Bagi situasi ini yang mana pelajar telah memiliki kelayakan di peringkat yang sama, maka pindah kredit tidak akan mengambil kira gred kursus dalam pengiraan PNM dan HPNM pelajar di Diploma B. Hanya kredit yang akan diambil kira dalam pengiraan PNM dan HPNM pelajar.

Contoh 3:

Pindah kredit berdasarkan pengalaman melalui APEL Credit (C) tidak melibatkan gred. Oleh yang demikian, hanya kredit yang akan diambil kira.

7.6 Jika seorang pelajar berhenti daripada pengajian atas sebab-sebab tertentu seperti masalah kewangan atau kesihatan (bukan atas sebab kegagalan akademik) dan ingin menyambung pengajian dalam program yang lain di peringkat yang sama, pindahan kredit bagi situasi ini boleh dipertimbangkan dengan tertakluk kepada syarat pindah kredit. Lazimnya, pengetahuan semasa *(current knowledge)* bagi sesuatu program adalah lima tahun.

Dalam hal ini, terdapat dua keadaan berbeza seperti berikut:

a. PPT yang sama: Sekiranya pelajar ingin menyambung pengajiannya di PPT yang sama, tiada had pindah kredit dan tertakluk kepada syarat pemindahan kredit.

b. PPT yang berbeza: Sekiranya pelajar tersebut menyambung pengajian daripada PPT lain, maka pemindahan kredit adalah tertakluk kepada syarat pemastautin pelajar *(residential year)* seperti berikut:

   i. Ijazah Sarjana Muda : 1 tahun
   ii. Diploma : 1 semester
   iii. Sijil : 1 semester

BAHAGIAN 3 : PENGECUALIAN KURSUS

8.0 DASAR PENGECUALIAN KURSUS

Berdasarkan Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi 2009– 2017, muka surat 99-100, berikut ialah ketetapan berkenaan dengan pengecualian kursus:

8.1 Pengecualian kursus perlu dilakukan berdasarkan kepada kesetaraan kandungan kursus yang dimohon dengan pembuktian pengetahuan dan kemahiran pelajar.

8.2 Pengecualian kursus **TIDAK** akan menyebabkan pelajar mendapat kredit bagi kursus yang dikecualikan.

8.3 Pelajar perlu mengambil kursus lain bagi menggantikan kursus berkenaan sekiranya pengecualian kursus tersebut menyebabkan keperluan jumlah kredit untuk bergraduat tidak mencukupi.

8.4 Penambahan kursus ke dalam sesuatu program pengajian bagi membolehkan pelajar yang mendapat pengecualian kursus memenuhi keperluan kredit untuk bergraduat adalah dibenarkan dengan syarat-syarat berikut :

a. Kursus yang ditambah mestilah daripada kursus yang sama tahap dengan program yang ditawarkan.

b. Sekiranya program yang terlibat adalah program kerjasama, maka kursus yang ditambah boleh diambil sama ada daripada program-program yang ditawarkan rakan kerjasama tersebut atau daripada program-program kerjasama yang lain.

c. Penambahan kursus kokurikulum juga dibenarkan.

d. Sekiranya kursus tambahan ini diambil daripada program yang telah mendapat akreditasi sementara atau akreditasi penuh, maka kursus tersebut tidak perlu dinilai oleh MQA. Walau bagaimanapun, sekiranya PPT menawarkan kursus baharu, maka kursus tersebut perlu dinilai oleh MQA.

BAHAGIAN 4 : PROSEDUR DAN PERANAN

9.0 PROSEDUR PERMOHONAN PINDAH KREDIT DAN PENGECUALIAN KURSUS OLEH PELAJAR

9.1 Pelajar telah dimaklumkan oleh Politeknik/Kolej Komuniti mengenai proses permohonan dan syarat-syarat yang berkaitan dengan pindah kredit dan pengecualian kursus.

9.2 Permohonan hendaklah dibuat dalam tempoh TIGA (3) Minggu Pertama sesi pengajian.

9.3 Pelajar seharusnya mengemukakan dokumen seperti berikut:

a. Borang Permohonan Pemindahan Kredit Dan Pengecualian Kursus adalah seperti di **Lampiran 1.**

b. Slip keputusan peperiksaan terdahulu yang telah disahkan.

c. Salinan pengesahan akreditasi program terdahulu. Status akreditasi program terdahulu boleh disemak melalui portal rasmi *Malaysian Qualification Register* (MQR) di laman sesawang https://www2.mqa.gov.my/mqr/ .

d. Maklumat kursus yang dimohon bagi tujuan pemetaan:
Maklumat kursus tersebut mestilah kursus yang digunapakai pada tahun semasa pelajar bergraduat. Urusan mendapatkan maklumat kursus tersebut adalah **tanggungjawab pelajar**.

e. Bagi program di Politeknik dan Kolej Komuniti dokumen tersebut boleh dimohon melalui Unit Jaminan Kualiti Politeknik/Kolej Komuniti.

9.4 Pelajar perlu mengemukakan permohonan pindah kredit dan pengecualian kursus kepada pihak Politeknik/Kolej Komuniti melalui Pegawai yang dilantik oleh Jabatan.

9.5 Permohonan yang tidak lengkap akan ditolak oleh Politeknik/Kolej Komuniti.

10.0 PROSEDUR PENGURUSAN POLITEKNIK DAN KOLEJ KOMUNITI

10.1 Jawatankuasa Pemindahan Kredit dan Pengecualian Kursus di peringkat Induk dan Jabatan Politeknik/Kolej Komuniti perlu ditubuhkan bagi meneliti dan membuat keputusan terhadap permohonan pemindahan kredit dan pengecualian kursus yang dikemukakan oleh pelajar.

10.2 Keanggotaan **Jawatankuasa Induk Pemindahan Kredit dan Pengecualian Kursus yang dilantik oleh Pengarah :**

i. Timbalan Pengarah Akademik (Pengerusi)
ii. Pegawai Peperiksaan (Setiausaha)
iii. Ketua-ketua Jabatan Akademik/Ketua Program
iv. Ahli-ahli yang berkaitan

10.3 **Jawatankuasa Pemindahan Kredit dan Pengecualian Kursus di peringkat Jabatan** dianggotai oleh :

i. Ketua Jabatan/Ketua Program
ii. Pegawai Kualiti Jabatan
iii. Penasihat Akademik
iv. Ahli-ahli yang berkaitan

10.4 **Permohonan pindah kredit dan pengecualian kursus** oleh pelajar hanya boleh dilakukan **sekali sahaja** sepanjang pengajian di Politeknik/Kolej Komuniti.

10.5 **Pemetaan 80% kesetaraan kandungan kursus** adalah tanggungjawab **Jawatankuasa Pemindahan Kredit dan Pengecualian Kursus** di peringkat **Jabatan** Politeknik/Kolej Komuniti. Contoh borang dan tatacara pemetaan kandungan kursus boleh dirujuk dalam **Lampiran 2.**

10.6 Hanya keputusan pemetaan yang disokong oleh Jawatankuasa Pemindahan Kredit dan Pengecualian Kursus di peringkat Jabatan Politeknik/Kolej Komuniti akan diangkat untuk **kelulusan Jawatankuasa Induk Pemindahan Kredit Dan Pengecualian Kursus Politeknik/Kolej Komuniti**.

10.7 Keputusan kelulusan dari Jawatankuasa Induk Pemindahan Kredit Dan Pengecualian Kursus Politeknik/Kolej Komuniti perlu diserahkan kepada jabatan/unit yang berkaitan di Politeknik/Kolej Komuniti dan Bahagian Peperiksaan dan Penilaian, JPPKK bagi tujuan penyelarasan.

10.8 Pelajar yang memohon pengecualian kursus mesti membuktikan tahap pengetahuan mencapai sekurang-kurangnya 80% daripada keperluan kursus. Jawatankuasa berhak mengadakan ujian atau temuduga untuk menentukan sama ada pelajar layak diberikan pengecualian kursus.

10.9 Keputusan permohonan pemindahan kredit dan pengecualian kursus hendaklah dimaklumkan kepada pelajar selewat-lewatnya pada minggu keenam sesi pengajian.

10.10 Keputusan yang ditetapkan oleh **Jawatankuasa Induk Pemindahan Kredit Dan Pengecualian Kursus Politeknik/Kolej Komuniti** adalah **muktamad**.

10.11 Carta Alir Permohonan Pemindahan Kredit Dan Pengecualian Kursus boleh dirujuk dalam **Lampiran 3.**

10.12 Rumusan Panduan Pemindahan Kredit dan Pengecualian Kursus *(Credit Transfer and Course Exemption, CTCE)* Politeknik dan Kolej Komuniti boleh di rujuk dalam **Lampiran 4**.

LAMPIRAN

LAMPIRAN 1 : CONTOH BORANG PERMOHONAN PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS

(LOGO POLITEKNIK)

BORANG PERMOHONAN PEMINDAHAN KREDIT/PENGECUALIAN KURSUS

No : _____

SESI PENGAJIAN : _____

Nama Pelajar : .....

No.Kad Pengenalan : ☐☐☐☐☐☐-☐☐-☐☐☐☐

No.Pendaftaran : ☐☐☐☐☐☐☐☐☐☐ Kursus : ☐☐☐ Semester :_____ Seksyen :

No.Telefon : ☐☐☐☐☐☐☐☐☐☐ Program : .....

	LELAKI
	PEREMPUAN

Jabatan :

JKA	JKE	JKM	JP

Alamat surat menyurat atau tetap : .....
.....
.....

Sila baca Garis Panduan Pemindahan Kredit dan Pengecualian Kursus (CTCE) sebelum mengisi borang ini. Sila isikan ruang dibawah ini dengan terang dan betul. Pastikan anda menulis kod dan nama kursus yang berkenaan setelah berbincang dengan PA.

Bil	Kursus Politeknik Yang Dipohon CE / CE #			Modul / SPM / Politeknik / IPT Terdahulu Yang Setara				Keputusan Permohonan		
	Kod Kursus	Nama Kursus	Jam Kredit	Kod Kursus	Nama Kursus	Jam Kredit	Gred	% Kesetaraan	Disokong / Tidak Disokong	Tandatangan Ketua Jabatan

Saya mengaku bahawa keterangan yang diberi dalam borang ini adalah betul dan benar : Tandatangan pelajar : Tarikh :	Telah dibawa berbincang dengan PA Tandatangan PA : Tarikh :	Keputusan dibuat oleh Jawatankuasa Pemindahan Kredit dan Pengecualian Kursus Politeknik xxx (Nama Politeknik) **DILULUSKAN / TIDAK DILULUSKAN** Tandatangan Pengerusi dan Cop Rasmi : Tarikh :

•Tandakan √ bagi yang berkenaan sahaja. # Potong yang **TIDAK** berkenaan

LAMPIRAN 2 : BORANG PEMETAAN PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS

Bahagian 1 : Status Syarat Pemetaan dan Senarai Kursus Yang Dipohon Untuk Pemetaan

		Institusi terdahulu			Institusi sekarang	
1	Nama Institusi					
2	Nama Program Pengajian					
3	Kod Program Pengajian					
4	Akreditasi Program Pengajian					
	i) Status akreditasi					
	ii) Tarikh akreditasi					
	iii) Badan pengakreditasian					
5	Senarai Kursus Yang Dipohon Untuk Pemetaan Dan Kredit (Mohon dilampirkan struktur program daripada kedua-dua institusi)	Nama Kursus	Nilai Kredit	Gred Kredit	Nama Kursus	Nilai Kredit
	i)					
	ii)					
	iii)					
	iv)					
	v)					
	vi)					
	vii)					
	vii)					

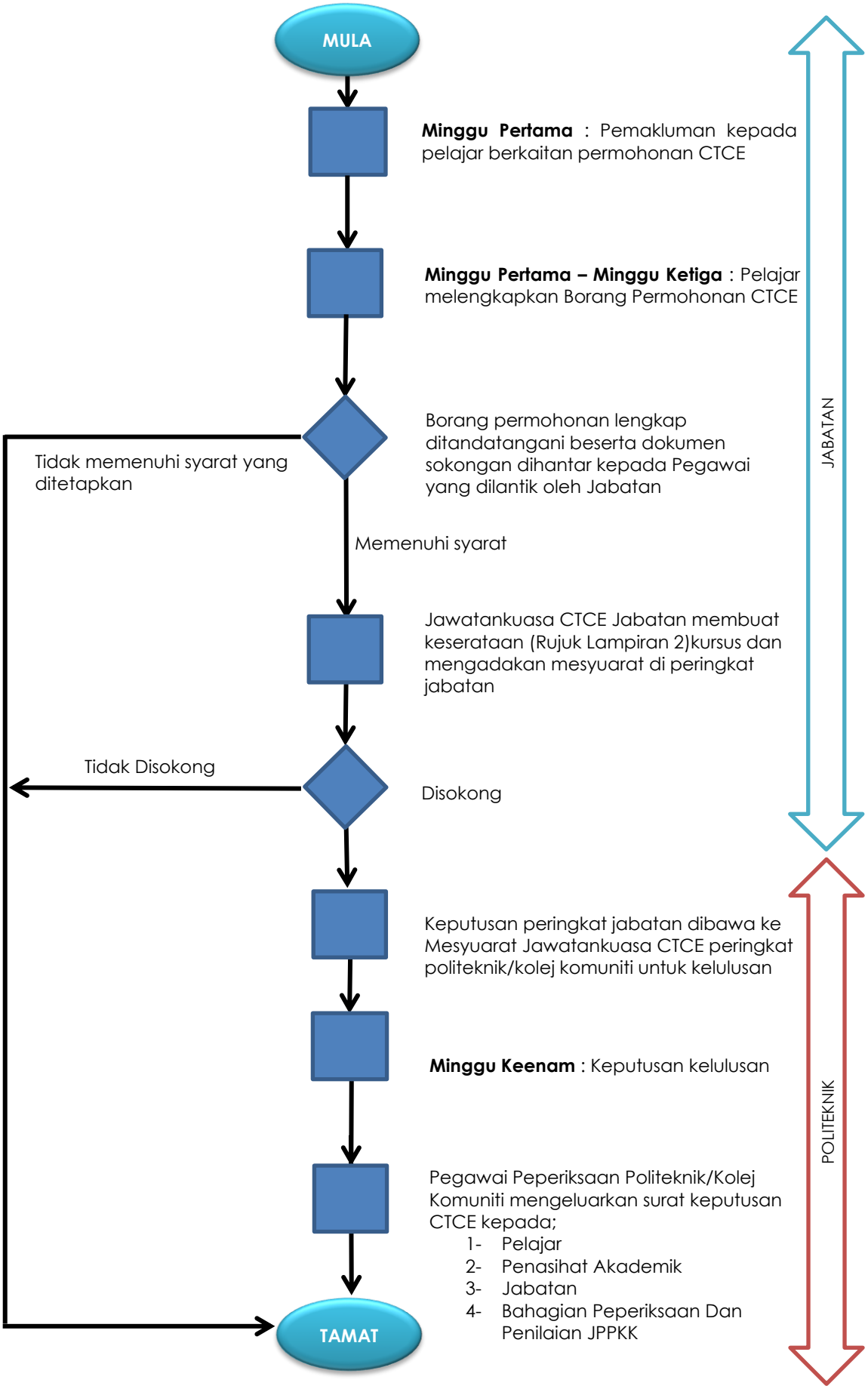
Bahagian 2 : Jadual Pemetaan

Nama dan Kredit		Institusi Terdahulu		Institusi Sekarang		Kesetaraan		Justifikasi
						Setara	Tidak Setara	
i)		xxxx	3 kredit	ddddd	3 kredit			
ii)		yyyy	2 kredit					
iii)								
Jumlah kredit			5 kredit		3 kredit			
Jumlah Course Learning Outcome (CLO)		6		2				
Aras Pembelajaran dalam CLO (Taxonomy)	1	C3		C3				
	2	C2						
	3							
	4							
	5							
	6							

Pemetaan Kandungan Kurikulum							
	Topik & Sub Topik			Topik & Sub Topik		Peratus Kesetaraan	Justifikasi
		Topik 1			Topik 1		
	1.10	xxxx			yyy		
	1.20	xxxx					
	1.30	xxxx					
	1.40	xxxx					
		Jumlah	4		Jumlah	1	25%
		Topik 2			Topik 2		
	2.10	bbb			bbb		
	2.20	bbb			bbb		
	2.30	bbb			ss		
	2.40						
	2.50						
	2.60						
		Jumlah	6		Jumlah	2	33%
		Jumlah	5		Jumlah	2	40%
		Jumlah	4		Jumlah	4	100%
		Jumlah	6		Jumlah	2	33%
		Jumlah	9		Jumlah	5	56%
		Jumlah Kesetaraan Kursus					47.87%

Maka dengan ini, adalah disyorkan kepada Jawatankuasa Pemindahan Kredit Dan Pengecualian Kursus supaya **MELULUSKAN / TIDAK MELULUSKAN** pindah kredit dan pengecualian kursus dari **CPB1022 : Bahan dan Teknologi Binaan (Kolej Komuniti) ke SPB1032 : Bahan dan Binaan Bangunan** bagi **program pengajian DPB: Diploma Kejuruteraan Perkhidmatan Bangunan.**

LAMPIRAN 3 : CARTA ALIR PERMOHONAN PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS



LAMPIRAN 4 : RUMUSAN PANDUAN PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS

DASAR-DASAR PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS	MQA	ETAC/TTAC
Pemindahan Kredit boleh dilakukan dalam dua kategori seperti berikut : a. Menegak b. Mendatar		
a) Menegak (*Vertical*) Pemindahan kredit kepada peringkat yang lebih tinggi. Dasar-dasar yang sama adalah digunapakai oleh ketiga-tiga badan akreditasi.	**Situasi yang berkaitan dengan pindah kredit secara menegak:**	
	1. Pemindahan kredit daripada sijil ke diploma: Dibenarkan dengan pindahan maksima 30% daripada jumlah kredit program yang diikuti.	
	2. Pemindahan kredit daripada diploma ke ijazah : Dibenarkan dengan pindahan maksima 30% daripada jumlah kredit program yang diikuti.	
	3. Pemindahan kredit daripada diploma lanjutan ke Ijazah: Pelajar yang berkelayakan diploma lanjutan (yang turut memiliki diploma) boleh dipertimbangkan pemindahan kredit sehingga maksimum dua tahun pengajian peringkat sarjana muda (pelajar akan mengikuti tahun ketiga program sarjana muda).	
	4. Pemindahan kredit daripada kelayakan yang lebih tinggi (contoh sarjana muda) ke program di peringkat yang lebih rendah (contoh diploma): Pindah kredit tidak dibenarkan	

DASAR-DASAR PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS	MQA	ETAC/TTAC
		5. Pemindahan kredit bagi program yang telah ada kesinambungan dari peringkat rendah ke peringkat yang lebih tinggi Sekiranya Pemberi Pengajian Tinggi (PPT) telah berkolaborasi secara formal di dalam merancang kurikulum bagi kedua-dua program dengan memastikan terdapatnya kesinambungan ke peringkat yang lebih tinggi maka pemindahan kredit maksimum yang dibenarkan adalah 50% daripada jumlah kredit program yang diikuti. (Rujukan Manual ETAC 2020, ms 17, TTAC, m/s 26)

DASAR-DASAR PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS	MQA	ETAC/TTAC
Pemindahan Kredit boleh dilakukan dalam dua kategori seperti berikut : a. Menegak b. Mendatar		
b) Mendatar *(Horizontal)* Pemindahan kredit daripada program di tahap yang sama seperti daripada sijil ke sijil/diploma ke diploma/sarjana muda ke sarjana muda. Dasar-dasar berkaitan pemindahan kredit secara mendatar adalah berbeza bagi ketiga-tiga badan akreditasi tersebut.	i) Program pengajian di bawah seliaan MQA menetapkan dasar yang berbeza mengikut situasi tertentu dan bergantung kepada *residential year.* **i) *Residential year*** Membawa maksud tempoh bermastautin pelajar di mana MQA menetapkan tempoh seperti berikut: 1) Ijazah Sarjana muda – 1 tahun 2) Diploma – 1 semester 3) Sijil – 1 semester Tempoh ini mengambil kira kelaziman *currency of knowledge* bagi sesuatu program adalah 5 tahun. ii) Situasi yang berkaitan dengan pemindahan secara mendatar adalah seperti berikut :	Program pengajian di bawah akreditasi ETAC **pemindahan kredit maksimum 50% daripada jumlah kredit program yang diikuti** dibenarkan bagi pemindahan kredit secara mendatar. Dasar ini tertakluk kepada semua jenis situasi pemindahan mendatar. TTAC juga telah menetapkan dasar mengikut situasi dan bergantung kepada ***residential year*** sebagai mana MQA, iaitu: 1) Ijazah Sarjana muda – 1 tahun 2) Diploma – 1 semester 3) Sijil – 1 semester Tempoh ini mengambil kira kelaziman *currency of knowledge* bagi sesuatu program adalah 5 tahun.

	a) Pelajar telah memiliki kelayakan dan ingin melanjutkan pelajaran kali kedua dalam peringkat yang sama dengan kelayakan yang dimiliki. • Pemindahan kredit dibenarkan • Tiada had pindah kredit jika pelajar di PPT yang sama • Bagi pelajar yang melanjutkan pengajian untuk kali ke dua di PPT yang berbeza pindah kredit adalah tertakluk kepada tempoh bermastautin pelajar (residential year) • Kuatkuasa mulai 23 Mei 2016 **b) Pelajar sedang mengikuti program dan ingin menukar ke program lain dalam bidang yang sama dengan program yang sedang diikuti :** • Pemindahan kredit dibenarkan. Sekiranya program tersebut diambil di PPT yang sama, tiada had pemindahan kredit dan ia tertakluk kepada syarat pindah kredit. • Sekiranya program yang ingin diikuti di PPT adalah berbeza, pindah kredit adalah tertakluk kepada syarat tempoh bermastautin *(residential year)* pelajar	

	c) Pelajar gagal program dan ingin melanjutkan pengajian dalam program lain diperingkat yang sama : • Pemindahan kredit (termasuk MPW / MPU) tidak dibenarkan **d) Pelajar berhenti belajar daripada pengajian dan kemudiannya ingin menyambung semula pengajian tetapi di dalam program lain di peringkat sama :** • Pemindahan kredit boleh dipertimbangkan • Sekiranya program tersebut diambil di PPT yang sama, tiada had pindah kredit tertakluk kepada syarat tempoh bermastautin pelajar *(residential year)* • Sekiranya program yang ingin diikuti di PPT yang berbeza, pemindahan kredit tertakluk kepada syarat tempoh bermastautin pelajar *(residential year)*	

	e) Pelajar sedang mengikuti sesuatu program dan dalam masa yang sama mengambil beberapa kursus di PPT yang lain. (contoh; program mobiliti atau program pertukaran pelajar) : • Pemindahan kredit adalah dibenarkan tertakluk kepada tempoh bermastautin pelajar *(residential year)* di PPT yang menganugerahkan kelayakan. • Kuatkuasa mulai 19 September 2016 f) Kursus dalam kelompok U1 Matapelajaran Pengajian Umum (MPU) dibenarkan untuk dipindah kredit secara mendatar secara berkelompok *(package)*.Pencapaian hasil pembelajaranadalah dinilai berdasarkan hasil pembelajaran berkelompok dan bukan mengikut kursus. Pelajar yang telah melengkapkan semua kursus Kelompok U1 MPU di PPT terdahulu dianggap telah mencapai hasil pembelajaran berkelompok bagi kursus Kelompok U1 dan seterusnya layak memindah kredit ke IPT lain tanpa melihat perbezaan kredit kursus di PPT terdahulu dan PPT baharu. Pelaksanaan dasar pindah kredit adalah berkuatkuasa bagi semua pelajar yang masih dalam sesi pengajian. (Rujukan : Mesyuarat Kajian Semula Dasar – Dasar Berkaitan Jaminan Kualiti (MKSDJK) KPM-MQA Bil 3/2019 bertarikh 10 Disember 2019)	

DASAR-DASAR PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS	MQA
Pemindahan kredit juga boleh dilakukan dengan gred atau tanpa gred. Dasar ini adalah tertakluk kepada polisi sedia ada bagi ketiga-tiga badan akreditasi	
1) Pindah kredit dengan gred Pindah Kredit secara mendatar (*horizontal*) bagi pelajar yang berada dalam sistem (pelajar yang masih dalam pengajian). Kredit dikira dalam kredit bergraduat pelajar dan gred kursus diambil kira dalam pengiraan Purata Nilai Mata (PNM) dan Purata Nilai Mata Kumulatif (HPNM).	**Situasi yang berkaitan dengan pindah kredit dengan gred :** a) Pelajar yang sedang mengikuti Diploma A bertukar ke Diploma B pada semester kedua (di politeknik yang sama atau bertukar politeknik). Maka proses pindah kredit pelajar tersebut akan mengambilkira gred kursus dari Diploma A dalam pengiraan (PNM) dan (HPNM) untuk Diploma B. b) Pelajar yang bertukar Politeknik / Kolej Komuniti dengan mengikuti program yang sama. Maka proses pindah kredit pelajar tersebut akan mengambilkira gred kursus dalam pengiraan (PNM) dan (HPNM). c) Pelajar sedang mengikuti suatu program dan dalam masa yang sama mengambil beberapa kursus di PPT yang lain (program pertukaran pelajar). d) Pelajar dari PPT lain menyambung pengajian ke Politeknik / Kolej Komuniti pada peringkat dan program yang sama. e) Pelajar dari PPT lain menyambung pengajian ke Politeknik / Kolej Komuniti pada peringkat yang sama tetapi program yang berlainan. f) Pindahan kredit boleh dipertimbangkan bagi pelajar Politeknik / Kolej Komuniti yang berhenti dari pengajian bukan atas sebab kegagalan akademik dan kemudiannya menyambung semula pengajian dalam program yang sama atau program yang lain di peringkat yang sama. Tiada had pindah kredit dibenarkan.

2) Pindah kredit tanpa gred Pindah kredit secara menegak (*vertical)* atau mendatar (*horizontal)* bagi pelajar yang telah keluar dari sistem (pelajar yang telah tamat pengajian) atau telah mencapai tahap kompetensi dalam kursus berkenaan. Kredit kursus yang dipindahkan diambilkira dalam kredit bergraduat tetapi gred kursus yang dipindahkan tidak diambilkira dalam pengiraan PNG dan PNGK pelajar.	Contoh-contoh situasi yang berkaitan dengan pindah kredit tanpa gred : a) Pelajar lepasan Diploma Lanjutan Politeknik atau PPT lain yang menyambung pengajian ke peringkat Ijazah Sarjana Muda Politeknik. Pindahan kredit dibenarkan sehingga maksimum dua tahun pengajian program yang akan diikuti. b) Pelajar lepasan Diploma Politeknik atau PPT lain yang menyambung pengajian ke peringkat Ijazah Sarjana Muda Politeknik. Had maksimum kredit yang dipindahkan adalah 30% daripada jumlah kredit program yang akan diikuti. c) Pelajar lepasan Sijil yang menyambung pengajian ke peringkat Diploma dan membuat pindah kredit bagi kursus-kursus bersesuaian. Maka kredit bagi kursus yang pernah diikuti di peringkat Sijil akan diambil kira dalam pengiraan kredit bergraduat pelajar. Namun, gred kursus tidak akan diambil kira dalam pengiraan PNM dan HPNM pelajar daripada kelayakan Sijil ke Diploma. Had maksimum kredit yang dipindahkan adalah 30% daripada jumlah kredit program yang akan diikuti. d) Pelajar yang telah tamat program Diploma A dan kemudian ingin mengikuti program Diploma B. Bagi situasi ini, yang mana pelajar telah memiliki kelayakan di peringkat yang sama, maka pindah kredit tidak akan mengambilkira gred kursus dalam pengiraan PNM dan HPNM pelajar untuk Diploma B. e) Pemindahan kredit yang berdasarkan pengalaman melalui APEL, kredit tidak melibatkan gred. Oleh yang demikian, hanya kredit yang akan diambil kira.

<table>
<tr><th>DASAR-DASAR PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS</th><th>MQA</th><th>ETAC/TTAC</th></tr>
<tr><td colspan="3">Syarat–syarat umum pindah gred dan tanpa gred</td></tr>
<tr><td rowspan="4">Bagi tujuan pindah kredit dengan gred dan tanpa gred, ketiga-tiga badan akreditasi menetapkan syarat yang sama. Terdapat juga beberapa kes yang menyebabkan pindah kredit tidak dibenarkan.</td><td colspan="2">Gred lulus minimum kursus terlibat yang boleh dipindah kredit adalah gred C</td></tr>
<tr><td colspan="2">Nilai kredit : sama atau lebih dengan nilai kursus bagi program di PPT penerima</td></tr>
<tr><td colspan="2">Kesetaraan antara kandungan kursus mestilah tidak kurang daripada 80%</td></tr>
<tr><td colspan="2">Kursus yang dimohon untuk dipindahkan kredit mestilah daripada program pengajian yang telah mendapat Perakuan Akreditasi daripada MQA</td></tr>
<tr><td></td><td colspan="2">Pemindahan kredit tidak dibenarkan bagi kes-kes berikut :

i) Pelajar yang diberhentikan dari pengajian di atas sebab kegagalan akademik dan kemudiannya menyambung semula pengajian di dalam program yang lain.

ii) Daripada kelayakan yang lebih tinggi ke program di peringkat yang lebih rendah.

iii) Latihan industri tidak dibenarkan untuk dipindah kredit.

iv) Pengecualian kursus tidak dibenarkan bagi kursus Mata Pelajaran Umum (MPU). Kursus MPU hanya dibenarkan pindah kredit secara horizontal sahaja.

v) Penambahan kursus bagi menggantikan kursus yang dikecualikan;

a) Kursus yang ditambah perlulah kursus yang sama tahap. Sekiranya kursus tambahan ini diambil dari program yang telah mendapat Akreditasi Sementara atau Akreditasi Penuh, maka kursus tersebut tidak perlu dinilai oleh MQA.

b) Sekiranya kursus baru, maka perlu dinilai</td></tr>
</table>

DASAR-DASAR PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS KURSUS	MQA / ETAC / TTAC
Dasar pengecualian kursus MQA menjadi panduan bagi ketiga-tiga badan akreditasi.	
Pengecualian kursus Dasar pengecualian kursus politeknik telah disemak semula memandangkan terdapat pemansuhan dalam dasar pengecualian kursus berkaitan kursus MPU. Pemansuhan tersebut adalah disebabkan kursus Mata Pelajaran Wajib (MPW) telah ditambah baik dengan penawaran MPU mulai September 2013 dan pindah kredit MPU hanya dibenarkan secara mendatar sahaja.	**Dasar-dasar pengecualian kursus yang dikekalkan di Politeknik dan Kolej Komuniti :** i) Pengecualian kursus perlu dilakukan berdasarkan kepada kesetaraan kandungan kursus yang dipohon dengan pembuktian pengetahuan dan kemahiran pelajar. ii) Pengecualian kursus tidak menyebabkan pelajar mendapat kredit bagi kursus yang dikecualikan. iii) Pelajar perlu mengambil kursus lain bagi menggantikan kursus berkenaan sekiranya pengecualian tersebut menyebabkan keperluan jumlah kredit bergraduat tidak mencukupi. iv) Kursus yang ditambah perlulah kursus yang sama tahap. Sekiranya kursus tambahan ini diambil dari program yang telah mendapat Akreditasi Sementara atau Akreditasi Penuh, maka kursus tersebut tidak perlu dinilai oleh MQA. Sekiranya kursus baru, maka perlu dinilai.
Dasar-dasar pengecualian kursus yang dimansuhkan berkaitan MPW adalah seperti berikut:	
	i) Pelajar yang lulus MPW di peringkat sijil tidak boleh mengambil semula kursus tersebut di peringkat diploma. ii) Walau bagaimanapun, bagi pelajar yang telah lulus MPW di peringkat sijil/diploma boleh mengambil MPW diperingkat ijazah sarjana muda. iii) Pelajar antarabangsa dikecualikan untuk mengambil MPW, namun diberi pilihan untuk mengambil MPW sekiranya berminat.

LAMPIRAN 5 : SURAT PELAKSANAAN DASAR PINDAH KREDIT SECARA MENDATAR (HORIZONTAL CREDIT TRANSFER) MENGIKUT KELOMPOK BAGI KURSUS KELOMPOK U1 MATAPELAJARAN PENGAJIAN UMUM

TIMBALAN KETUA PENGARAH PENDIDIKAN TINGGI
(AKADEMIK DAN PEMBANGUNAN)
DEPUTY DIRECTOR GENERAL OF HIGHER EDUCATION
(ACADEMIC AND DEVELOPMENT)
Jabatan Pendidikan Tinggi
Department Of Higher Education
Kementerian Pendidikan Malaysia
Ministry of Education Malaysia
Aras 9, No.2, Menara 2,
Jalan P5/6, Presint 5
62200 PUTRAJAYA
MALAYSIA

JPT | JABATAN PENDIDIKAN TINGGI

Tel: 603-88706401
Faks (Fax): 603-88706842
Portal Rasmi: http://jpt.moe.gov.my

Ruj. Kami : JPT.(A) 1000/016/018/57JLD.15(41)

Tarikh : 13 Februari 2020

SEPERTI SENARAI EDARAN

YBhg.Dato'/ Prof./ Dr.,

PELAKSANAAN DASAR PINDAH KREDIT SECARA MENDATAR *(HORIZONTAL CREDIT TRANSFER)* MENGIKUT KELOMPOK BAGI KURSUS KELOMPOK U1 MATAPELAJARAN PENGAJIAN UMUM

Dengan segala hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Mesyuarat Kajian Semula Dasar – Dasar Berkaitan Jaminan Kualiti (MKSDJK) KPM-MQA Bil.3/2019 yang telah diadakan pada 10 Disember 2019 telah memutuskan supaya kursus dalam Kelompok U1 Matapelajaran Pengajian Umum (MPU) **dibenarkan** untuk dipindah kredit secara mendatar *(horizontal credit transfer).*

3. Kursus dalam Kelompok U1 MPU dibenarkan untuk dipindah kredit secara mendatar secara berkelompok *(package).* Pencapaian hasil pembelajaran adalah dinilai berdasarkan hasil pembelajaran berkelompok dan bukan mengikut kursus. Pelajar yang telah melengkapkan semua kursus Kelompok U1 MPU di IPT terdahulu dianggap telah mencapai hasil pembelajaran berkelompok bagi kursus Kelompok U1 dan seterusnya layak memindah kredit ke IPT lain tanpa melihat perbezaan kredit kursus di IPT terdahulu dan IPT baharu.

4. Perkara ini adalah selari dengan pelaksanaan pindah kredit MOOC dan pindah kredit APEL(C) dan memberi penjimatan kepada amaun yuran yang perlu dibayar oleh pelajar. Pelajar layak diberikan pindah kredit secara mendatar sekiranya pelajar dapat dinilai melalui suatu proses yang rapi dan disahkan mencapai hasil pembelajaran yang

disasarkan. Ini meliputi sama ada pelajar mengikuti kursus yang sama atau setara dalam program pendidikan formal terdahulu, secara MOOC atau program pendidikan bukan formal. Pelaksanaan dasar pindah kredit secara mendatar mengikut kelompok bagi Kursus Kelompok U1 MPU adalah **berkuatkuasa bagi semua pelajar yang masih dalam sesi pengajian.**

5. Sehubungan dengan itu, YBhg. Datuk/ Dato'/ Prof./ Dr. adalah dipohon untuk mengambil perhatian dan tindakan sewajarnya.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DATO' PROF. IR. DR. MOHD SALEH JAAFAR)
Timbalan Ketua Pengarah Pendidikan Tinggi
(Akademik dan Pembangunan)
Jabatan Pendidikan Tinggi
Kementerian Pendidikan Malaysia

s.k.

1. Ketua Setiausaha
   Kementerian Pendidikan Malaysia

2. Ketua Pegawai Eksekutif (CEO)
   Agensi Kelayakan Malaysia (MQA)

3. Ketua Pengarah
   Jabatan Pendidikan Politeknik dan Kolej Komuniti

4. Pengarah
   Bahagian Kecemerlangan Akademik
   Jabatan Pendidikan Tinggi

LAMPIRAN 6 : SURAT MAKLUMAN MQA BIL. 2/2020 PENAMBAHBAIKAN DASAR PINDAH KREDIT

Agensi Kelayakan Malaysia
Malaysian Qualifications Agency
Tel: +603 8688 3611 | Faks: +603 8688 3600

KETUA PEGAWAI EKSEKUTIF
(Chief Executive Officer)
AGENSI KELAYAKAN MALAYSIA
(Malaysian Qualifications Agency)
Mercu MQA
No. 3539, Jalan Teknokrat 7, Cyber 5
63000 Cyberjaya
Selangor Darul Ehsan

NO GIFT POLICY

Ruj. Kami: MQA.100-1/7/2 Jld. 3 (7)
Tarikh : 30 Januari 2020

KEPADA SEMUA PEMBERI PENDIDIKAN TINGGI (PPT)

Tuan/Puan,

SURAT MAKLUMAN MQA BIL. 2/2020

PENAMBAHBAIKAN DASAR PINDAH KREDIT

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Untuk makluman, Surat Makluman Berkenaan Dasar Jaminan Kualiti Yang Diputuskan Melalui Mesyuarat Kajian Semula Dasar-Dasar Berkaitan Jaminan Kualiti Bil. 1/2011 - 3/2011 rujukan JPT(A)1000/001/013/05 (17) bertarikh 27 Mac 2012 telah menyatakan dasar pindah kredit secara *vertical* semasa iaitu kelayakan Diploma ke Sarjana Muda adalah seperti berikut:

i. Pindahan kredit kelayakan Diploma ke kelayakan Sarjana Muda dibenarkan sehingga **maksimum 30%** (lebih kurang satu tahun pengajian) daripada jumlah kredit program yang diikuti.

ii. Dasar pindah kredit yang ditetapkan ini perlu berasaskan kepada pemetaan kursus (*subject to subject mapping*) dan tertakluk kepada syarat umum pindah kredit iaitu:

a. Gred lulus – gred minimum iaitu gred C;
b. Nilai Kredit – sama dengan nilai kredit kursus bagi program PPT penerima;
c. Kesetaraan kurikulum kursus – tidak kurang 80%; dan
d. Kursus yang boleh dipindah kredit hendaklah daripada program yang telah mendapat Akreditasi (termasuk Akreditasi Sementara)/Pengiktirafan dari badan yang berautoriti di negara berkenaan.

3. Mesyuarat Kajian Semula Dasar-Dasar Berkaitan Jaminan Kualiti KPM-MQA Bil. 3/2019 bertarikh 10 Disember 2019 telah bersetuju di atas penambahbaikan ketetapan dasar pindah kredit seperti berikut:

i. Pindahan kredit untuk kelayakan Diploma (Tahap 4, MQF) ke Sarjana Muda (Tahap 6, MQF) secara *vertical* dengan pindahan **maksimum sebanyak 50%** daripada jumlah kredit program yang diikuti dengan ketetapan berikut:

Peratusan Pindah Kredit (%)	Gred Minimum Kursus
1 hingga 30	**Gred C**
31 hingga 50	**Gred B**

ii. Ketetapan dasar pindah kredit seperti di perkara 2 (ii) adalah dikekalkan.

4. Untuk makluman juga, pindah kredit maksimum 60% masih dikekalkan bagi gabungan pindah kredit yang melibatkan kelayakan akademik dan Pengakreditan Pembelajaran Berasaskan Pengalaman Terdahulu bagi Tujuan Penganugerahan Kredit [APEL(C)], *Massive Open Online Courses* (MOOC) dan *Micro-Credential* (MC).

5. Pelaksanaan ini berkuat kuasa daripada tarikh surat ini.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(PROF. IR. DR. KHAIRUL SALLEH BIN MOHAMED SAHARI)
Timbalan Ketua Pegawai Eksekutif (Jaminan Kualiti)
(Menjalankan Tugas Ketua Pegawai Eksekutif)
Agensi Kelayakan Malaysia (MQA)

s.k.:

1. YBhg. Ketua Setiausaha
Pejabat Ketua Setiausaha
Kementerian Pendidikan Malaysia
Aras 17, No. 2, Menara 2
Jalan P5/6, Presint 5
62200 W.P. PUTRAJAYA

2. YBhg. Ketua Pengarah Pendidikan Tinggi
Jabatan Pendidikan Tinggi
Kementerian Pendidikan Malaysia
Aras 9, No. 2, Menara 2
Jalan P5/6, Presint 5
62200 W.P. PUTRAJAYA

3. YBhg. Ketua Pengarah
Jabatan Pendidikan Politeknik & Kolej Komuniti
Kementerian Pendidikan Malaysia
Aras 5, Galeria PjH, Jalan P4w
Persiaran Perdana, Presint 4
62100 W.P. PUTRAJAYA

LAMPIRAN 7 : PEMAKLUMAN BERKENAAN PENAMBAHBAIKAN DASAR PINDAH KREDIT

SPS/2016/05912
THPE(JK)

KETUA PENGARAH PENDIDIKAN TINGGI
DIRECTOR GENERAL OF HIGHER EDUCATION
Jabatan Pendidikan Tinggi
Department of Higher Education
Aras 9, No.2, Menara 2,
Jalan P5/6, Presint 5
62200 PUTRAJAYA
MALAYSIA

Tel: 603-88706381
Faks (Fax): 603-88706840
Portal Rasmi: http://jpt.mohe.gov.my
(Official Portal)

TERIMA
02 SEP 2016

Ruj.: JPT.S(A)2000/016/015/05 (9)
Tarikh: 19 Ogos 2016

SEPERTI SENARAI EDARAN

YBhg. Tan Sri/Dato' Seri/ Datuk/Dato'/ Prof./Dr.,

PEMAKLUMAN BERKENAAN PENAMBAHBAIKAN DASAR PINDAH KREDIT

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Kementerian Pendidikan Tinggi (KPT) dan Agensi Kelayakan Malaysia (*Malaysian Qualifications Agency*, MQA) telah membuat **penambahbaikan terhadap dasar pindah kredit** iaitu:

i. **Pindah Kredit Dengan Gred:**

Pindah kredit secara *horizontal* bagi pelajar yang berada dalam sistem (pelajar yang masih dalam pengajian). Kredit dikira dalam kredit bergraduat pelajar dan gred kursus diambil kira dalam pengiraan Purata Nilai Gred (PNG) dan Purata Nilai Gred Kumulatif (PNGK).

Contoh:
Pelajar yang sedang mengikuti Diploma A bertukar ke Diploma B pada semester kedua. Maka proses pindah kredit pelajar tersebut akan mengambil kira gred kursus dari Diploma A dalam pengiraan PNG dan PNGK pelajar di Diploma B.

ii. **Pindah Kredit Tanpa Gred (turut dipanggil pengecualian kredit):**

Pindah kredit secara *vertical* atau *horizontal* bagi pelajar yang telah keluar daripada sistem (pelajar yang telah tamat pengajian) atau telah mencapai tahap kompetensi dalam kursus berkenaan. Kredit kursus yang dipindahkan diambil kira dalam kredit bergraduat tetapi gred kursus tidak diambil kira dalam pengiraan PNG dan PNGK pelajar.

Unit Pentadbiran
02 SEP 2016
AGENSI KELAYAKAN MALAYSIA (MQA)

Contoh 1:
Pelajar lepasan sijil menyambung pengajian ke peringkat diploma dan membuat pindah kredit bagi kursus-kursus yang bersesuaian. Maka kredit bagi kursus yang pernah diikuti di peringkat sijil akan diambil kira dalam pengiraan kredit bergraduat pelajar. Namun, gred kursus tidak akan diambil kira dalam pengiraan PNG dan PNGK pelajar.

Contoh 2:
Pelajar yang telah tamat program Diploma A dan kemudian ingin mengikuti program Diploma B. Bagi situasi ini yang mana pelajar telah memiliki kelayakan di peringkat yang sama, maka pindah kredit tidak akan mengambil kira gred kursus dalam pengiraan PNG dan PNGK pelajar di Diploma B.

Contoh 3:
Pindah kredit yang berdasarkan pengalaman melalui APEL *Credit* (C) tidak melibatkan gred. Oleh yang demikian, hanya kredit yang akan diambil kira.

Pindah kredit bagi perkara 2 (i) dan (ii) tetap perlu mematuhi syarat umum pindah kredit iaitu:

i. Gred lulus – gred minimum iaitu Gred C;
ii. Nilai kredit – sama dengan nilai kredit kursus bagi program di institusi pengajian tinggi (IPT) penerima;
iii. Kesetaraan kurikulum kursus – tidak kurang 80%; dan
iv. Kursus yang boleh dipindahkan kredit hendaklah daripada program yang telah mendapat Akreditasi/Pengiktirafan dari badan yang berautoriti di negara berkenaan.

3. Selain itu, dasar pindah kredit secara *horizontal* yang dinyatakan dalam Perkara 6, Surat Makluman Berkenaan Dasar Jaminan Kualiti Yang Diputuskan Melalui Mesyuarat Kajian Semula Dasar-Dasar Berkaitan Jaminan Kualiti Bil 1/2011 - 3/2011 yang bertarikh 27 Mac 2012 bagi situasi berikut adalah **dimansuhkan**:

"Pelajar sedang mengikuti suatu program dan dalam masa yang sama mengambil beberapa kursus di PPT yang lain (contoh program mobiliti atau program pertukaran pelajar) Pemindahan kredit adalah dibenarkan namun ia tidak boleh melebihi 30% daripada jumlah kredit program pengajian yang sedang diikuti dan ia adalah berdasarkan persetujuan antara kedua-dua PPT."

Sehubungan itu, pindah kredit bagi situasi ini adalah mengikut dasar **pindah kredit dengan gred** seperti di perkara 2 (i).

4. Manakala **dasar pengecualian kursus** seperti yang dinyatakan dalam perkara 7, Surat Makluman Berkenaan Dasar Jaminan Kualiti Yang Diputuskan Melalui Mesyuarat Kajian Semula Dasar-Dasar Berkaitan Jaminan Kualiti Bil 1/2011 - 3/2011 **dikekalkan dengan beberapa pemansuhan** iaitu ketetapan yang melibatkan mata pelajaran wajib (MPW) seperti berikut:

i. Pengecualian kursus tidak akan menyebabkan pelajar mendapat kredit bagi kursus yang dikecualikan. **(Kekal)**
ii. Sekiranya pengecualian kursus itu akan menyebabkan keperluan kredit bergraduat tidak mencukupi, maka pelajar perlu mengambil kursus lain bagi menggantikan kursus tersebut. **(Kekal)**
iii. Pelajar yang lulus MPW di peringkat sijil tidak boleh mengambil semula kursus tersebut di peringkat diploma. **(Dimansuhkan)**
iv. Walau bagaimanapun, bagi pelajar yang telah lulus MPW di peringkat sijil/diploma boleh mengambil MPW di peringkat ijazah sarjana muda. **(Dimansuhkan)**
v. Pelajar antarabangsa dikecualikan daripada mengambil MPW, namun diberi pilihan untuk mengambil MPW sekiranya berminat. **(Dimansuhkan)**

Pemansuhan tersebut adalah kerana MPW telah ditambah baik dengan penawaran mata pelajaran umum (MPU) mulai September 2013 dan pindah kredit MPU hanya dibenarkan secara *horizontal* sahaja.

5. **Dasar ini berkuat kuasa mulai daripada tarikh surat ini** dan hendaklah dibaca bersama dengan Surat Makluman Berkenaan Dasar Jaminan Kualiti Yang Diputuskan Melalui Mesyuarat Kajian Semula Dasar-

Dasar Berkaitan Jaminan Kualiti Bil 1/2011 - 3/2011 yang bertarikh 27 Mac 2012 yang berkaitan dengan pindah kredit.

6. Kerjasama dan perhatian YBhg. Tan Sri/Datuk Seri/Dato' Seri/ Datuk/Dato'/Datin/Prof./Dr./Tuan/Puan adalah dimohon untuk mengambil perhatian yang sewajarnya berhubung perkara ini.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

(DATUK PROF. DR. ASMA BINTI ISMAIL)
Ketua Pengarah Pendidikan Tinggi
Jabatan Pendidikan Tinggi
Kementerian Pendidikan Tinggi

s.k.

1. Timbalan Ketua Pengarah Pendidikan Tinggi (A)
   Jabatan Pendidikan Tinggi
   Kementerian Pendidikan Tinggi

2. Ketua Pegawai Eksekutif
   Agensi Kelayakan Malaysia
   Menara PKNS-PJ
   17, Jalan Yong Shook Lin
   46050 PETALING JAYA

3. Ketua Pengarah
   Jabatan Pendidikan Politeknik
   Kementerian Pendidikan Tinggi

LAMPIRAN 8 : PEKELILING MQA BIL2/2015 – DASAR PINDAH KREDIT DAN PENAMBAHBAIKAN DASAR

Agensi Kelayakan Malaysia
Malaysian Qualifications Agency
Promoting Seamless Cross Border Education

Our People, Our Community, Our Vision
Malaysia 2015

KETUA PEGAWAI EKSEKUTIF
(Chief Executive Officer)
AGENSI KELAYAKAN MALAYSIA
(Malaysian Qualifications Agency)
Tingkat 14 B, Menara PKNS-PJ
No. 17, Jalan Yong Shook Lin
46050 Petaling Jaya
SELANGOR DARUL EHSAN

Tel: 603-7968 7002
Faks: 603-7956 9496
Laman web: www.mqa.gov.my

Ruj. Kami : MQA. 100-1/7/1 (10)
Tarikh : 23 September 2015

KEPADA SEMUA PEMBERI PENDIDIKAN TINGGI (PPT)

Tuan/Puan,

PEKELILING MQA BIL. 2/2015 – DASAR PINDAH KREDIT DAN PENAMBAHBAIKAN DASAR PROGRAM PEMINDAHAN IJAZAH (*DEGREE TRANSFER PROGRAM*, DTP)

Dengan segala hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Agensi Kelayakan Malaysia (*Malaysian Qualifications Agency*, MQA) telah membuat penambahbaikan Dasar Program Pemindahan Ijazah (*Degree Transfer Program*, DTP). Dasar ini melibatkan pelajar yang mengambil program DTP di Institusi Pengajian Tinggi (IPT) tempatan sebagai persediaan untuk menyambung pengajian di IPT Amerika Syarikat (US), United Kingdom (UK) dan Australia. Penambahbaikan dasar ini adalah seperti berikut:

i. **Bagi Pelajar *American Degree Transfer Program* (ADTP) yang Memilih untuk Menyambung Pengajian ke IPT Tempatan**

   a. Pelajar perlu tamat program ADTP dan melengkapkan kredit program serta lulus sekurang-kurangnya PNGK 2.0;

   b. Pelajar boleh dipertimbangkan untuk menyambung pengajian mereka terus ke tahun 3 di IPT tempatan yang menjalankan program kerjasama 4+0 dengan IPT US; dan

   c. Bagi pelajar yang memilih untuk melanjutkan pengajian di IPT tempatan bagi program yang bukan kerjasama 4+0 dengan IPT US, pelajar boleh dipertimbangkan untuk menyambung pengajian mereka terus ke tahun 2.

ii. **Bagi Pelajar *United Kingdom/Australian Degree Transfer Program* (UK/Australia, DTP) yang Memilih untuk Menyambung Pengajian ke IPT Tempatan**

   a. Pelajar perlu tamat program UK/Australian DTP dan melengkapkan kredit program serta lulus sekurang-kurangnya PNGK 2.0; dan

   b. Pelajar boleh dipertimbangkan untuk menyambung pengajian mereka terus ke tahun 3 di IPT tempatan.

MQA mengamalkan polisi tidak menerima hadiah

3. Walau bagaimanapun, **para 2 (i) dan (ii) adalah tertakluk kepada dasar umum pindah kredit dan syarat pemastautin (*residential year*)** seperti mana yang ditetapkan di perkara 6 (2) dan 6 (5) dalam Surat Makluman Berkenaan Dasar Jaminan Kualiti yang diputuskan melalui Mesyuarat Kajian Semula Dasar-Dasar Jaminan Kualiti (MKSDJK) Bil 1/2011 - 3/2011 yang dikeluarkan oleh Jabatan Pendidikan Tinggi (JPT) bertarikh 27 Mac 2012.

4. Selaras dengan makluman ini, Surat Makluman Berkenaan Dasar Jaminan Kualiti yang diputuskan melalui MKSDJK Bil 1/2011 - 3/2011 yang dikeluarkan oleh JPT bertarikh 27 Mac 2012 bagi perkara 12 - *American Degree Transfer Program* adalah **terbatal**.

5. Dimaklumkan juga, bagi pelajar Malaysia yang belajar di luar negara dan pelajar asing yang ingin menyambung pengajian di IPT tempatan, **dasar umum pindah kredit dan syarat pemastautin (*residential year*)** seperti mana di para 3 **adalah terpakai.**

6. Sehubungan itu, bagi para 2 (i), (ii) dan para 5 **permohonan hendaklah dibuat terus kepada IPT tempatan tanpa melalui MQA. Senat IPT berkuasa penuh dan bertanggungjawab untuk memastikan pemetaan kursus (*subject to subject mapping*) dilaksanakan dan dasar umum pindah kredit serta syarat pemastautin (*residential year*) dipatuhi sepenuhnya.** Walau bagaimanapun, bagi program pengajian yang melibatkan Badan Profesional maka ia adalah tertakluk kepada bidang kuasa Badan Profesional yang berkaitan.

7. **Pelaksanaan dan pematuhan dasar ini berkuatkuasa mulai daripada tarikh pekeliling ini.**

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Yang ikhlas,

(DATO' PROF. DR. RUJHAN BIN MUSTAFA)
Ketua Pegawai Eksekutif
Agensi Kelayakan Malaysia

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RUJUKAN

i. Garis Panduan Pindahan Kredit & Pengecualian Kursus Program Pengajian Politeknik Kementerian Pendidikan Malaysia (Pindaan Pertama : 1 Disember 2013)

ii. Malaysian Qualifications Agency (MQA)

iii. Kompilasi Dasar Jaminan Kualiti Pendidikan Tinggi (2009-2017) Edisi Kedua

iv. *Engineering Technology Accreditation Council* (ETAC), *Board of Engineers* Malaysia (BEM)

v. *Technology And Technical Accreditation Council* (TTAC), *Malaysia Board of Technologists* (MBOT)

JAWATANKUASA PEMBANGUNAN DAN PENERBITAN

PENAUNG

Ts. Dr. Mohamamad Naim bin Yaakub

PENASIHAT

Ts Noor Aidi binti Nadzri

PENULIS

Noraina binti Abdul Rahman

Zuraidah binti Ab Moin

Nurunnajahatun binti Zamzam

PENYUNTINGAN

Sarah binti Abd Hamid

Nur Ili Izyani binti Muhamad

KEMENTERIAN PENGAJIAN TINGGI

ISBN 978-967-2243-77-9

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Rujukan Kami : JPPKK.BGK.600-2/1/10 Jld 4(17)
Tarikh : 20 Mac 2023

SEPERTI SENARAI EDARAN
(Seperti di Lampiran 1)

YBhg. Dr./Ts./Tuan/Puan,

MAKLUMAN PERTUKARAN PELAJAR POLITEKNIK DENGAN PROGRAM YANG SAMA

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan pihak Agensi Kelayakan Malaysia (MQA) telah memberi pertimbangan bagi pertukaran pelajar politeknik dengan program yang sama merujuk kepada surat daripada MQA bernombor rujukan : MQA. 100-2/2/1 Jld. 48 (20).

3. Permohonan terhadap pindahan gred secara keseluruhan bagi pelajar yang berpindah antara politeknik dengan program yang sama telah mendapat pertimbangan daripada pihak MQA berdasarkan ketetapan bahawa kredit dikira dalam kredit bergraduat pelajar dan gred kursus diambil kira dalam pengiraan Purata Nilai Gred (PNG) dan Purata Gred Kumulatif (PNGK) di politeknik asal dibawa secara keseluruhan ke politeknik yang baru bagi program yang sama.

4. Sehubungan itu, pertimbangan pertukaran pelajar politeknik dengan program yang sama ini berkuatkuasa bermula **Sesi II 2022/2023** dan terpakai kepada semua program pengajian di bawah akreditasi MQA, ETAC dan MBOT.

5. Bersama-sama ini, dipanjangkan surat daripada pihak MQA sebagai punca kuasa dan rujukan kepada pihak politeknik seperti di **LAMPIRAN 2**. Sebarang pertanyaan berkaitan perkara ini boleh menghubungi pegawai **Pn. Nik Afiqah binti Kamil** di talian 03-88882480 atau emel nik.afiqah@mohe.gov.my. Kerjasama dan perhatian yang diberikan oleh pihak tuan/puan amatlah dihargai dan didahului dengan ucapan ribuan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(Ts. ABDUL RAZAK BIN SABTU) DSM.BKT.PJK
Pengarah
Bahagian Governan dan Kecemerlangan
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Tinggi

s.k.

Pengarah
Jabatan Akreditasi Kejuruteraan & Teknologi Kejuruteraan
Lembaga Jurutera Malaysia
Tingkat 9, Kelana Parkview Tower
No 1, Jalan SS 6/2, Kelana Jaya 47301 Petaling Jaya
Selangor Darul Ehsan.

Pengarah
Technology & Technical Accreditation Secretariat (TTAS)
Malaysia Board of Technologists (MBOT)
1, Jalan P8G, Presint 8,
62000 Putrajaya,
Wilayah Persekutuan Putrajaya

SENARAI EDARAN

1. Pengarah
   Politeknik Ungku Omar (PUO)

2. Pengarah
   Politeknik Sultan Haji Ahmad Shah (POLISAS)

3. Pengarah
   Politeknik Sultan Abdul Halim Mu'adzam Shah (POLIMAS)

4. Pengarah
   Politeknik Kota Bharu (PKB)

5. Pengarah
   Politeknik Kuching Sarawak (PKS)

6. Pengarah
   Politeknik Port Dickson (PPD)

7. Pengarah
   Politeknik Kota Kinabalu (PKK)

8. Pengarah
   Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)

9. Pengarah
   Politeknik Ibrahim Sultan (PIS)

10. Pengarah
    Politeknik Seberang Perai (PSP)

11. Pengarah
    Politeknik Melaka (PMK)

12. Pengarah
    Politeknik Kuala Terengganu (PKT)

13. Pengarah
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    Politeknik Merlimau (PMM)

15. Pengarah
    Politeknik Sultan Azlan Shah (PSAS)

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    Politeknik Sultan Idris Shah (PSIS)

18. Pengarah
    Politeknik Tuanku Syed Sirajuddin (PTSS)

19. Pengarah
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20. Pengarah
    Politeknik Mukah Sarawak (PMU)

21. Pengarah
    Politeknik Balik Pulau (PBU)

22. Pengarah
    Politeknik Jeli (PJK)

23. Pengarah
    Politeknik Nilai (PNS)

24. Pengarah
    Politeknik Banting (PBS)

25. Pengarah
    Politeknik Mersing (PMJ)

26. Pengarah
    Politeknik Hulu Terengganu (PHT)

27. Pengarah
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28. Pengarah
    Politeknik METrO Kuala Lumpur (PMKL)

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    Politeknik METrO Kuantan (PMKU)

30. Pengarah
    Politeknik METrO Johor Bahru (PMJB)

31. Pengarah
    Politeknik METrO Betong (PMBS)

32. Pengarah
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33. Pengarah
    Politeknik Tun Syed Nasir Syed Ismail (PTSN)

34. Pengarah
    Politeknik Besut (PBT)

35. Pengarah
    Politeknik Bagan Datuk (PBD)

36. Pengarah
    Politeknik Tawau (PTS)

KETUA PENGARAH PENDIDIKAN TINGGI
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62200 PUTRAJAYA
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TERIMA
25 AUG 2016
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Jabatan Pendidikan Politeknik
Kementerian Pendidikan Tinggi

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Portal Rasmi: http://jpt.mohe.gov.my
(Official Portal)

Ruj.: JPT.S(A)2000/016/015/05 (9)
Tarikh: 19 Ogos 2016

SEPERTI SENARAI EDARAN

YBhg. Tan Sri/Dato' Seri/ Datuk/Dato'/ Prof./Dr.,

PEMAKLUMAN BERKENAAN PENAMBAHBAIKAN DASAR PINDAH KREDIT

DATUK HJ. MOHLIS BIN JAWAWI
Ketua Pengarah
Jabatan Pendidikan Politeknik
Kementerian Pendidikan Tinggi

Dengan hormatnya saya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Kementerian Pendidikan Tinggi (KPT) dan Agensi Kelayakan Malaysia (*Malaysian Qualifications Agency*, MQA) telah membuat **penambahbaikan terhadap dasar pindah kredit** iaitu:

i. **Pindah Kredit Dengan Gred:**

Pindah kredit secara *horizontal* bagi pelajar yang berada dalam sistem (pelajar yang masih dalam pengajian). Kredit dikira dalam kredit bergraduat pelajar dan gred kursus diambil kira dalam pengiraan Purata Nilai Gred (PNG) dan Purata Nilai Gred Kumulatif (PNGK).

Contoh:
Pelajar yang sedang mengikuti Diploma A bertukar ke Diploma B pada semester kedua. Maka proses pindah kredit pelajar tersebut akan mengambil kira gred kursus dari Diploma A dalam pengiraan PNG dan PNGK pelajar di Diploma B.

ii. **Pindah Kredit Tanpa Gred (turut dipanggil pengecualian kredit):**

Pindah kredit secara *vertical* atau *horizo*
keluar daripada sistem (pelajar yang t
telah mencapai tahap kompetensi dalam

29 AUG 2016

Contoh 1:
Pelajar lepasan sijil menyambung pengajian ke peringkat diploma dan membuat pindah kredit bagi kursus-kursus yang bersesuaian. Maka kredit bagi kursus yang pernah dikuti di peringkat sijil akan diambil kira dalam pengiraan kredit bergraduat pelajar. Namun, gred kursus tidak akan diambil kira dalam pengiraan PNG dan PNGK pelajar.

Contoh 2:
Pelajar yang telah tamat program Diploma A dan kemudian ingin mengikuti program Diploma B. Bagi situasi ini yang mana pelajar telah memiliki kelayakan di peringkat yang sama, maka pindah kredit tidak akan mengambil kira gred kursus dalam pengiraan PNG dan PNGK pelajar di Diploma B.

Contoh 3:
Pindah kredit yang berdasarkan pengalaman melalui APEL *Credit* (C) tidak melibatkan gred. Oleh yang demikian, hanya kredit yang akan diambil kira.

Pindah kredit bagi perkara 2 (i) dan (ii) tetap perlu mematuhi syarat umum pindah kredit iaitu:

i. Gred lulus – gred minimum iaitu Gred C;
ii. Nilai kredit – sama dengan nilai kredit kursus bagi program di institusi pengajian tinggi (IPT) penerima;
iii. Kesetaraan kurikulum kursus – tidak kurang 80%; dan
iv. Kursus yang boleh dipindahkan kredit hendaklah daripada program yang telah mendapat Akreditasi/Pengiktirafan dari badan yang berautoriti di negara berkenaan.

3. Selain itu, dasar pindah kredit secara *horizontal* yang dinyatakan dalam Perkara 6, Surat Makluman Berkenaan Dasar Jaminan Kualiti Yang Diputuskan Melalui Mesyuarat Kajian Semula Dasar-Dasar Berkaitan Jaminan Kualiti Bil 1/2011 - 3/2011 yang bertarikh 27 Mac 2012 bagi situasi berikut adalah **dimansuhkan**:

"Pelajar sedang mengikuti suatu program dan dalam masa yang sama mengambil beberapa kursus di PPT yang lain (contoh program mobiliti atau program pertukaran pelajar) Pemindahan kredit adalah dibenarkan namun ia tidak boleh melebihi 30% daripada jumlah kredit program pengajian yang sedang diikuti dan ia adalah berdasarkan persetujuan antara kedua-dua PPT."

Sehubungan itu, pindah kredit bagi situasi ini adalah mengikut dasar **pindah kredit dengan gred** seperti di perkara 2 (i).

4. Manakala **dasar pengecualian kursus** seperti yang dinyatakan dalam perkara 7, Surat Makluman Berkenaan Dasar Jaminan Kualiti Yang Diputuskan Melalui Mesyuarat Kajian Semula Dasar-Dasar Berkaitan Jaminan Kualiti Bil 1/2011 - 3/2011 **dikekalkan dengan beberapa pemansuhan** iaitu ketetapan yang melibatkan mata pelajaran wajib (MPW) seperti berikut:

i. Pengecualian kursus tidak akan menyebabkan pelajar mendapat kredit bagi kursus yang dikecualikan. **(Kekal)**
ii. Sekiranya pengecualian kursus itu akan menyebabkan keperluan kredit bergraduat tidak mencukupi, maka pelajar perlu mengambil kursus lain bagi menggantikan kursus tersebut. **(Kekal)**
iii. Pelajar yang lulus MPW di peringkat sijil tidak boleh mengambil semula kursus tersebut di peringkat diploma. **(Dimansuhkan)**
iv. Walau bagaimanapun, bagi pelajar yang telah lulus MPW di peringkat sijil/diploma boleh mengambil MPW di peringkat ijazah sarjana muda. **(Dimansuhkan)**
v. Pelajar antarabangsa dikecualikan daripada mengambil MPW, namun diberi pilihan untuk mengambil MPW sekiranya berminat. **(Dimansuhkan)**

Pemansuhan tersebut adalah kerana MPW telah ditambah baik dengan penawaran mata pelajaran umum (MPU) mulai September 2013 dan pindah kredit MPU hanya dibenarkan secara *horizontal* sahaja.

5. **Dasar ini berkuat kuasa mulai daripada tarikh surat ini** dan hendaklah dibaca bersama dengan Surat Makluman Berkenaan Dasar Jaminan Kualiti Yang Diputuskan Melalui Mesyuarat Kajian Semula Dasar-

Dasar Berkaitan Jaminan Kualiti Bil 1/2011 - 3/2011 yang bertarikh 27 Mac 2012 yang berkaitan dengan pindah kredit.

6. Kerjasama dan perhatian YBhg. Tan Sri/Datuk Seri/Dato' Seri/ Datuk/Dato'/Datin/Prof./Dr./Tuan/Puan adalah dimohon untuk mengambil perhatian yang sewajarnya berhubung perkara ini.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menurut perintah,

(DATUK PROF. DR. ASMA BINTI ISMAIL)
Ketua Pengarah Pendidikan Tinggi
Jabatan Pendidikan Tinggi
Kementerian Pendidikan Tinggi

s.k.

1. Timbalan Ketua Pengarah Pendidikan Tinggi (A)
   Jabatan Pendidikan Tinggi
   Kementerian Pendidikan Tinggi

2. Ketua Pegawai Eksekutif
   Agensi Kelayakan Malaysia
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   17, Jalan Yong Shook Lin
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   Kementerian Pendidikan Tinggi

4. Ketua Pengarah
   Jabatan Pendidikan Kolej Komuniti
   Kementerian Pendidikan Tinggi

5. SUSK YB Menteri Pendidikan Tinggi
   Kementerian Pendidikan Tinggi

6. SUSK YB Timbalan Menteri Pendidikan Tinggi
   Kementerian Pendidikan Tinggi

7. Pengarah
   Bahagian Pengurusan Pembangunan Akademik
   Jabatan Pendidikan Tinggi

8. Pengarah
   Bahagian Penguatkuasaan dan Inspektorat
   Jabatan Pendidikan Tinggi

9. Pengarah
   Bahagian Pendaftaran dan Piawaian
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6. **YBhg. Prof. Dr. Torla bin Hj. Hassan**
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7. **YBhg. Prof. Dr. Hassan bin Ali**
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10. **YBhg. Prof. Dr. Mohd Sahandri Ghani Bin Hamzah**
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11. **YBhg. Prof. Dr. Zulkiple Bin Abd. Ghani**
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12. **YBhg. Prof. Ir. Dr. Hj. Suhaimi bin Abdul Talib**
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13. **YBhg. Prof. Dr. Lokman bin Husain**
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15. **YBhg. Prof. Dr. Mohd Razali Bin Muhamad**
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16. **YBhg. Dato' Prof. Dr. Rosli bin Mohd Yunus**
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17. **Timbalan Naib Canselor (Akademik dan Antarabangsa)**
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18. **YBhg. Prof. Dr. Mohd Hassan bin Mohd Osman**
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(2)

19. **YBhg. Prof. Dr. Mahadzirah binti Mohamad**
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20. **YBhg. Prof. Dr. Tengku Mohd Bin Tengku Sembok**
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BAHAGIAN KURIKULUM
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
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Galeria PJH, Aras 4, Jalan P4W
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Tel : 03-88919000
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POLITEKNIK MALAYSIA UNIT PEPERIKSAAN
07 FEB 2023
TINDAKAN MAKLUMAN EDARAN FAIL

POLITEKNIK KOTA KINABALU
- 2 FEB 2023
PEJABAT PENGARAH
TINDAKAN MAKLUMAN EDARAN FAIL

Ruj. Kami : JPPKK.BK.600 – 5/1/3 JLD4(95)
Tarikh : 30 Januari 2023

Pengarah
Politeknik / Kolej Komuniti Malaysia

YBrs. Dr./Tuan/Puan,

MAKLUMAN PENAMBAHBAIKAN BORANG PEMETAAN GARIS PANDUAN PEMINDAHAN KREDIT DAN PENGECUALIAN KURSUS EDISI 2020

Dengan segala hormatnya saya merujuk perkara di atas.

2. Sukacita dimaklumkan bahawa Bahagian Kurikulum, Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) telah menambahbaik Borang Pemetaan Pemindahan Kredit yang terdapat di dalam Garis Panduan Pemindahan Kredit dan Pengecualian Kursus Politeknik dan Kolej Komuniti Edisi 2020.

3. Sehubungan dengan itu, disertakan bersama pautan berkenaan Pemindahan Kredit dan Pengecualian Kursus Politeknik dan Kolej Komuniti seperti berikut :

a. Garis Panduan Pemindahan Kredit dan Pengecualian Kursus Politeknik dan Kolej Komuniti Edisi 2020 : https://www.mypolycc.edu.my/index.php/muat-turun/garis-panduan-c/bahagian-kurikulum/send/12-bk/625-garis-panduan-ctce
b. Borang Pemetaan Kandungan Kursus : https://bit.ly/Borang_Pemetaan

4. Sebarang pertanyaan berhubung perkara di atas, boleh berhubung dengan pegawai kami, **Nurunnajahatun Binti Zamzam** melalui talian **03-8891 9186** atau **pegawai bidang berkenaan di Bahagian Kurikulum.** Keprihatinan dan kerjasama YBrs. Dr./Tuan/Puan mengenai perkara ini amat dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"BERKHIDMAT UNTUK NEGARA"

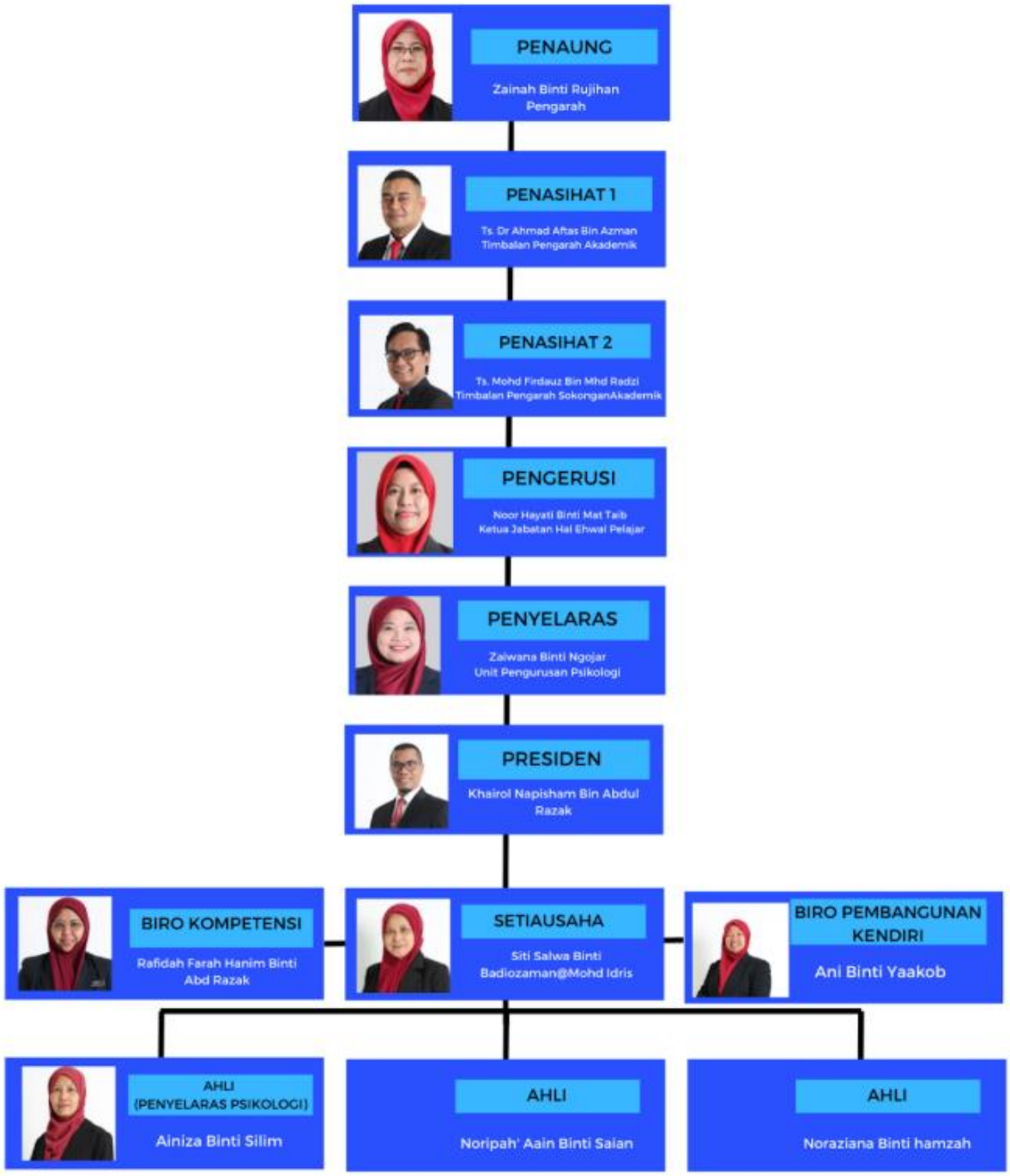
Saya yang menjalankan amanah,

(DR. NORHAYATI BINTI ZAKARIA)
Pengarah
Bahagian Kurikulum
Jabatan Pendidikan Politeknik & Kolej Komuniti
Kementerian Pendidikan Tinggi

Psychology and Counselling Services offered by UPP

Organizational Chart of the Unit Pengurusan Psikologi (UPP)

JAWATANKUASA AKRAB PSA

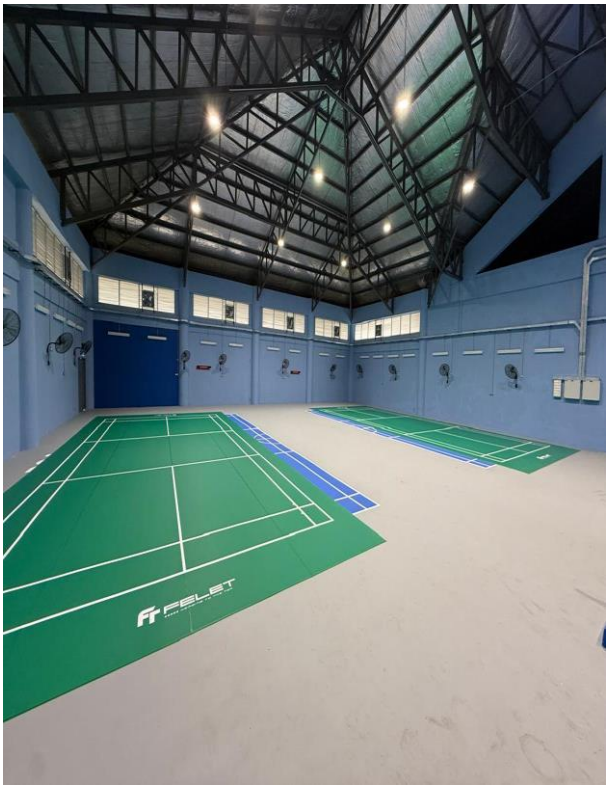


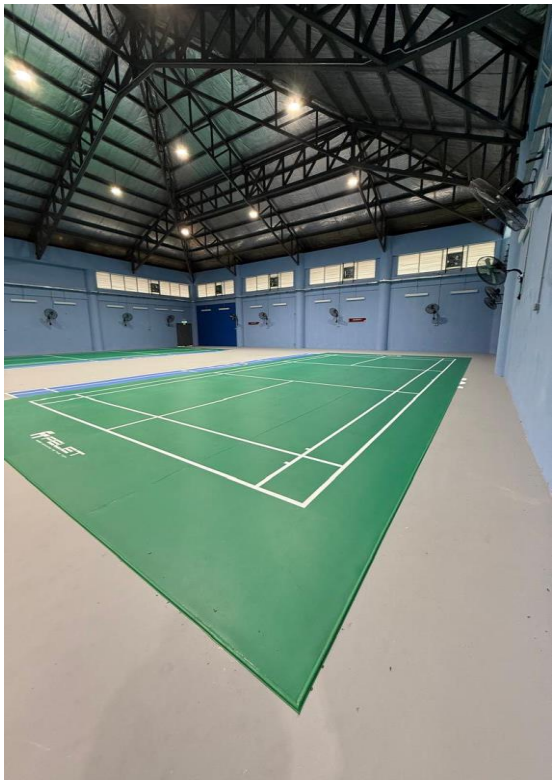
POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

SENARAI FASILITI SUKAN
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

BIL.	FASILITI	KUANTITI
1.	Gelanggang Badminton	2
2.	Bola Jaring/Bola Keranjang (Gunasama)	1
3.	Pickleball	3
4.	Sepak Takraw	4
5.	Tenis	1
6.	Bola Tampar	2
7.	Futsal	3
8.	Bola Sepak/Ragbi (Gunasama)	1

1. **Gelanggang badminton**





2. **Bola Jaring/Bola Keranjang (Gunasama)**

3. Pickleball

4. Sepak Takraw

5. Tenis

6. Bola Tampar

7. Futsal

8. Bola Sepak/Ragbi (Gunasama)

LAPORAN PELAKSANAAN PROGRAM

NAMA PROGRAM : BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK

SESI II 2024/2025

TARIKH PROGRAM : 7 JANUARI 2025

TEMPAT : JKM,PSA

Disediakan oleh :

NOOR HAZNIDA BINTI BAKAR

LAPORAN PROGRAM KESELURUHAN

<table>
<tr><td>NAMA PROGRAM</td><td>BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II 2024/2025</td></tr>
<tr><td>TEMPAT PROGRAM</td><td>JKM, PSA</td></tr>
<tr><td>TARIKH PROGRAM</td><td>7 JANUARI 2025</td></tr>
<tr><td>ANJURAN/KERJASAMA (Jika ada)</td><td>TIADA</td></tr>
<tr><td>OBJEKTIF PROGRAM</td><td>3.1 Memahami dengan lebih jelas mengenai falsafah, konsep dan objektif Pendidikan Berasaskan Hasil (OBE).
3.2 Mengenal pasti secara khusus hubungkait Dublin Knowledge Profile (DK, DP dan NA) antara objektif program, hasil program dan hasil pembelajaran, serta dapat melaksanakannya dalam PdP.
3.3 Membangunkan hasil pembelajaran bagi sesuatu mata pelajaran yang selari dengan hasil program. Memberi pengetahuan dan kemahiran kepada pensyarah kursus tentang cara penyediaan Rubric Penilaian Kerja Kursus (PKK) untuk Kursus/Bengkel/Amali.
3.4 Menghasilkan set item yang mencapai standard yang telah ditetapkan.</td></tr>
<tr><td>PERINCIAN PROGRAM DAN AKTIVITI (Jadual jika ada)</td><td>
<table>
<tr><th>Masa / Tarikh</th><th>9.00 - 13.00</th><th>13.00 - 14.00</th><th>14.00-15.00</th><th>15.00 – 17.00</th></tr>
<tr><td>7/1/2025</td><td>Interpretasi Kurikulum OBE & Penjajaran Konstruktif Pemetaan Assessment ke Profil Pengetahuan (DK), Penyelesaian Masalah (DP) dan Aktiviti Kejuruteraan (NA)</td><td>Makan Tengahari/ Solat Zuhur</td><td>Pembentukan Jadual Spesifikasi Ujian Berterusan (CIST)</td><td>Pembinaan rubrik dan semakan oleh SME</td></tr>
</table>
</td></tr>
</table>

PERINCIAN LAPORAN KEWANGAN **i.JUMLAH PERBELANJAAN (Perincian)** **ii.Sumber peruntukan**	TIADA
BILANGAN PESERTA	30 ORANG
BILANGAN PENGLIBATAN/ PENYERTAAN KOMUNITI/BELIA (Jika ada)	TIADA
SENARAI PENCERAMAH JEMPUTAN (Jika ada)	**EN MOHD ZULKARNAEN BIN MOHD IBRAHIM**
PERASMI PROGRAM	**EN MUHAMMAD FAIZ BIN ABDULLAH**
HASIL KAJI SELIDIK / MAKLUM BALAS KOMUNITI/PENERIMA MANFAAT	Seramai 30 pensyarah kursus JKM telah menghadiri kursus BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II 2024/2025. Hasil dapatan dari kursus ini menunjukan pengetahuan dan pemahaman pensyarah kursus terhadap OBE dan pembinaan rubrik jelas dan mereka dapat menghasilkan rubrik yang selaras dengan kehendak kurikulum. Kesemua Rubrik telah disemak oleh Subject Matter Expert (SME) dan pensyarah kursus telah pun membuat permurnian rubrik masing-masing.
GAMBAR AKTIVITI/ PROGRAM	LAMPIRAN 1
SENARAI JAWATANKUASA PELAKSANA	1. Penasihat Muhammad Faiz Bin Abdullah Ketua Jabatan Kejuruteraan Mekanikal 2. Pengarah Program Noor Haznida Binti Bakar Penyelaras Kurikulum JKM 3. Timbalan Pengarah Program Mohd Sharizan Bin Mohd Sharif 4. Setiausaha Amalina Kamilah Binti Ibrahim

	5. Jawatankuasa Persiapan Tempat Mohd Nasir Bin Kamaruddin 6. Jawatankuasa Majlis Perasmian Penutup Roslan Bin Kamaruddin 7. Jawatankuasa Teknikal & Multimedia Muhamad Hanif Bin Selamat
PAUTAN MEDIA CETAK/ MEDIA SOSIAL (Jika ada)	

PENGESAHAN LAPORAN :

Disediakan oleh:

.....
NOOR HAZNIDA BINTI BAKAR
PENYELARAS KURIKULUM

Disahkan oleh:

.....
MUHAMMAD FAIZ BIN ABDULLAH
KETUA JABATAN KEJURUTERAAN MEKANIKAL

LAMPIRAN 1

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
SELANGOR DARUL EHSAN

Tel.: 603-51634000
Faks.: 603-55691903

MEMO

JABATAN KEJURUTERAAN MEKANIKAL

Rujukan kami: 100-1/5/2 jilid 5 (81)	Tarikh: 31/12/2024
Perkara	**Bengkel Intepretasi Kurikulum, OBE dan Pembinaan Rubrik Sesi II:2024/2025**
Kepada	**Seperti Lampiran**
Salinan	**KJMSK, KJPA**
Daripada	**Ketua Jabatan Kejuruteraan Mekanikal**

YBrs. Dr/Tuan/Puan,

Dengan hormatnya merujuk kepada perkara di atas.

2. Sukacita dimaklumkan bahawa Jabatan Kejuruteraan Mekanikal akan menganjurkan Bengkel Intepretasi Kurikulum, OBE dan Pembinaan Rubrik penilaian berterusan bagi sesi II:2024/2025 seperti ketetapan berikut:

Tarikh : 7 Januari 2025
Masa : 8.00pg – 5.00 ptg
Tempat : Bilik Mesyuarat JKM

3. Sehubungan itu, semua pensyarah yang terlibat secara langsung sebagai tenaga pengajar seperti di Lampiran bagi sesi II 2024/2025 adalah diwajibkan hadir.

Segala kerjasama daripada semua amatlah diharapkan dan didahului dengan ucapan terima kasih.

Sekian, terima kasih.

" MALAYSIA MADANI"

" BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(MUHAMMAD FAIZ BIN ABDULLAH)
Ketua Jabatan
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

Lampiran

TENTATIF BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II:2024/2025

Masa **Tarikh**	**9.00 - 13.00**	**13.00 -14.00**	**14.00-15.00**	**15.00 – 17.00**
7/1/2025	Interpretasi Kurikulum OBE & Penjajaran Konstruktif Pemetaan Assessment ke Profil Pengetahuan (DK), Penyelesaian Masalah (DP) dan Aktiviti Kejuruteraan (NA)	Makan Tengahari/ Solat Zuhur	Pembentukan Jadual Spesifikasi Ujian Berterusan (CIST) dan Pembinaan rubrik	Semakan rubrik oleh SME

SENARAI PESERTA BENGKEL INTEPRETASI KURIKULUM, OBE DAN PEMBINAAN RUBRIK SESI II:2024/2025

1. MOHD SHARIZAN BIN MOHD SHARIF (KPDKM)
2. MUHAMMAD HANIF BIN SELAMAT (KPDMP)
3. NURUS SADIQIN BT ABDUL RAZAK KHAN (KPKJA)
4. NOOR HAZNIDA BINTI BAKAR (URUSETIA)
5. MOHAMAD KHIRUDIN BIN AMDAN
6. DR. NORASIAH BT MUHAMMAD
7. TS. WAN MAJDAH BINTI TON MAMAT
8. ZETTY ROHAIZA BINTI MOHD SAHAK@ISHAK
9. SHARIZA AZWIN BINTI YAHYA
10. NURAZLINDA BINTI YAHYA @ MUHAMMED
11. TS. NOORAZLAN BIN MOHD SAMSUDDIN
12. ASRI BIN MAT DESA
13. TEOH THEAN HIN
14. DR. KHAIRULNIZAM B. KASIM
15. DR. MOHD SHAHROM BIN ISMAIL
16. ZULKHAIRI B KHAIRUDIN
17. AHMAD FAKARUDDIN BIN MOHD FAUZI
18. MOHD FAUZI BIN DERANI
19. AMALINA KAMILAH BINTI IBRAHIM
20. ALIAS BIN OTHMAN
21. MOHD NASIR BIN KAMARUDDIN
22. ISHAK BIN HASAN
23. MOHD HARIZ BIN SAMIAN
24. WAN NORHAZLIM BT WAN MUSTAFA
25. NORLIDAWATI BINTI MOHAMAD
26. NURHIDAYA BT MUSA
27. DR. MOHD ELIAS BIN DAUD
28. ANI BINTI YAAKUB
29. BRYAN HEE TZE KEON
30. ISNURAINI BINTI KASSIM @ ISMAIL
31. NGAI CHOOI HOONG

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN POLITEKNIK DAN KOLEJ KOMUNITI

EDISI PERTAMA

ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN POLITEKNIK DAN KOLEJ KOMUNITI

Terbitan Edisi Pertama

Hak cipta terpelihara. Mana–mana bahagian penerbitan ini tidak dibenarkan untuk disalin, disimpan dalam apa-apa bentuk sama ada secara elektronik, mekanikal, penggambaran semula dan perakaman atau apa-apa cara yang memungkinkan untuk diterbit semula tanpa izin daripada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pendidikan Tinggi.

Diterbitkan oleh:

Bahagian Peperiksaan dan Penilaian
Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pendidikan Tinggi
Aras 6, Galeria PjH
Jalan P4W, Persiaran Perdana Presint 4
62100 Putrajaya

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No. Faks : 03 – 8888 5634
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ISBN : e ISBN 978-967-0763-75-0

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Terbitan ini boleh dimuat turun dari laman web : www.mypolycc.edu.my
Edisi Pertama : Tahun 2025

PRAKATA

Bahagian Peperiksaan dan Penilaian, Jabatan Pendidikan Politeknik dan Kolej Komuniti ingin merakamkan penghargaan terima kasih atas sokongan dan kerjasama semua pihak dalam menjayakan proses pembangunan Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama.

Arahan ini ialah panduan dan rujukan bagi warga politeknik dan kolej komuniti serta semua pihak yang terlibat dalam pelaksanaan program pengajian di institusi. Diharapkan, arahan ini menjadi sumber rujukan utama yang bermanfaat kepada institusi sekaligus akan meningkatkan dan memantapkan kefahaman semua pihak dalam proses pengurusan peperiksaan dan kaedah penilaian.

Berikutan penerbitan ini, Arahan-Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Edisi 6, Jun 2019 dan Peraturan Peperiksaan Dan Kaedah Penilaian Kolej Komuniti Edisi 2017 dengan ini **DIBATALKAN** berkuat kuasa serta-merta. Segala rujukan berkaitan arahan peperiksaan dan kaedah penilaian hendaklah merujuk kepada dokumen terkini.

KANDUNGAN

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BAHAGIAN 1

PENGENALAN

1.1. NAMA DAN TARIKH BERKUAT KUASA

Dokumen ini dinamakan 'Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama'. Segala arahan di dalam buku ini berkuat kuasa pada tahun 2025.

1.2. TUJUAN

Dokumen arahan ini merupakan satu ketetapan bagi semua politeknik dan kolej komuniti dalam mengendalikan segala urusan yang berkaitan dengan peraturan peperiksaan dan kaedah penilaian.

1.3. HAK DAN TANGGUNGJAWAB

Setiap politeknik dan kolej komuniti bertanggungjawab memastikan bahawa garis panduan berkaitan dengan pendekatan pembelajaran, penilaian, penyeliaan dan pentadbiran peperiksaan kepada semua pelajar yang berdaftar, menepati peraturan-peraturan yang diluluskan oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik dan Jawatankuasa Peperiksaan Pusat Kolej Komuniti. Dalam keadaan tertentu, pengarah boleh menggunakan budi bicaranya melalui Mesyuarat Jawatankuasa Peperiksaan di peringkat institusi.

1.4. TAFSIRAN

Dalam arahan ini, melainkan jika konteksnya menghendaki makna yang lain:

"Alat Elektronik" pelbagai jenis peranti atau teknologi yang membantu seseorang untuk meniru atau mendapatkan maklumat semasa ujian atau peperiksaan.

"Arahan" bermakna suatu ketetapan yang diputuskan oleh pihak pengurusan Jabatan Pendidikan Politeknik dan Kolej Komuniti yang terpakai kepada program-program pengajian yang membawa kepada penganugerahan.

"Bencana" bermakna musibah yang menyebabkan gangguan kepada aktiviti dan urusan yang melibatkan kerosakan dan kerugian yang melangkaui kemampuan untuk diatasi.

"Cubaan Menipu" bermakna suatu perbuatan atau hal menipu bagi tujuan penilaian yang dijalankan.

"Cubaan Meniru" bermakna memiliki bersamanya sebarang nota/ maklumat/ dokumen yang disediakan sebelumnya dalam apa-apa jua bentuk dan dengan apa-apa jua cara atau mendapatkannya dari mana-mana punca bagi tujuan untuk menjawab soalan peperiksaan yang sedang dijalankan.

"Gred" bermakna satu tahap pencapaian penilaian dalam bentuk abjad yang menunjukkan prestasi pelajar bagi sesuatu kursus.

"Himpunan Purata Nilai Mata (HPNM)" bermakna Purata Nilai Mata yang diperolehi oleh seseorang pelajar di dalam semua peperiksaan yang diambil sehingga kini.

"Jawatankuasa Peperiksaan Institusi" bermakna satu Jawatankuasa Peperiksaan Politeknik atau Jawatankuasa Peperiksaan Kolej Komuniti yang bertanggungjawab terhadap perjalanan proses peperiksaan dan penilaian serta membuat keputusan penilaian bagi semua kursus.

"Jawatankuasa Peperiksaan Pusat Kolej Komuniti" bermakna jawatankuasa yang bertanggungjawab terhadap penganugerahan sijil kepada pelajar kolej komuniti.

"Keperluan Program" bermakna suatu keperluan yang dikehendaki bagi sesuatu program yang perlu dipenuhi dan disempurnakan oleh seseorang pelajar untuk melayakkannya dianugerahkan sijil akademik.

"Ketua Jabatan Akademik (KJ)/Ketua Program (KPro)" bermakna seseorang pegawai yang dilantik oleh pihak pengurusan Jabatan Pendidikan Politeknik dan Kolej Komuniti bagi mengetuai sesebuah jabatan/program akademik di institusi.

"Kredit" bermakna ukuran kuantitatif yang melambangkan beban pembelajaran untuk mencapai hasil pembelajaran tertentu.

"Kursus Elektif" bermakna kursus yang fleksibel daripada segi penawarannya dan ditetapkan bilangan kredit minimum merujuk kepada standard bidang yang perlu diambil pelajar untuk bergraduat.

"Kursus Pengkhususan" bermakna kursus yang ditawarkan bagi program yang mempunyai pengkhususan dalam bidang tertentu.

"Kursus Prasyarat" bermakna kursus yang wajib lulus untuk membolehkan pelajar mengambil kursus yang disyaratkan.

"Kursus Teras" bermakna kursus teras umum dan kursus teras disiplin bagi program.

"Kursus Wajib" bermakna kursus yang wajib diambil bagi semua pelajar yang mendaftar di politeknik dan kolej komuniti.

"Latihan Industri (LI)" bermakna satu kursus yang dilaksanakan melalui pendekatan *experiential learning* dengan menempatkan pelajar di sesebuah organisasi untuk menjalani latihan praktikal yang diselia dalam industri yang dipilih, sama ada di luar atau di dalam negara, dalam jangka masa yang ditetapkan sebelum mereka layak dianugerahkan sijil akademik.

"Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik" bermakna lembaga yang bertanggungjawab terhadap penganugerahan sijil kepada pelajar politeknik.

"Lulusan" bermakna pelajar yang telah diperaku untuk dianugerahkan sijil akademik oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik dan Jawatankuasa Peperiksaan Pusat Kolej Komuniti.

"Mata Kredit" bermakna hasil darab Nilai Mata dengan Kredit bagi sesuatu kursus.

"Memberi Tiru" bermakna bersubahat dengan pelajar yang lain dalam aktiviti-aktiviti meniru atau cubaan meniru.

"Menipu" bermakna mengenakan tipu atau memperdaya dalam apa-apa jua bentuk dan dengan apa-apa jua cara dalam penilaian.

"Meniru" bermakna menggunakan nota/maklumat/dokumen yang disediakan sebelumnya dalam apa-apa jua bentuk dan dengan apa-apa jua cara atau mendapatkannya dari mana-mana punca bagi tujuan untuk menjawab soalan peperiksaan kursus yang sedang dijalankan.

"Nilai Mata" bermakna suatu nilai dalam bentuk angka yang telah diberi ke atas kumpulan markah seperti yang terdapat di dalam Sistem Gred.

"Pelajar" bermakna seseorang yang berdaftar untuk mengikuti secara sah pengajian akademik di sesebuah politeknik dan kolej komuniti.

"Pelajar Semester Akhir" bermakna pelajar yang sedang mengambil baki kursus yang diwajibkan bagi menamatkan sesuatu program.

"Pelanggaran Peraturan Peperiksaan" bermakna apabila seseorang pelajar itu didapati melakukan perkara-perkara yang dilarang seperti yang disenaraikan di dalam Bahagian 3 : Peraturan Peperiksaan Akhir/Pentaksiran Akhir.

"Pemansuhan Markah Penilaian" bermakna menarik balik gred yang telah diberi kepada seseorang pelajar kerana melanggar peraturan peperiksaan. Pelajar tersebut kemudiannya akan diberi Gred 'F' (Nilai Mata = 0.00) dan dikira telah mengambil dan gagal kursus berkenaan. Nilai Mata ini akan diambil kira dalam pengiraan Purata Nilaian Mata dan Himpunan Purata Nilaian Mata pada semester semasa**.**

"Penangguhan Pengajian" bermakna pelajar boleh diberi status penangguhan pengajian dengan kelulusan Pengarah atas sebab-sebab tertentu.

"Pengecualian Kursus" bermakna proses mengecualikan seseorang pelajar daripada mengambil kursus dalam program yang diikuti atas sebab-sebab tertentu. Pengecualian ini tidak menyebabkan pelajar mendapat kredit bagi kursus yang dikecualikan.

“Penggantungan Pengajian” bermakna suatu bentuk hukuman yang dikenakan ke atas seseorang pelajar yang disabitkan dengan pelanggaran Akta 174 iaitu pelajar berkenaan tidak dibenarkan mengikuti pengajiannya bagi sesuatu tempoh yang ditetapkan. Tempoh penggantungan tersebut akan diambil kira sebagai tempoh pengajian di politeknik atau kolej komuniti.

“Penilaian” bermakna suatu proses tentang membuat pertimbangan dan keputusan prestasi pelajar dan prestasi program bersandarkan kepada standard tanda aras yang dinyatakan oleh kriteria prestasi bagi sesuatu hasil pembelajaran berdasarkan bukti yang telah diperolehi daripada proses pentaksiran.

“Penilaian Khas (PK)” bermakna satu bentuk penilaian yang hanya dibenarkan kepada pelajar yang akan menjalani kursus latihan industri/*work based learning* pada semester akhir dan memenuhi syarat-syarat yang ditetapkan.

“Peperiksaan Akhir” bermakna pentaksiran sumatif yang dilaksanakan pada setiap akhir semester di luar waktu pengajaran dan pembelajaran.

“Peperiksaan Akhir Khas (PAK)” bermakna peperiksaan yang diadakan untuk pelajar-pelajar yang tidak menghadiri peperiksaan akhir dengan sebab-sebab tertentu dan diluluskan oleh Pengarah institusi.

“Peraturan Pemarkahan” bermakna satu set spesifikasi pemarkahan yang dijadikan panduan kepada pemeriksa skrip jawapan. Ia terdiri daripada skema pemarkahan dan rubrik pemarkahan.

“Perkara Berkaitan Undang-Undang” bermakna merujuk kepada segala hal, konsep, atau isu yang berkaitan dengan peraturan, kaedah, dan prinsip yang mengawal atau mentadbir tingkah laku individu dan organisasi dalam masyarakat. Ia melibatkan pelbagai aspek yang berbeza, termasuklah hak, kewajipan, kewenangan, dan proses yang diperlukan untuk memastikan keadilan dan ketertiban dalam masyarakat.

“Pihak Berkuasa” bermakna individu, agensi, atau organisasi yang diberi mandat oleh undang-undang untuk menguatkuasakan peraturan, memantau pelaksanaan aktiviti, serta mengambil tindakan terhadap pelanggaran demi memastikan keselamatan, ketertiban, dan kesejahteraan masyarakat.

"Pindahan Kredit" bermakna proses memindahkan kredit kursus yang telah diambil oleh pelajar dalam sesuatu program ke program yang lain yang membawa kepada penganugerahan kelayakan yang ditawarkan oleh institusi yang sama atau institusi yang berbeza.

"Purata Nilai Mata (PNM)" bermakna Purata Nilai Mata Kredit seseorang pelajar bagi sesuatu semester.

"Rayuan" bermakna permohonan pertimbangan semula atas sesuatu keputusan atau hukuman secara bertulis oleh seseorang pelajar.

"Semester Pendek" bermakna semester pengajian yang dilaksanakan pada Cuti Akhir Semester Sesi II berdasarkan Kalendar Akademik Program Pengajian Politeknik dan Kolej Komuniti dan Kalendar Akademik Program Sarjana Muda Politeknik tahun semasa.

"Sijil Akademik" bermakna penganugerahan dalam bentuk sijil bagi program sijil, diploma dan sarjana muda yang diberikan kepada pelajar setelah berjaya memenuhi keperluan program.

"Skrip Jawapan" bermakna naskhah jawapan yang dihantar oleh pelajar bagi pentaksiran berterusan dan peperiksaan akhir/pentaksiran akhir yang dijalankan.

1.5. SINGKATAN

KPro : Ketua Program
PA : Peperiksaan Akhir/Pentaksiran Akhir
PB : Pentaksiran Berterusan
KJ : Ketua Jabatan Akademik
TPA/TP : Timbalan Pengarah Akademik/Timbalan Pengarah
WBL : *Work Based Learning*
SNM : Sistem Nilai Mata

BAHAGIAN 2

PERATURAN PENILAIAN

2.1. MENDAFTAR KURSUS

2.1.1. Pendaftaran kursus telah dilaksanakan mengikut ketetapan kalendar akademik semasa.

2.1.2. Pelajar hendaklah mencukupkan jumlah kredit yang dibenarkan dengan menambah kursus-kursus lain yang ditawarkan pada semester semasa.

2.1.3. Ketua Jabatan/Ketua Program bertanggungjawab untuk memastikan pelajar telah mendaftar kursus.

2.1.4. Bagi kes yang melibatkan pelajar berpindah dari institusi lain, pendaftaran kursus perlu dilaksanakan selepas urusan pendaftaran pengajian selesai di Jabatan/Unit Hal Ehwal Pelajar merujuk kepada panduan berkaitan pengambilan dan pengurusan pelajar yang sedang berkuat kuasa.

2.2. KREDIT KURSUS

2.2.1. Kredit bagi setiap kursus ialah seperti yang termaktub di dalam dokumen kurikulum yang sedang berkuat kuasa.

2.2.2. Jumlah kredit maksimum bagi satu semester ialah 20 kredit atau seperti yang ditetapkan di dalam dokumen kurikulum/manual akreditasi.

2.2.3. Jumlah kredit minimum bagi satu semester seperti berikut:

Jadual 2.2.3 : Jumlah kredit minimum

PROGRAM PENGAJIAN	JUMLAH JAM KREDIT MINIMUM
Diploma	12
Sijil	9

2.2.4. Pindahan kredit dan pengecualian kursus boleh dimohon dalam tempoh **TIGA (3)** minggu selepas minggu pengajian bermula sekiranya memenuhi kriteria yang ditetapkan di dalam panduan pindahan kredit dan pengecualian kursus yang sedang berkuat kuasa.

2.3. MENENTUKAN JUMLAH KREDIT

2.3.1. Pelajar dibenarkan mengambil kurang daripada jumlah kredit minimum dalam satu semester dengan mendapat sokongan Penasihat Akademik dan kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah sekiranya:

i. pelajar akan menjalani Latihan Industri pada semester berikutnya; atau
ii. pelajar mengikuti semester pendek; atau
iii. pelajar Kursus Secara Sambilan (KSS), atau apa-apa program seumpamanya; atau
iv. pelajar mendapat keputusan Kedudukan Bersyarat (KS) pada semester sebelumnya.

2.3.2. Pelajar dibenarkan mengambil lebih daripada jumlah kredit maksimum dalam satu semester dengan sokongan Penasihat Akademik dan kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah sekiranya:

i. pelajar akan menjalani Latihan Industri pada semester berikutnya; atau
ii. pelajar telah lulus semua kursus pada semester sebelumnya dan mendapat Himpunan Purata Nilai Mata bersamaan atau lebih daripada 3.00 pada semester sebelumnya.

2.3.3. Pelajar hendaklah mencukupkan jumlah kredit minimum bagi setiap semester dengan mengambil kursus-kursus yang ditawarkan pada semester berkenaan dengan kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah.

2.3.4. Pelajar bertanggungjawab menyemak jumlah kredit terkumpul agar boleh menamatkan pengajian dalam tempoh yang ditentukan.

2.4. MENAMBAH KURSUS

2.4.1. Pelajar boleh menambah kursus dengan syarat tidak melebihi jumlah kredit yang dibenarkan bagi semester berkenaan.

2.4.2. Penambahan kursus boleh dibuat pada minggu ke **TIGA (3)** sehingga minggu ke **ENAM (6)** sesi pengajian. Pelajar hendaklah terlebih dahulu mendapatkan nasihat dan sokongan daripada Penasihat Akademik dan/atau Ketua Program serta mendapat kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah.

2.4.3. Selepas daripada tempoh yang ditetapkan, pelajar tidak dibenarkan membuat sebarang penambahan kursus.

2.5. MENGGUGUR KURSUS

2.5.1. Pelajar boleh menggugur kursus dengan syarat tidak kurang daripada jumlah kredit minimum.

2.5.2. Pengguguran kursus boleh dibuat pada minggu ke **TIGA (3)** sehingga minggu ke **ENAM (6)** sesi pengajian. Pelajar hendaklah terlebih dahulu mendapatkan nasihat dan sokongan daripada Penasihat Akademik dan/atau Ketua Program serta mendapat kelulusan Ketua Jabatan/Timbalan Pengarah Akademik/Timbalan Pengarah.

2.5.3. Selepas daripada tempoh yang ditetapkan, pelajar tidak dibenarkan membuat sebarang pengguguran kursus.

2.6. MENGULANG KURSUS

2.6.1. Bagi kursus wajib, kursus teras dan kursus pengkhususan pelajar perlu:

i. mengulang mana-mana kursus yang gagal pada semester berikutnya sekiranya kursus itu ditawarkan kecuali pada keadaan yang tidak memungkinkan pelajar berbuat demikian dan mendapat kelulusan daripada Pengarah/Timbalan Pengarah Akademik/Timbalan Pengarah/Ketua Jabatan Akademik; dan

ii. mengikuti semula aktiviti-aktiviti pembelajaran bagi kursus-kursus berkenaan sepenuhnya.

2.6.2. Bagi kursus elektif pelajar perlu:

i. mengulang semula kursus yang gagal, sama ada mengambil kursus yang sama ATAU mana-mana kursus lain pada semester berikut sekiranya kursus itu ditawarkan kecuali pada keadaan yang tidak memungkinkan pelajar berbuat demikian dan mendapat kelulusan daripada Pengarah/Timbalan Pengarah Akademik/Timbalan Pengarah/Ketua Jabatan; dan

ii. memenuhi keperluan jam kredit minimum kursus elektif berdasarkan kurikulum yang sedang berkuat kuasa; dan

iii. mengikuti semula aktiviti-aktiviti pembelajaran bagi kursus-kursus berkenaan sepenuhnya.

2.6.3. Bagi kes pelajar yang akan menjalani kursus latihan industri/*Work Based Learning* pada semester akhir yang gagal **DUA (2)** atau lebih kursus pada semester sebelumnya dikehendaki mengulang kursus.

2.7. MEMPERBAIKI GRED KURSUS

Bagi pelajar yang mendapat lulus dengan Gred C-, D+ dan D bagi mana-mana kursus:

2.7.1. pelajar dibenarkan untuk memperbaiki gred kursus sekali sahaja sepanjang pengajian bagi kursus tersebut kecuali bagi kursus-kursus *Work Based Learning*.

2.7.2. pelajar perlu mengikuti semula semua aktiviti pembelajaran bagi kursus berkenaan sepenuhnya pada mana-mana semester berikutnya termasuk semester pendek.

2.7.3. keputusan bagi pelajar yang memperbaiki gred kursus akan diambil daripada gred terbaik.

2.7.4. jumlah kredit yang perlu diambil oleh pelajar yang memperbaiki gred kursus tidak boleh melebihi dua puluh (20) kredit kecuali pada keadaan-keadaan

yang tidak memungkinkan pelajar berbuat demikian dan mendapat kelulusan Timbalan Pengarah Akademik/Timbalan Pengarah/Ketua Jabatan.

2.7.5. tempoh maksimum pengajian bagi sesuatu kursus masih terpakai kepada pelajar yang memperbaiki gred kursus.

BAHAGIAN 3

PERATURAN PEPERIKSAAN AKHIR

3.1. SYARAT LAYAK MENDUDUKI PEPERIKSAAN AKHIR

3.1.1. Pelajar telah memenuhi semua syarat berikut bagi melayakkan diri menduduki peperiksaan akhir:

i. mendaftar pengajian pada sesi semasa;
ii. mendaftar kursus pada sesi semasa;
iii. peratus kehadiran minimum ialah 80% kuliah/tutorial/amali bagi jangka masa yang ditetapkan; dan
iv. lulus Pentaksiran Berterusan (PB) bagi kursus yang mempunyai komponen peperiksaan akhir.

3.1.2. Sekiranya pelajar tidak layak menduduki peperiksaan akhir atas sebab kehadiran kurang dari 80%, keseluruhan penilaian pelajar tersebut adalah terbatal. Pelajar akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan.

3.1.3. Jika seseorang pelajar itu telah digantung pengajian dan keputusan rayuan gagal atas tindakan tatatertib mengikut Akta 174;

i. pelajar tidak layak untuk menduduki peperiksaan akhir;
ii. penilaian semua kursus dalam semester berkenaan bagi pelajar tersebut adalah terbatal;
iii. pelajar perlu mengambil semula kursus tersebut; dan
iv. semester berkenaan diambil kira sebagai tempoh pengajian.

3.2. KEHADIRAN SEMASA PEPERIKSAAN AKHIR

3.2.1. Pelajar hendaklah menduduki sesuatu peperiksaan akhir pada masa yang ditetapkan bagi kursus-kursus yang memerlukannya berbuat demikian kecuali mendapat kebenaran Pengarah bagi perkara berikut:

i. disahkan sakit oleh pegawai perubatan kerajaan atau swasta; atau

ii. menghadapi kes-kes kecemasan seperti kes kematian keluarga terdekat, kemalangan, bencana alam atau kebakaran dengan pengesahan dari pihak berkuasa; atau

iii. berurusan mana-mana perkara undang-undang dengan pengesahan daripada pihak berkuasa; atau

iv. menyertai aktiviti yang diluluskan oleh Pengarah dengan mengemukakan surat pengesahan daripada pihak penganjur.

3.2.2. Pelajar atau wakilnya hendaklah memaklumkan ketidakhadiran dengan kadar segera kepada Pengarah.

3.2.3. Dalam keadaan tertentu, Pengarah boleh menggunakan budi bicaranya dalam melaksanakan arahan-arahan pada Perkara 3.2.1 (i), 3.2.1 (ii) dan 3.2.1 (iii).

3.2.4. Bagi pelajar yang tidak menghadiri peperiksaan akhir dengan kebenaran Pengarah dibenarkan menduduki Peperiksaan Akhir Khas dengan merujuk kepada Perkara 5.4.1**.**

3.2.5. Bagi pelajar yang tidak menghadiri peperiksaan akhir tanpa alasan yang munasabah, pelajar akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan. Pelajar dikira telah mengambil dan gagal kursus berkenaan.

3.2.6. Bagi pelajar yang tidak menghadiri peperiksaan akhir atas sebab dihalang daripada menduduki peperiksaan sebagai satu hukuman yang diputuskan oleh pihak berkuasa tatatertib akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan. Pelajar dikira telah mengambil dan gagal kursus berkenaan.

3.3. ARAHAN–ARAHAN AM PEPERIKSAAN AKHIR

Semua calon hendaklah mematuhi arahan–arahan berikut:

3.3.1. Sebelum peperiksaan akhir :

i. calon dikehendaki hadir untuk menduduki peperiksaan akhir pada tarikh, masa dan tempat yang telah ditetapkan;

ii. calon diminta berada di luar dewan/bilik peperiksaan lima belas (15) minit sebelum peperiksaan akhir bermula;

iii. calon dilarang masuk ke dalam dewan/bilik peperiksaan sehingga diarahkan berbuat demikian;

iv. calon hendaklah masuk dengan tertib mengikut laluan yang telah ditetapkan;

v. calon yang lewat lebih daripada tiga puluh (30) minit selepas peperiksaan akhir dimulakan dilarang masuk ke dalam dewan/bilik peperiksaan dan seterusnya tidak boleh menduduki peperiksaan akhir bagi kursus tersebut;

vi. calon yang lewat tetapi tidak melebihi tiga puluh (30) minit daripada waktu peperiksaan akhir bermula akan dibenarkan menduduki peperiksaan akhir tetapi waktu tamat peperiksaan akhir bagi kursus tersebut adalah sama dengan pelajar yang lain;

vii. calon dilarang membawa masuk ke dalam atau keluar dewan/bilik peperiksaan sebarang alat/bahan yang terdapat catatan bertulis kecuali yang dibenarkan oleh Pengawas Peperiksaan;

viii. calon dikehendaki membawa kad pelajar. Kegagalan membawa kad pelajar boleh menyebabkan calon dihalang daripada memasuki dewan/bilik peperiksaan untuk menduduki peperiksaan akhir kecuali mendapat kebenaran bertulis daripada Pegawai Peperiksaan untuk menduduki kursus berkenaan sahaja;

ix. calon yang berkeperluan khas semasa peperiksaan akhir perlu mengemukakan permohonan secara bertulis untuk dipertimbangkan oleh Pengarah;

x. calon dilarang menggunakan sebarang alat elektronik dan komunikasi kecuali yang dibenarkan oleh pengawas peperiksaan.

3.3.2. Semasa peperiksaan akhir:

i. calon hendaklah duduk di tempat yang telah ditentukan setelah masuk ke dewan/bilik peperiksaan;

ii. calon dilarang meniru, cuba meniru atau memberi tiru dengan apa-apa cara jua semasa peperiksaan akhir;

iii. calon hendaklah memastikan telah menerima kertas soalan yang betul dan lengkap. Sekiranya tidak, calon hendaklah memaklumkan pengawas peperiksaan yang bertugas;

iv. calon hendaklah membaca dengan teliti dan mematuhi semua arahan yang tercetak pada soalan peperiksaan akhir dan muka hadapan skrip jawapan;

v. calon hanya boleh mula dan berhenti menjawab apabila diarahkan berbuat demikian;

vi. calon dikehendaki mengisi maklumat di muka hadapan buku jawapan dan menurunkan tandatangan pada bahagian yang disediakan setelah diarahkan oleh pengawas peperiksaan;

vii. calon dilarang membuka kertas soalan yang telah diedarkan sebelum diarah berbuat demikian;

viii. calon dilarang meninggalkan dewan/bilik peperiksaan dalam tempoh tiga puluh (30) minit selepas peperiksaan akhir bermula dan lima belas (15) minit sebelum peperiksaan akhir tamat. Dalam keadaan tertentu yang memerlukan calon keluar dan masuk semula, kebenaran daripada pengawas peperiksaan adalah diperlukan dan calon hendaklah berada di bawah pengawasan;

ix. calon dilarang membuat sebarang perlakuan yang boleh mengganggu calon lain dan kelancaran peperiksaan akhir;

x. calon hendaklah memastikan bahawa skrip jawapan disusun dan diikat dengan sempurna pada akhir peperiksaan sebelum dikumpulkan oleh pengawas peperiksaan;

xi. calon hendaklah memastikan semua alatan yang digunakan disusun seperti yang dikehendaki oleh pengawas peperiksaan;

xii. calon hanya dibenarkan keluar dari dewan/bilik peperiksaan selepas mendapat arahan daripada pengawas peperiksaan;

xiii. calon dilarang makan dan minum di dalam dewan/bilik peperiksaan.

BAHAGIAN 4

PENYELEWENGAN AKADEMIK DAN PELANGGARAN PERATURAN

4.1. PENYELEWENGAN AKADEMIK

4.1.1. Pelajar tidak dibenarkan melakukan mana-mana penyelewengan akademik seperti berikut:

i. meniru, memberi tiru, cubaan meniru atau cubaan memberi tiru dalam penilaian;

ii. menipu atau cubaan menipu dalam penilaian.

4.2. LARANGAN TERHADAP PLAGIARISME

4.2.1. Larangan terhadap plagiarisme ini ialah seperti yang termaktub di dalam Akta 174.

4.2.2. Seseorang pelajar tidak boleh memplagiat apa-apa idea, penulisan, data atau ciptaan orang lain.

4.2.3. Bagi maksud ini, plagiarisme termasuklah:

i. perbuatan mengambil sesuatu idea, penulisan, data atau ciptaan orang lain dan mendakwa idea, penulisan, data atau ciptaan itu adalah hasil dapatan atau ciptaannya sendiri; atau

ii. suatu cubaan untuk menonjolkan atau perbuatan menonjolkan, dalam apa-apa cara, bahawa dia ialah sumber asal atau pencipta sesuatu idea, penulisan, data atau ciptaan yang adalah sebenarnya diambil daripada sumber lain.

4.2.4. Tanpa menjejaskan keluasan Perkara 4.2.3, seseorang pelajar memplagiat apabila:

i. menerbitkan, dengan dirinya sebagai pengarang, suatu ringkasan, artikel, kertas saintifik atau akademik atau buku yang pada keseluruhannya atau sebahagiannya ditulis oleh beberapa orang lain;

ii. menggabungkan dirinya atau membenarkan dirinya digabungkan sebagai pengarang bersama sesuatu ringkasan, artikel, kertas saintifik atau akademiknya, atau buku, apabila dia tidak langsung membuat apa-apa sumbangan bertulis kepada ringkasan, artikel, kertas saintifik atau akademik, atau buku itu;

iii. memaksa orang lain untuk memasukkan namanya dalam senarai penyelidik bersama bagi projek penyelidikan tertentu atau dalam senarai penyelidik bersama bagi penerbitan apabila dia tidak membuat apa-apa sumbangan yang boleh melayakkan dirinya sebagai penyelidik bersama atau pengarang bersama;

iv. memetik data akademik yang adalah hasil penyelidikan yang dijalankan oleh beberapa orang lain, seperti dapatan makmal atau dapatan kerja lapangan, atau data yang diperoleh melalui penyelidikan perpustakaan, sama ada diterbitkan atau tidak diterbitkan, dan menggabungkan data tersebut sebagai sebahagian daripada penyelidikan akademiknya tanpa memberi pengiktirafan sewajarnya kepada sumber asal;

v. menggunakan data penyelidikan yang diperoleh melalui kerja usahasama dengan beberapa orang lain, sama ada atau tidak dengan orang lain itu anggota kakitangan atau pelajar institusi sebahagian daripada penyelidikan akademik yang berbeza yang lain, atau bagi penerbitan atas namanya sendiri sebagai pengarang tunggal, tanpa memperoleh keizinan penyelidik bersamanya sebelum memulakan penyelidikan peribadinya atau sebelum menerbitkan data;

vi. mentranskripsikan idea atau ciptaan orang lain yang disimpan dalam apa-apa jua bentuk, sama ada bertulis, bercetak atau tersedia dalam bentuk elektronik, atau dalam bentuk slaid, atau dalam apa-apa jua bentuk pengajaran atau perkakas penyelidikan atau dalam apa-apa bentuk lain dan mengaku sama ada secara langsung atau tidak langsung bahawa dia ialah pencipta idea atau ciptaan itu;

vii. menterjemah tulisan atau ciptaan orang lain daripada satu bahasa kepada bahasa lain sama ada atau tidak secara keseluruhan atau sebahagian, dan kemudian mengemukakan terjemahan itu ke dalam apa-apa jua bentuk atau cara sebagai penulisannya atau ciptaannya sendiri;

viii. memetik idea daripada penulisan atau ciptaan orang lain dan membuat beberapa pengubahsuaian tanpa rujukan sewajarnya

kepada sumber asal dan menyusun semula idea itu dalam apa apa cara yang seolah-olah dia ialah pencipta idea-idea itu.

4.3. TINDAKAN PELANGGARAN PERATURAN

4.3.1. Seseorang pelajar yang didapati melanggar mana-mana Arahan-Arahan Am Peperiksaan Akhir pada Perkara 3.3.1 dan 3.3.2 boleh dikenakan tindakan seperti berikut:

i. amaran; atau

ii. dimansuhkan markah penilaian bagi kursus berkenaan dan diberikan Gred F dengan Nilai Mata 0.00.

4.3.2. Pelajar yang telah dibuktikan melakukan Perkara 4.1.1 atau Perkara 4.2 akan dimansuhkan penilaian bagi kursus berkenaan dan diberikan Gred F dengan Nilai Mata 0.00.

4.3.3. Seseorang pelajar yang digantung pengajian dan keputusan rayuan gagal atas tindakan tatatertib mengikut Akta 174;

i. penilaian bagi semua kursus yang diambil pelajar tersebut dalam semester berkenaan adalah terbatal;

iii. pelajar perlu mengambil semula kursus tersebut; dan

iii. semester berkenaan diambil kira sebagai tempoh pengajian.

4.3.4. Selain daripada Perkara 4.3.1, 4.3.2 dan 4.3.3, pelajar-pelajar yang melanggar Peraturan Peperiksaan juga boleh dikenakan tindakan tatatertib merujuk panduan dan peraturan am pelajar yang sedang berkuatkuasa.

BAHAGIAN 5

KAEDAH PENILAIAN

5.1. SISTEM NILAI MATA

5.1.1. Sistem penilaian politeknik dan kolej komuniti adalah berdasarkan kaedah penilaian kuantitatif prestasi pelajar di dalam sesuatu program yang dikenali sebagai Sistem Nilai Mata (SNM).

5.1.2. Mengikut Sistem Nilai Mata, prestasi pelajar bagi sesuatu kursus adalah berdasarkan kepada Sistem Gred yang mana pencapaian pelajar dinilai menggunakan dua (2) ukuran iaitu:

i. Purata Nilai Mata (PNM) atau *Grade Point Average* (GPA)

$$\textbf{PNM} = \frac{\text{Jumlah Mata Kredit yang diperolehi dalam semester semasa}}{\text{Jumlah Jam Kredit yang diambil di dalam semester semasa}}$$

ii. Himpunan Purata Nilai Mata (HPNM) atau *Cumulative Grade Point Average* (CGPA)

$$\textbf{HPNM} = \frac{\text{Jumlah Mata Kredit yang diperolehi hingga kini}}{\text{Jumlah Jam Kredit yang diambil hingga kini}}$$

5.1.3. Nilai mata bagi pelajar Latihan Industri dan *Work Based Learning* adalah seperti berikut:

i. penilaian Latihan Industri tidak akan diambil kira dalam menentukan Himpunan Purata Nilai Mata pelajar.

ii. penilaian *Work Based Learning* akan diambil kira dalam menentukan Himpunan Purata Nilai Mata pelajar.

5.2. SISTEM GRED

Markah yang diperolehi oleh pelajar di dalam sesuatu kursus akan diberi nilai mata dan gred mengikut seperti berikut:

Jadual 5.2.1 : Sistem Gred

MARKAH	NILAI MATA	GRED	STATUS*
90 - 100	4.00	A+	Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Cemerlang
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Kepujian
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Lulus
44 – 46	1.33	D+	Lulus
40 – 43	1.00	D	Lulus
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

*Nota : Status gred tidak terpakai bagi program-program tertentu

5.3. SYARAT LULUS KURSUS

Pelajar layak dinilai prestasi akademik dengan memenuhi syarat berikut:

5.3.1. Telah mencapai kehadiran 80% atau seperti yang ditetapkan bagi aktiviti pembelajaran yang diwajibkan bagi sesuatu kursus.

5.3.2. Lulus kedua-dua pentaksiran berterusan (PB) dan peperiksaan akhir/pentaksiran akhir (PA) bagi setiap kursus.

5.3.3. Markah lulus adalah seperti berikut:

i. Pentaksiran Berterusan = 40%; dan

ii. Pentaksiran Akhir = 40%; atau

iii. Peperiksaan Akhir = 20% (kecuali bagi program-program tertentu mengikut keperluan badan akreditasi).

5.3.4. Markah kumulatif pentaksiran berterusan (PB) dan peperiksaan akhir/pentaksiran akhir (PA) adalah menepati syarat lulus mengikut Sistem Gred.

5.4. PEPERIKSAAN AKHIR KHAS (PAK), PENILAIAN KHAS (PK) DAN PEMBERIAN STATUS GRED TIDAK LENGKAP (GRED T)

5.4.1. Peperiksaan Akhir Khas (PAK)

i. Pelajar yang layak dipertimbangkan untuk menduduki Peperiksaan Akhir Khas adalah seperti berikut:

a. disahkan sakit oleh pegawai perubatan kerajaan atau swasta; atau

b. menghadapi kes-kes kecemasan seperti kes kematian keluarga terdekat, kemalangan, bencana alam atau kebakaran dengan pengesahan dari pihak berkuasa; atau

c. berurusan mana-mana perkara undang-undang dengan pengesahan dari pihak berkuasa; atau

d. menyertai aktiviti yang diluluskan oleh Pengarah dengan mengemukakan surat pengesahan daripada pihak penganjur.

ii. Peperiksaan Akhir Khas juga dilaksanakan sekiranya peperiksaan akhir bagi mana-mana kursus pada semester berkenaan dibatalkan. Peperiksaan Akhir Khas akan diadakan pada masa dan tarikh yang sesuai bagi pelajar dan dipersetujui oleh Pegawai Peperiksaan.

iii. Sekiranya pelajar tidak hadir Peperiksaan Akhir Khas dengan sebab yang munasabah, markah **SIFAR (0)** akan diberikan bagi Peperiksaan Akhir Khas tersebut dan markah penilaian hanya akan dikira berdasarkan markah pentaksiran berterusan.

iv. Sekiranya pelajar tidak hadir tanpa sebab, pelajar akan diberi Gred F dengan Nilai Mata 0.00 bagi kursus berkenaan. Pelajar dikira telah mengambil dan gagal kursus berkenaan.

5.4.2. Penilaian Khas (PK)

i. Penilaian Khas adalah satu bentuk penilaian yang hanya dibenarkan kepada pelajar yang telah mengambil semua kursus bagi sesuatu program tidak termasuk Latihan Industri/*Work Based Learning* dan memenuhi syarat-syarat berikut:
   a. mendapat keputusan Kedudukan Baik (KB);
   b. gagal **SATU (1)** kursus sahaja;
   c. telah menduduki peperiksaan akhir (PA) bagi kursus berkenaan (jika berkaitan);
   d. tidak dikenakan tindakan tatatertib;
   e. keputusan pelajar yang lulus Penilaian Khas akan mendapat maksimum Gred C sahaja; dan
   f. telah diperakukan oleh Jawatankuasa Peperiksaan institusi.

ii. Kaedah pelaksanaan Penilaian Khas hendaklah ditentukan oleh Jawatankuasa Peperiksaan institusi:
   a. menduduki peperiksaan akhir sahaja; atau
   b. menduduki peperiksaan akhir dan melaksanakan pentaksiran berterusan (PB); atau
   c. melaksanakan sepenuhnya pentaksiran berterusan (PB).

iii. Bagi pelajar yang gagal mana-mana kursus yang melibatkan pentaksiran berterusan (PB) dan pentaksiran akhir (PA), penetapan sama ada pelajar perlu melaksanakan Penilaian Khas atau mengulang kursus diputuskan oleh Jawatankuasa Peperiksaan institusi.

iv. Pelaksanaan Penilaian Khas perlu dilaksanakan dalam tempoh maksimum **EMPAT (4)** minggu.

v. Pelajar perlu mendaftar untuk kursus yang berkenaan.

vi. Penilaian Khas tidak layak bagi pelajar yang mengambil semester pendek dan kursus-kursus yang dilaksanakan secara *Work Based Learning*.

vii. Penilaian Khas layak ditawarkan sekali sahaja dan sekiranya gagal, pelajar dikehendaki mengulang kursus tersebut.

viii. Penilaian Khas dilaksanakan selepas mesyuarat Jawatankuasa Peperiksaan institusi.

5.4.3. Pemberian Status Gred Tidak Lengkap (Gred T)

i. Pemberian Gred T bertujuan membolehkan pelajar melengkapkan penilaian kursus yang tertangguh ketika menghadapi musibah seperti wabak penyakit, bencana alam, darurat atau apa jua sebab yang bukan bersifat individu.

ii. Pelaksanaan Gred T perlu dilengkapkan dalam tempoh yang ditetapkan berdasarkan panduan pemberian status gred T yang sedang berkuat kuasa.

BAHAGIAN 6

KEPUTUSAN PENILAIAN

6.1. KATEGORI KEPUTUSAN PENILAIAN

Keputusan penilaian bagi setiap semester akan dikategorikan kepada:

6.1.1. **Lulus Penuh (LP)**

Pelajar semester akhir yang memperolehi Himpunan Purata Nilai Mata bersamaan atau lebih daripada 2.00 dan memenuhi syarat serta layak dianugerahkan sijil akademik.

6.1.2. **Kedudukan Baik (KB)**

Pelajar memperoleh Himpunan Purata Nilai Mata bersamaan atau lebih daripada 2.00.

6.1.3. **Kedudukan Bersyarat (KS)**

Pelajar memperoleh Himpunan Purata Nilai Mata bersamaan atau lebih daripada 1.60 dan kurang daripada 2.00

6.1.4. **Gagal dan Diberhentikan (GB)**

Kedudukan Gagal dan Diberhentikan diberikan kepada pelajar sekiranya:

i. memperolehi Himpunan Purata Nilai Mata kurang daripada 1.60; atau
ii. memperolehi Purata Nilai Mata kurang daripada 1.00 kecuali bagi pelajar yang dinyatakan pada perkara 2.3.1 (i), 2.3.1 (ii), dan 2.3.1 (iii); atau
iii. gagal sesuatu kursus sebanyak **TIGA (3)** kali termasuk peperiksaan akhir khas atau penilaian khas atau semester pendek; atau
iv. memperolehi keputusan Kedudukan Bersyarat **TIGA (3)** kali berturut-turut tidak termasuk semester pendek; atau
v. gagal Latihan Industri sebanyak **DUA (2)** kali; atau
vi. gagal kursus yang sama semasa *Work Based Learning* **DUA (2)** kali; atau
vii. telah melebihi tempoh maksimum pengajian sesuatu program.

6.2. PENGUMUMAN KEPUTUSAN PENILAIAN

Pegawai Peperiksaan akan mengumumkan keputusan penilaian bagi pihak Jawatankuasa Peperiksaan institusi pada tarikh keputusan rasmi.

6.3. SYARAT LAYAK MENERUSKAN PENGAJIAN

Pelajar yang mendapat keputusan Kedudukan Baik (KB) dan Kedudukan Bersyarat (KS) adalah layak meneruskan pengajian ke semester berikutnya.

6.4. SYARAT LAYAK KE LATIHAN INDUSTRI DAN *WORK-BASED LEARNING* (WBL)

i. Pelajar layak menjalani latihan industri dan *work based learning* apabila lulus semua kursus serta memperolehi HPNM 2.00 dan ke atas.

ii. Memenuhi syarat-syarat seperti dinyatakan dalam panduan pelaksanaan program pengajian *work based learning* dan latihan industri yang sedang berkuat kuasa.

BAHAGIAN 7

RAYUAN

7.1. RAYUAN KEPUTUSAN

7.1.1. Pelajar yang ingin membuat rayuan terhadap keputusan penilaian boleh berbuat demikian secara bertulis kepada Jawatankuasa Peperiksaan institusi dalam tempoh empat belas (14) hari daripada tarikh keputusan rasmi. Rayuan hendaklah disertakan dengan alasan-alasan munasabah dan bukti-bukti berkaitan.

7.1.2. Pelajar dikenakan bayaran sebanyak RM50.00 bagi setiap rayuan yang dikemukakan dan dibuat mengikut prosedur kewangan institusi berkenaan.

7.1.3. Keputusan rayuan akan dimaklumkan kepada pelajar oleh Pegawai Peperiksaan mengikut tarikh keputusan rasmi rayuan. Keputusan rayuan adalah muktamad.

7.2. SEMAKAN SEMULA SKRIP JAWAPAN

7.2.1. Pelajar yang ingin membuat penyemakan semula skrip jawapan sesuatu kursus hendaklah mengemukakan permohonan secara bertulis kepada Jawatankuasa Peperiksaan institusi dalam tempoh empat belas (14) hari dari tarikh keputusan rasmi diumumkan.

7.2.2. Pelajar akan dikenakan bayaran sebanyak RM25.00 bagi setiap kursus dan hendaklah dibuat mengikuti prosedur kewangan institusi.

7.2.3. Keputusan semakan semula akan dimaklumkan kepada pelajar oleh Pegawai Peperiksaan mengikut tarikh keputusan rasmi rayuan. Keputusan rayuan adalah muktamad.

BAHAGIAN 8

PENGANUGERAHAN

8.1. TEMPOH PENGAJIAN

8.1.1. Tempoh pengajian bagi sesuatu program adalah seperti berikut:

Jadual 8.1.1 : Tempoh Pengajian

INSTITUSI	PROGRAM	MINIMUM (Semester)	MAKSIMUM (Semester)
Politeknik	Sarjana Muda	6	11
	Diploma	5	9
	Sijil	4	7
	Sijil Khas	4	7
	Asasi	2	2
Kolej Komuniti	Diploma	5	8
	Sijil	4	7
	Sijil Khas	4	7

8.1.2. Merujuk kepada Akta 174 tempoh gantung pengajian pelajar tidak termasuk di dalam pengiraan tempoh pengajian sekiranya pelajar:

i. dibebaskan daripada hukuman yang dijatuhkan oleh mahkamah; dan

ii. dibebaskan dari hukuman sekatan atau perintah tahanan yang dijatuhkan oleh mahkamah atau mana-mana pihak berkuasa.

8.1.3. Tempoh gantung pengajian pelajar yang dikenakan hukuman tatatertib oleh pihak institusi adalah termasuk di dalam pengiraan tempoh pengajian.

8.1.4. Dalam keadaan tertentu, jika berlaku sebarang permohonan perlanjutan tempoh pengajian melebihi dari had yang dibenarkan, ianya perlu diputuskan

dalam Mesyuarat Pengurusan Jabatan Pendidikan Politeknik dan Kolej Komuniti.

8.1.5. Perkara 8.1.1., 8.1.2., 8.1.3. & 8.1.4. adalah merujuk kepada panduan dan peraturan am pelajar politeknik dan kolej komuniti yang sedang berkuatkuasa yang dikeluarkan oleh Bahagian Ambilan dan Pembangunan Pelajar, Jabatan Pendidikan Politeknik dan Kolej Komuniti.

8.2. SYARAT LAYAK PENGANUGERAHAN

Pelajar dianggap telah menamatkan pengajian dan layak dianugerahkan sijil akademik bagi sesuatu program yang ditetapkan sekiranya telah memenuhi kriteria berikut:

8.2.1. Lulus semua kursus yang ditetapkan bagi program berkenaan;

8.2.2. Mendapat Himpunan Purata Nilai Mata bersamaan atau lebih daripada 2.00;

8.2.3. Melengkapkan sepenuhnya jumlah kredit yang ditetapkan bagi sesuatu program;

8.2.4. Tidak melebihi tempoh maksimum pengajian; dan

8.2.5. Telah diperakui oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti.

8.3. PENGANUGERAHAN SIJIL AKADEMIK SECARA AEGROTAT DAN ANUMERTA

8.3.1. Penganugerahan sijil akademik secara Aegrotat dan Anumerta bertujuan untuk memberikan pengiktirafan dan penghormatan kepada pelajar yang tidak dapat menamatkan pengajian disebabkan hilang upaya kekal semasa dalam pengajian atau meninggal dunia, tetapi telah memenuhi sebahagian besar syarat penganugerahan.

8.3.2. Pemberian anugerah ini perlu memenuhi syarat-syarat seperti yang dinyatakan dalam panduan berkaitan aegrotat dan anumerta yang sedang berkuat kuasa.

8.4. SIJIL DAN TRANSKRIP AKADEMIK

8.4.1. Sijil dan transkrip akademik diberikan kepada pelajar setelah tamat sesuatu program pengajian dan disahkan oleh Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti.

8.4.2. Permohonan sijil dan transkrip akademik gantian akan dikenakan bayaran seperti berikut:

Jadual 8.4.2 : Kadar Bayaran

PERKARA	BAYARAN (RM)
Sijil (versi BM / BI)	50.00 per sijil
Transkrip	10.00

8.4.3. Bayaran perlu dibuat mengikut prosedur kewangan institusi.

8.5. PENGECUALIAN BAYARAN BAGI PERMOHONAN SIJIL DAN TRANSKRIP AKADEMIK GANTIAN

8.5.1. Bayaran bagi permohonan salinan sijil gantian dan transkrip akademik kepada lulusan yang terkesan akibat bencana adalah **DIKECUALIKAN**.

8.5.2. Pengecualian bayaran adalah seperti berikut:

i. Bencana yang berlaku di tempat kediaman lulusan;

ii. Permohonan perlu dikemukakan oleh lulusan sendiri dalam tempoh enam (6) bulan daripada tarikh ditimpa bencana;

iii. Tatacara pengecualian bayaran adalah dengan mendapat kelulusan pengarah institusi beserta dokumen sokongan yang disahkan oleh pihak berkuasa berkenaan aduan kerosakan disebabkan oleh bencana.

8.6. PENARIKAN BALIK ATAU PEMBATALAN SIJIL

Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti berhak menarik balik sijil akademik yang telah dianugerahkan kepada seseorang lulusan jika didapati mengemukakan dokumen kelayakan palsu semasa membuat permohonan kemasukan ke politeknik/kolej komuniti atau melakukan mana-mana penyelewengan akademik.

Keputusan Lembaga Peperiksaan dan Penganugerahan Sijil/ Diploma Politeknik atau Jawatankuasa Peperiksaan Pusat Kolej Komuniti adalah muktamad.

LAMPIRAN A

Sistem Gred Program Diploma Kejuruteraan Perkapalan (DKP)

MARKAH	NILAI MATA	GRED	STATUS*
90 - 100	4.00	A+	Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Cemerlang
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Kepujian
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Gagal
44 – 46	1.33	D+	Gagal
40 – 43	1.00	D	Gagal
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

JAWATANKUASA

PENAUNG	:	YBhg. Dato' Dr. Haji Mohd Zahari bin Ismail Ketua Pengarah Pendidikan Politeknik dan Kolej Komuniti
PENASIHAT	:	Puan Hilmun binti Mohamed Pengarah Bahagian Peperiksaan dan Penilaian (BPN)
PENGERUSI	:	Dr. Mohamad Kazar bin Razali (BPN)
TIMBALAN PENGERUSI	:	Puan Siti Normazila binti Abdul Aziz (BPN) Puan Syakirah binti Mansor (BPN)
KETUA EDITOR	:	Puan Hasnizah bt Amran (BPN)
EDITOR	:	Puan Nurul Hananie binti Mazlan (BPN) Puan Shahima binti Mohd Nadzri (BPN) Puan Murni binti Jainaf @ Jamingon (BPN) Dr. Mohamad Kazar bin Razali (BPN)
KETUA PENULIS	:	Puan Hasnizah bt Amran (BPN)
PENULIS	:	Dr. Mohamad Kazar bin Razali (BPN) Puan Nurul Hananie binti Mazlan (BPN) Puan Shahima binti Mohd Nadzri (BPN) Puan Murni binti Jainaf @ Jamingon (BPN) Puan Noor Afziha binti Ngarisan (BPN) Puan Rosazlinda binti Mohd Ishak (BPN) Encik Yang Syazlan bin Shamsuddin (BPN) Encik Shahrom Nurrizam bin Romli (BPN) Dr. Nadia binti Hairi (BPN) Puan Fatimah binti Khair (BPN) Puan Nur Haslinda binti Mohd Sailan (PNS) Puan Masrulanita binti Mohamed (PSA) Cik Fauziah binti Yusoff (PSAS) Encik Mohd Shahir bin Dzulkapli (PSIS) Puan Fardanadia binti Sulaiman (KKHL) Puan Fasehahnoor binti Yaacob (KKKL)
REKA BENTUK GRAFIK	:	Encik Yang Syazlan bin Shamsuddin (BPN)

PENGHARGAAN

Setinggi-tinggi penghargaan dan ucapan terima kasih kepada Ahli Mesyuarat Pengurusan JPPKK, Ahli Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik, Jawatankuasa Peperiksaan Pusat Kolej Komuniti, Pengarah-pengarah Politeknik dan Kolej Komuniti, Timbalan-timbalan Pengarah Politeknik dan Kolej Komuniti, Pegawai Peperiksaan Politeknik dan Kolej Komuniti dan semua warga politeknik dan kolej komuniti serta semua pihak yang terlibat secara langsung atau tidak langsung dalam sumbangan idea dan sokongan bagi penerbitan Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama 2025.

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI
Galeria PjH, Aras 6, Jalan P4W
Persiaran Perdana, Presint 4
62100 W.P. PUTRAJAYA
Tel: 03-8888 2630 Faks: 03-8888 5634

Ruj. Kami : JPPKK.BPN.100 - 1/5/1 (12)
Tarikh : 28 Februari 2025

PENGARAH POLITEKNIK
PENGARAH KOLEJ KOMUNITI

YBrs. Dr./Ts./ Tuan/Puan,

PENGGUNAAN ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN EDISI PERTAMA TAHUN 2025

Dengan segala hormatnya, perkara di atas dirujuk.

2. Sukacita dimaklumkan bahawa Bahagian Peperiksaan dan Penilaian (BPN), JPPKK telah membangunkan Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama Tahun 2025. Arahan peperiksaan dan kaedah penilaian ini dibangunkan sebagai satu ketetapan bagi semua politeknik dan kolej komuniti dalam mengendalikan segala urusan yang berkaitan dengan peraturan peperiksaan dan kaedah penilaian.

3. Garis panduan ini berkuat kuasa mulai Sesi II: 2024/2025 dan boleh dimuat turun di laman sesawang https://www.mypolycc.edu.my atau http://bpn.mypolycc.edu.my (Portal BPN > Muat Turun > Garis Panduan). Adalah dimaklumkan bahawa **Arahan - Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Edisi 6, Jun 2019** dan **Peraturan Peperiksaan Dan Kaedah Penilaian Kolej Komuniti Edisi 2017** dengan ini **TERBATAL** berkuat kuasa serta-merta.

4. Bagi Perkara 5.2 berkaitan sistem gred seperti Lampiran 1 akan mula digunapakai bagi pelajar semester 1 ambilan Sesi II: 2024/2025. Pelajar ambilan sebelum Sesi II: 2024/2025 masih menggunakan sistem gred yang terdahulu seperti di Lampiran 2 bagi politeknik dan Lampiran 3 bagi kolej komuniti.

Kerjasama dan keprihatinan daripada pihak YBrs. Dr./Ts./tuan/puan mengenai perkara ini amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(HILMUN BINTI MOHAMED A.M.(M))
Pengarah

LAMPIRAN 1

Arahan Peperiksaan dan Kaedah Penilaian Politeknik dan Kolej Komuniti Edisi Pertama Tahun 2025

Perkara 5.2: Sistem Gred

5.2. SISTEM GRED

Markah yang diperolehi oleh pelajar di dalam sesuatu kursus akan diberi nilai mata dan gred mengikut seperti berikut:

Jadual 5.2.1 : Sistem Gred

MARKAH	NILAI MATA	GRED	STATUS*
90 - 100	4.00	A+	Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Cemerlang
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Kepujian
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Lulus
44 – 46	1.33	D+	Lulus
40 – 43	1.00	D	Lulus
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

*Nota : Status gred tidak terpakai bagi program-program tertentu

LAMPIRAN 2

Arahan-Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Edisi 6

Perkara 19 : Sistem Gred

19. SISTEM GRED

Markah yang diperolehi oleh pelajar di dalam sesuatu kursus akan diberi nilai mata dan gred mengikut kumpulan seperti berikut:

Jadual 19.1 : Sistem Gred

Markah	Nilai Mata	Gred	Status*
90 - 100	4.00	A+	Sangat Cemerlang
80 - 89	4.00	A	Cemerlang
75 – 79	3.67	A-	Kepujian
70 – 74	3.33	B+	Kepujian
65 – 69	3.00	B	Kepujian
60 – 64	2.67	B-	Lulus
55 – 59	2.33	C+	Lulus
50 – 54	2.00	C	Lulus
47 – 49	1.67	C-	Lulus
44 – 46	1.33	D+	Lulus
40 – 43	1.00	D	Lulus
30 – 39	0.67	E	Gagal
20 – 29	0.33	E-	Gagal
0 – 19	0.00	F	Gagal

*Nota : *Status gred tidak terpakai bagi program-program tertentu.*

LAMPIRAN 3

Peraturan Peperiksaan dan Kaedah Penilaian Kolej Komuniti Kementerian Pendidikan Tinggi (Edisi Kelima)

Perkara 4.1 : Sistem Gred

4.1 SISTEM GRED

4.1.1 Semua markah yang diperolehi oleh pelajar bagi sesuatu kursus / LA akan dinyatakan dalam bentuk gred seperti Jadual 1.

Markah	Gred	Nilai Mata	Status
90 – 100	A+	4.00	Sangat Cemerlang
80 – 89	A	4.00	Cemerlang
75 – 79	A-	3.67	Kepujian
70 – 74	B+	3.33	
65 – 69	B	3.00	
60 – 64	B-	2.67	Baik
55 – 59	C+	2.33	
50 – 54	C	2.00	
47 – 49	C-	1.67	Lulus Bersyarat
44 – 46	D+	1.33	
40 – 43	D	1.00	
0 – 39	F	0.00	Gagal

Jadual 1

BAHAGIAN PEPERIKSAAN DAN PENILAIAN
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
ARAS 6, GALERIA PJH
JALAN P4W, PERSIARAN PERDANA, PRESINT 4
62100 W.P PUTRAJAYA

TEL: 03-8888 2630
https://www.mypolycc.edu.my

EXAMPLE OF SLT CALCULATION

Course Content Outline	CLO*	Teaching and Learning Activities						
		Guided Learning (F2F)				Guided Learning (NF2F) eg: e-Learning	Independent Learning (NF2F)	SLT
		L	P	T	O			
1.1 Explain Safety, Health, Environment and Welfare in Workshop Practice	CLO3	0	1	0	0	0	0	1
1.2 Follow Safety Procedure, Health, Environment and Welfare in Workshop Practice	CLO3	0	1	0	0	0	0	1
2.1 Explain the procedure for fitting works.	CLO2	0	1	0	0	0	0	1
2.2 Perform fitting works.	CLO2	0	10	0	0	0	0	10
2.3 Measure finished product using appropriate measurement instruments.	CLO1	0	3.5	0	0	0	0	3.5
2.4 Organize workshop in safe, clean and tidy condition.	CLO3	0	0.5	0	0	0	0	0.5
3.1 Explain the procedure for machining works.	CLO2	0	1	0	0	0	0	1
3.2 Perform machining works.	CLO2	0	10	0	0	0	0	10
3.3 Measure workpiece by using Micrometer, Vernier Caliper or Steel Ruler	CLO1	0	3.5	0	0	0	0	3.5
3.4 Organize workshop in safe, clean and tidy condition.	CLO3	0	0.5	0	0	0	0	0.5
4.1 Explain the procedure for arc and gas welding works.	CLO2	0	1	0	0	0	0	1
4.2 Perform appropriate technique of oxy acetylene welding.	CLO2	0	5	0	0	0	0	5
4.3 Perform appropriate technique of arc welding.	CLO2	0	5	0	0	0	0	5
4.4 Measure quality of workpiece of welding works according to the welding standard.	CLO1	0	3.5	0	0	0	0	3.5
4.5 Organize workshop in safe, clean and tidy condition	CLO3	0	1	0	0	0	0	1
							TOTAL:	**47.5**

CONTINUOUS ASSESSMENT	PERCENTAGE (%)	F2F	NF2F	SLT
Practical Task (P)	20	1.5	0	1.5
Practical Task (P)	40	3	0	3
Practical Task (A)	20	4	0	4
Report	10	0	12	12
Report	10	0	12	12
			TOTAL:	**32.5**

****Please tick (√) if this course is Latihan Industri/ Clinical Placement/ Practicum/ WBL using 2-weeks, 1 credit formula**

☐

GRAND TOTAL SLT: **80.0**

L = Lecture, T = Tutorial, P= Practical, O= Others, F2F=Face to Face, NF2F=Non Face to Face

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

JAWATANKUASA PERWAKILAN PELAJAR
POLITEKNIK SALAHUDDIN ABDUL AZIZ SHAH
SESI 2025/2026

MAJLIS TERTINGGI

BATRISYIA AUNI NADHIRAH
BINTI MOHD ALIFUDIN
NAIB YANG DI - PERTUA I
(AKADEMIK)

AHMAD NAQIB
BIN MOHAMAD ZAFAR
YANG DI - PERTUA

MUSLIHUDDIN FARIHIN BIN
MUSTPHA@MUSTAPHA
NAIB YANG DI - PERTUA II
(KEBAJIKAN)

MUHAMMAD NAFHAN HAKIM
BIN HAMKA
SETIAUSAHA KEHORMAT

SARAH MARYA DANI
BINTI IWAN DANI
NAIB
SETIAUSAHA KEHORMAT

DANIA FARISHA BINTI
MOHAMED FADIL
BENDAHARI KEHORMAT

ADRIANA ASYIQIN BINTI
SAIFUL AZRIN
NAIB
BENDAHARI KEHORMAT

EXCO-EXCO

SEKTOR STRATEGIK

AHMAD ARIF AFIQ BIN
AHMAD ABADI
AKADEMIK & LATIHAN

NUR KHAIRUNNISA NAJWA
BINTI MOHAMAD ALI
KOLABORASI

KEERTNA
PILLAY
KOMUNIKASI KORPORAT

NUR FARAH AINA BINTI
MOHD AZRI
KELAB & PERSATUAN

NURSYAHADA ATIRAH
BINTI MOHD NAYAN
MULTIMEDIA & PENERBITAN

ANG LEE QIN
HUBUNGAN ANTARABANGSA

MOHAMAD AZMIL
ARSYAD
BIN AZMIL SYUKRI
KEBAJIKAN & SOSIAL

MUHAMAD HAZIQ
MIFZAL
BIN MOHD NADZLI
DISIPLIN & KESELAMATAN

SHA DANIEL AIRIEL
BIN NORAFENDI
KEBAJIKAN PELAJAR KURANG UPAYA (OKU)

SEKTOR OPERASI

HAIMAN IRFAN NAEILA
BIN ABDUL KADIR
SUKAN & REKREASI

MUHAMMAD IRFAN
BIN ADZNAN
KEBUDAYAAN & WARISAN

NURIN MAISARAH
BINTI MOHD NOR
KEUSAHAWANAN & KERJAYA

MUHAMMAD IZZ IDDIN
DANIE BIN MOHD ZAHIR
KESUKARELAWAN

HERWIN KUMAR
A/L BALAKRISHNAN
INTEGRASI NASIONAL

YOGAGANESH
A/L SUBAS
MORAL & INTEGRITI

BAHIAH BINTI
ZURAIDI
PEMBANGUNAN WANITA

AHMAD AFIQ
BIN MAZLAN
KEROHANIAN & RAKAN PUSAT ISLAM

MUHAMMAD
NOORIKHWAN BIN
MOHD NOORZAIRI
KEDIAMAN LUAR

EXCO JABATAN

SYED MOHAMAD ASYRAF
BIN SYED AHMAD PUTRA
PEMBIMBING RAKAN SISWA

MUHAMMAD
IRFAN FIKRI
BIN HANAFI
KEJURUTERAAN AWAM

LAILA BALQIS
BINTI KHAIRIL
KEJURUTERAAN MEKANIKAL

MUHAMMAD
MUZAFFAR AFIF
BIN HISHAMUDDIN
PERDAGANGAN

SHEIKH FAIQ
DARWISH BIN
SHEIKH 'IMRAN
KEJURUTERAAN ELEKTRIK

MUHAMMAD HADIF FAHMI
BIN HARFENDY
JAWATANKUASA PELAJAR
KOLEJ KEDIAMAN (JPKK)

" MENJULANG ASPIRASI , MENGGERAK REVOLUSI "

Program Anjuran Jawatankuasa Perwakilan Pelajar (JPP) PSA 2025

PROGRAM	TARIKH	KERJASAMA
Bengkel Pemantapan Kepimpinan JPP PSA	22-23 Februari 2025	KJHEP
Gotong-royong bilik JPP	1 Mac 2025	JPP
Townhall JPP Bersama AMP	5 Mac 2025	JPP & KJHEP
Kunjungan Iftar Mahabbah YBTM Pendidikan Tinggi	13 Mac 2025	JPP & KJHEP
Imarah Ramadan	20 Mac 2025	PTPTN
Majlis Jalinan Kasih Muafakat Ramadan 2025	25 Mac 2025	JPP, KJHEP & Alumni PSA
Majlis Jalinan Kasih 2025	29 April 2025	JPP, KJHEP, PPJ & Organisasi PSA
MPG Mega 4.0	30 April 2025	KJHEP
Bench Explore: PUO x PSA	17-18 Julai 2025	JPP PUO & JPP PSA
Minggu Transformasi Siswa	27-31 Julai 2025	JPP, PPJ & Organisasi PSA
Rakita : Sekolah Radio	23 Septeber 2025	JPP, Media & KSS
Photoweek : Kenangan Kita	29-30 September 2025 & 14-15 Oktober 2025	JPP & Media
Program Inspirasi Muda: PSA x Sekolah Integrasi As-Syakirin	30 September 2025	JPP & Sekolah Integrasi As-Syakirin
Where Is My Money?	9 Oktober 2025	JPP & Kaizen Wealth Academy
Make Up Battle	14 Oktober 2025	JPP
Mathnisium	27 Oktober 2025	JPP & PPJ
MPG 5.0	31 Oktober 2025	JPP, PPJ & Organisasi PSA

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PPJ PERWAKILAN PELAJAR JABATAN
KEJURUTERAAN MEKANIKAL

CARTA ORGANISASI PPJ JKM

LAILA BALQIS BINTI KHAIRIL
PENGERUSI

MOHAMAD ZAHIN NAIM BIN MOHAMAD ZALILI
NAIB PENGERUSI I

MUHAMMAD NUR ARIEF BIN NORSAHABUDDIN
NAIB PENGERUSI II

SITI MUSLEHA BINTI MISLI
SETIAUSAHA

MUHAMMAD AMIN AFIFI BIN RADHIR SHAM
NAIB SETIAUSAHA

NURUL HIDAYAH BINTI RUHAIZID
BENDAHARI

ARISH FARHAN BIN MOHD GHAZALI
BIRO KOMUNIKASI & KOPERAT

ARIF FAHMI BIN SAHRI
BIRO KEBAJIKAN

NURUL NAJIHAH BINTI NORDIN
BIRO DISIPLIN

ADRIANA BATRISYA BINTI ZAMRI
BIRO KOLEJ KEDIAMAN

SITI NURSYAFEEQAH BINTI DZULKIFLEE
BIRO MEDIA & PENERBITAN

RICHARD THOMAS A/L ALEX
BIRO KOLABORASI

MUHAMMAD AKMAL BIN MOHD RASHDAN
BIRO AKADEMIK & LATIHAN KJA

SANJEV A/L NANTHAKUMAR
BIRO AKADEMIK & LATIHAN DKM

ALYA SHAHIRA BINTI SAIDIN
BIRO AKADEMIK & LATIHAN DMP

MUHAMMAD HAZIQ MU'IZ BIN MUHAMMAD ZULFIKAR
BIRO INTEGRASI NASIONAL

MUHAMMAD ITQAN BIN ZULKIFLI
BIRO KEROHANIAN

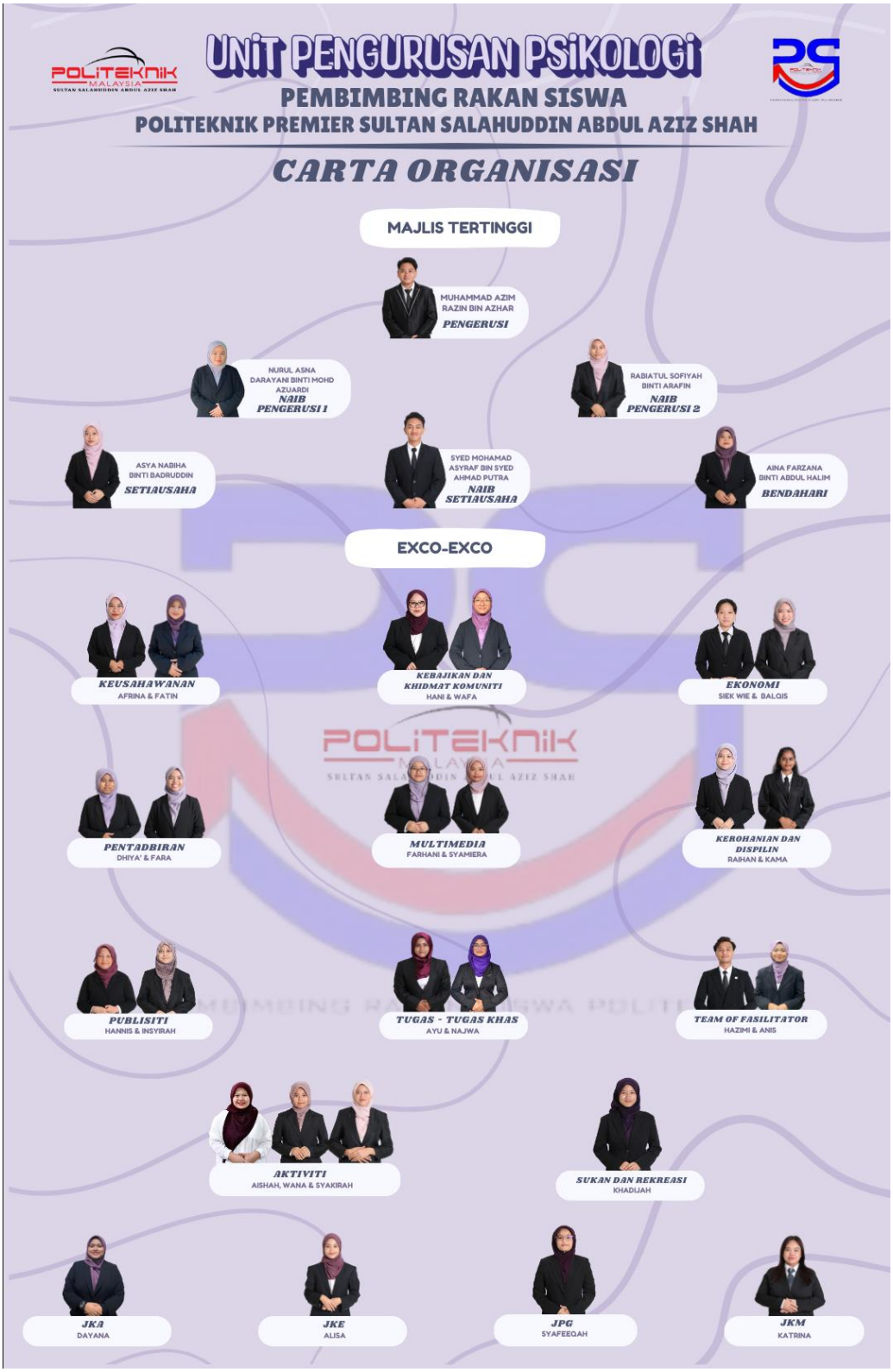
NUR ADREANNA NATASYA BINTI ABDUL RAHMAN
BIRO KEBUDAYAAN

AQIL IMRAN BIN ABDUL FATTAH
BIRO SUKARELAWANAN

PROGRAM PERWAKILAN PELAJAR JABATAN KEJURUTERAAN MEKANIKAL TAHUN 2024 & 2025

BIL.	PROGRAM	TARIKH	TEMPAT
1.	PROGRAM *GOTONG ROYONG PERSATUAN PENDUDUK JALAN MIMBAR,BUKIT JELUTONG*	2 MAC 2024	JALAN MIMBAR,BUKIT JELUTONG
2.	PROGRAM *MBJ / AKJ*	8 MAC 2024 & 16 OGOS 2024	DEWAN AL-JAZARI
3.	PROGRAM *GOTONG ROYONG*	14 OGOS 2024	BILIK PPJ JKM
4.	PROGRAM *PPJ JKM NIAGA*	SETIAP RABU (2024)	TAPAK NIAGA PSA
5.	PROGRAM *KEM TERAS INSPIROLEAD PPJ JKM*	6-7 SEPTEMBER 2024	ANJUNG BESTARI
6.	PROGRAM *RAYA PSA*	8 MEI 2024	DEWAN AL-JAZARI
7.	PROGRAM *BACAAN YASSIN*	16 MEI 2024	MS TEAMS
8.	PROGRAM *MENINGKATKAN INKLUSIVITI DALAM PENDIDIKAN KEJURUTERAAN: INTEGRASI BAHASA ISYARAT DALAM PENGAJARAN DAN PEMBELAJARAN BERSAMA UNIVERSITAS INDONESIA*	23 SEPTEMBER-26 SEPTEMBER	JAKARTA , INDONESIA
9.	PROGRAM *MAJLIS APRESIASI PPJ JKM 2024*	12 DISEMBER 2024	STEAMBOAT
10.	PROGRAM *MBJ / AKJ*	24 FEBRUARI 2025 & 28 OGOS 2025	DEWAN AL-JAZARI
11.	PROGRAM *GOTONG ROYONG*	17 MAC 2025	BILIK PPJ JKM
12.	PROGRAM *PPJ JKM NIAGA*	SETIAP RABU (2025)	TAPAK NIAGA PSA
13.	PROGRAM *RAYA PSA*	29 APRIL 2025	DEWAN AL-JAZARI
14.	PROGRAM *KEM TERAS ELEVATE PPJ JKM & MECHTECH* - **KERJASAMA UPP**	4 SEPT 2025	FOYER JKM

Pembimbing Rakan Siswa Organization Chart



Activities Carried Out by PRS 2025

Apa itu "Youth Leader Program"?

Tujuan Youth Leader Program adalah untuk memperkasakan individu muda dengan kemahiran, pengetahuan, dan keyakinan yang diperlukan untuk menjadi pemimpin yang berkesan dalam komuniti mereka. Program ini bertujuan untuk memupuk pertumbuhan peribadi, tanggungjawab sivik, dan kesedaran sosial melalui latihan berstruktur, bimbingan, dan pengalaman kepimpinan secara langsung. Dengan melibatkan belia dalam perkhidmatan bermakna dan inisiatif kerjasama, program ini berusaha untuk memupuk generasi pemimpin yang proaktif, beretika, dan berfikiran masyarakat yang bersedia untuk menangani cabaran masa depan.

The purpose of the Youth Leader Program was to empower young individuals with the skills, knowledge, and confidence necessary to become effective leaders within their communities. The program aimed to foster personal growth, civic responsibility, and social awareness through structured training, mentorship, and hands-on leadership experiences. By engaging youth in meaningful service and collaborative initiatives, the program sought to cultivate a generation of proactive, ethical, and community-minded leaders prepared to address the challenges of the future.

Watikah Pelantikan Majlis Tertinggi Persatuan Rakan Siswa Politeknik Sultan Salahuddin Abdul Aziz Shah (PRS PSA) bertujuan untuk memberikan pengiktirafan rasmi kepada pelajar-pelajar yang telah dipilih atau dilantik memegang jawatan kepimpinan dalam organisasi PRS PSA. Dokumen ini juga berfungsi sebagai simbol amanah dan tanggungjawab yang diberikan kepada pemimpin pelajar dalam membantu menjayakan visi dan misi persatuan serta memperkasakan aktiviti kerohanian, sahsiah, dan kebajikan pelajar di peringkat politeknik.

Watikah Pelantikan Majlis Tertinggi Persatuan Rakan Siswa Politeknik Sultan Salahuddin Abdul Aziz Shah (PRS PSA) aims to provide official recognition to students who have been elected or appointed to hold leadership positions in the PRS PSA organization. This document also serves as a symbol of the trust and responsibility given to student leaders in helping to achieve the association's vision and mission as well as empowering spiritual, personal, and welfare activities of students at the polytechnic level.

Pada bulan Ramadan yang lalu, pihak PTPTN telah hadir ke Pusat Islam, Politeknik Sultan Salahuddin Abdul Aziz Shah bagi menyampaikan sumbangan makanan kepada para pelajar, sebagai tanda keprihatinan terhadap kebajikan mereka sepanjang bulan yang mulia ini.

Last Ramadan, PTPTN came to the Pusat Islam, Politeknik Sultan Salahuddin Abdul Aziz Shah to distribute food aid to students as a gesture of care and support for their well-being during the holy month.

PSYCARE Roadshow anjuran Unit Pengurusan Psikologi PSA merupakan sebuah program yang bertujuan untuk meningkatkan kesedaran tentang kesihatan mental dalam kalangan pelajar. Pelbagai aktiviti menarik seperti ujian psikologi, terapi seni, dan sesi konsultasi disediakan bagi membantu pelajar mengenali potensi diri serta mendapatkan sokongan emosi dan mental yang sewajarnya.

The PSYCARE Roadshow, organized by the Psychology Management Unit of PSA, is a program aimed at raising mental health awareness among students. It offers engaging activities such as psychological assessments, art therapy, and consultation sessions to help students discover their potential and receive proper emotional and mental support.

VIDEO PROMOSI PSYCARE ROADSHOW

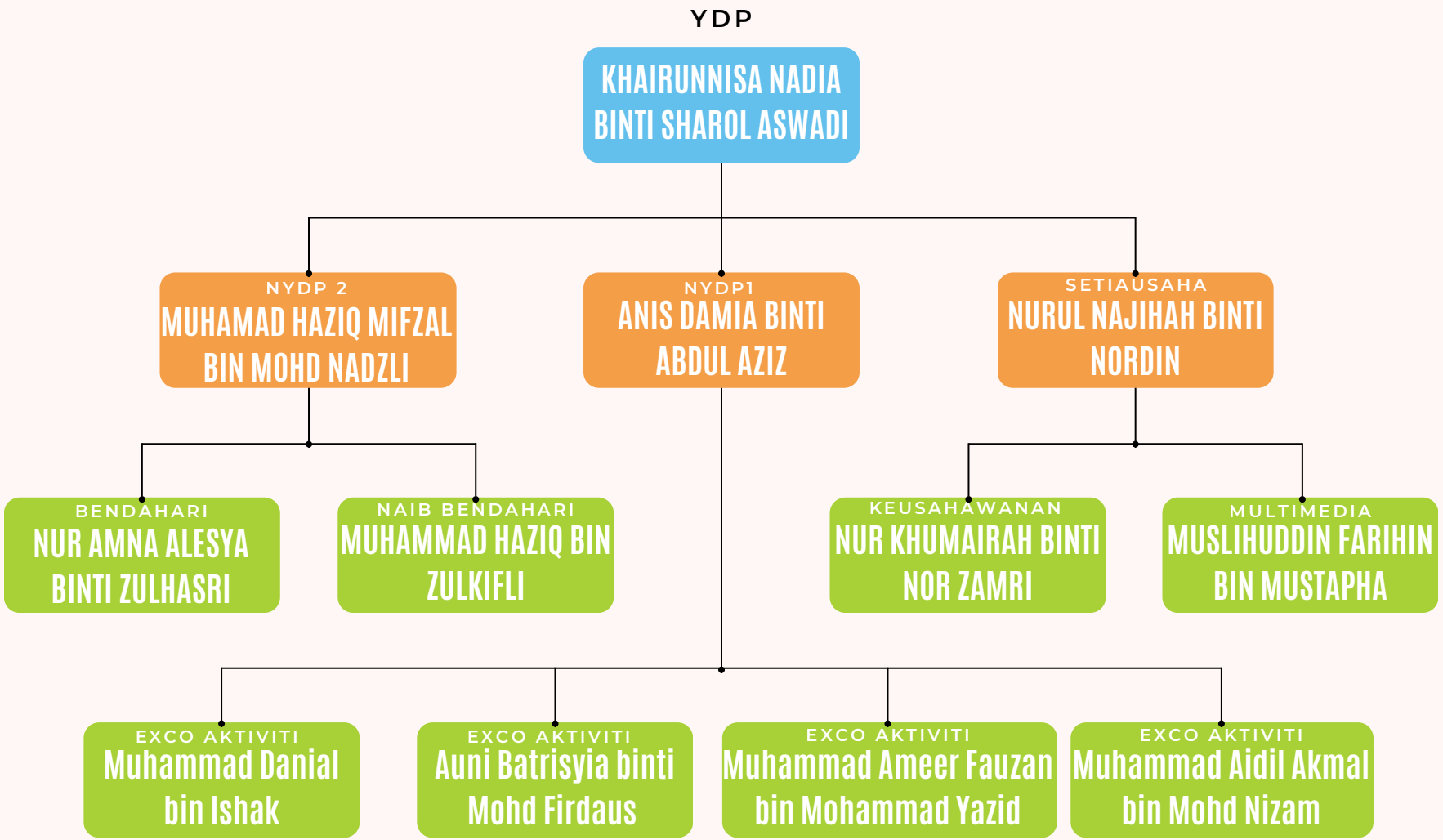
PROGRAM YANG DILAKSANAKAN OLEH KELAB MECHTECH 2025

1) BENGKEL PROJEK METHODOLOGY & DEVELOPMENT (11 SEPTEMBER 2025)

2) PROGRAM YOUNG ENTREPRENEUR (11 SEPTEMBER 2025)

3) KURSUS MASAKAN LEMANG BAGI PELAJAR PROGRAM KHAS KULINARI DI KOLEJ KOMUNITI SELAYANG (26 FEBRUARI 2025)

KELAB MECHTECH



POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

PUSAT ISLAM

CARTA ORGANISASI RAKAN PUSAT ISLAM
SESI 1 2025/2026

YANG DI-PERTUA
AHMAD AFIQ BIN MAZLAN

NAIB YANG DI-PERTUA 1
WAN AISYI AZHARAN BIN WAN MUHAMMAD ZAMRI

NAIB YANG DI-PERTUA 2
MARIYAH BINTI MOHAMMAD LUTFI

SETIAUSAHA
WAN MUHAMMAD HASIF BIN WAN OTHMIARI
WAN NOR ZIANATUL ARIESYA BINTI WAN MOHD ZAINAL WAHAB

BIRO MULTIMEDIA & PENERBITAN
MUHAMMAD HAZIQ ADLY BIN KHAIROL AZLY
NURUL ISMAHANI BINTI NUNHATI

BENDAHARI
NAUFAL NASUHA BIN MAT YATIMAN

BIRO DAKWAH & TARBIYAH
MUHAMMAD ALI BIN MAHYUDDIN
NUR ARINA HUDA BINTI KAMARUSZAMAN

BIRO KESELAMATAN, KEBERSIHAN DAN KECERIAAN
AHMAD MUHAIMIN BIN ABU BAKAR
SITI NURSHARIFAH RIFQAH BINTI NOORIZHAM

BIRO EKONOMI
MUHAMMAD IZZUDDIN BIN ABD AZIZ
KHAIRUN NAJIHAH BINTI BAHARUDDIN

BIRO KEBAJIKAN
MUHAMMAD IZZAT BIN BADRON
NUR FARISAH AZWA BINTI JEFFRI

BIRO PENYELENGGARAAN ASET
ABDULLAH AZAM BIN SOLAHUDDIN
NUR AISYAH NABIHAH BINTI MOHD ASID

Activities carried out by RAPI for 2024 & 2025

Tahun 2024

1. Gotong-royong
2. Ceramah Isra' Mikraj
3. Kursus Imam dan Bilal
4. Ceramah Ambang Ramadan
5. Majlis Berbuka Puasa bersama YBM KPT
6. Majlis Khatam al-Quran dan Iftar Perdana
7. Program Korban PSA
8. Kursus Sembelihan
9. Program Subuh Macam Jumaat
10. Kursus Jenazah
11. Jamuan Akhir Semester

Tahun 2025

1. Gotong-royong
2. Majlis Bacaan Yasin PUSPANITA
3. Ceramah Isra' Mikraj
4. Ceramah Ambang Ramadan
5. Kelas Tajwid Mingguan
6. Majlis Khatam al-Quran dan Iftar Perdana
7. Program Imarah Ramadan PTPTN
8. Majlis Berbuka Puasa Bersama YBTM KPT
9. Program Korban PSA
10. Program Syoknya Solat

CARTA ORGANISASI AHLI JAWATANKUASA PELAJAR KOLEJ KEDIAMAN SESI I 2025/2026

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

JPKK

MAJLIS TERTINGGI

PENGERUSI
MUHAMMAD HADIF FAHMI BIN HARFENDY

NAIB PENGERUSI 1
AINAA SAFIYYAH BINTI KAMARUDIN

NAIB PENGERUSI 2
NUR ADRIANA BALQIS BT MOHAMAD HUSSIN

SETIAUSAHA
NURIN YASMIN BINTI MOHD DAUD

NAIB SETIAUSAHA
NOUR AAZALIFA BINTI ISMAIL

BENDAHARI
MUHAMMAD AL ARIEF DANISH BIN RAMLI

K.KAMSIS SENTOSA
ADIB IZZUDDIN BIN ROSMAINI SHAH

K.KAMSIS AMAN
NUR AIN SAFIYAH BINTI CHE NORDIN

K.KAMSIS DAMAI
NURHARTINI BINTI HASHIM

BARISAN EXCO DAN KETUA WING

EXCO SUKAN
- NUR AQILA BINTI SHAHRAN
- IMANUEL LOMPOS ANAK GERAMONG

EXCO DISIPLIN
- HARITH ANAQI BIN WAFIDULFIKRI
- NUR AINA MAISARAH BINTI MOHAMAD FIKRI
- SITI NURSYAHIRAH BINTI MOHD ZAMBRI

EXCO 3K & KESELAMATAN
- AZRUL AMRIE BIN JAMHARI
- NURUL HIDAYAH BINTI RUHAIZID

EXCO CSR & KEUSAHAWANAN
- MUHAMMAD ZUL AFIQ ASYRAF BIN ABD KADIR
- AISY NUR MIRZA BINTI MAZRULHELMI

EXCO KEROHANIAN DAN MORAL
- MUHAMMAD HAFIZUDIN BIN MOHD ZULKIFLE
- NURUL RIFHAN BINTI ASHAR AHAMED
- NAVINA A/P MATHVRAVIRAN

EXCO TEKNIKAL FASILITI
- NUR LIDYA DHANIA BINTI NOR MUHAMMAD TAUFIK
- MUHAMMAD SYAFEIN

EXCO KEBAJIKAN
- MUHAMMAD RAZIN BIN MOHD RAFI
- NUR DHIA IRDINA BINTI MOHD RASIDI

EXCO MULTIMEDIA
- LEE YING ZHEN
- SAFIRAH ANNISA BINTI MOHD YUSOF

EXCO PELAJAR KHAS
- KHAIRUNNUAIM BIN HASBULLAH

K.WING SENTOSA
S1- ADAM MUHAMMAD AMIR BIN MOHD RAHIMI
S2- MUHAMMAD ADAM HARIS BIN HARRISS ISLAM
S3- MUHAMMAD AMEER NAUFAL BIN ANUAR
S4- ISYRAF AQIL BIN ROSLI

K.WING AMAN
A1- NURSARAHHIM BINTI SUWIRMAN
A2- YASMEEN FARADHIYA FARAHIN BINTI AMIN
A3- NUR AISYAH BINTI ARIFFIN
A4- ADLIN ILYANA BINTI RIDZUAN

K.WING DAMAI
D1- DAMIEA ZULAIKHA BINTI ABDUL SAMAD
D2- VIMELESWARY A/P GANESAN
D3- SITI NUR SHARIYANI BINTI MOHD ARIFF
D4- FAQIHAH YUSRAH BINTI FAUZI

APPENDIX C4-6l

TAKWIM JAWATANKUASA PELAJAR KOLEJ KEDIAMAN

BIL.	TARIKH	AKTIVITI	ANJURAN	JUSTIFIKASI
1	5/1/2025	MALAM BERSAMA KAMSIS & JAWATANKUASA PELAJAR KOLEJ KEDIAMAN	JPKK	MEMPERKENALKAN SEMUA WARDEN DAN PENYELIA ASRAMA YANG TERDAPAT DE POLITEKNIK SULTAN SALAHUDDIN ABDUL AZZ SHAH
2	12/1/2025	PENDAFTARAN PELAJAR SENIOR MENDUDUKI KAMSIS	JPKK	PENDAFTARAN PELAJAR UNTUK TINGGAL DI KAMSIS
3	15/1/2025	PERJUMPAAN BLOK DAN TAKLIMAT DISIPLIN 1.0	JPKK	MEMBERI PENGETAHUAN KEPADA PENGHUNI MENGENAI PERATURAN DAN UNDANG-UNDANG DI KAMSIS
4	12/2/2025	TAKLIMAT KESELAMATAN DAN PELAN PENGUNGSIAN DAN TAKLIMAT DISIPLIN 2.0	JPKK	LATIHAN BERKENAAN KESELAMATAN PELAJAR DI KAMSIS YANG BERBEZA PADA SETIAP SEMESTER DAN MEMBERI PENGETAHUAN KEPADA PENGHUNI MENGENAI PERATURAN DAN UNDANG-UNDANG DI KAMSIS
5	27/2/2025	PEMERIKSAAN BLOK SENTOSA 1	JPKK	MENGGALAKKAN PELAJAR SUPAYA LEBIH BERTANGGUNGJAWAB TERHADAP KEBERSIHAN DAN KESELAMATAN BILIK
6	5/8/2025	PEMERIKSAAN KAMSIS AMAN	JPKK	MENGGALAKKAN PELAJAR SUPAYA LEBIH BERTANGGUNGJAWAB TERHADAP KEBERSIHAN DAN KESELAMATAN BILIK

7	11/8/2025	KELAS BAHASA ISYARAT	JPKK	MEMBANTU PELAJAR MEMAHAMI KEPERLUAN DAN KESUKARAN GOLONGAN ORANG KURANG UPAYA (OKU)
8	24/3/2025	JAMUAN RAYA JPKK DAN MAJLIS APRESIASI JPKK	JPKK	BAGI MEMPROMOSIKAN KESEFAHAMAN DAN KESEPADUAN DALAM ORGANISASI
9	26/5/2025	PERJUMPAAN BLOK DAN TAKLIMAT DISIPLIN 3.0	JPKK	MEMBERI PENGETAHUAN KEPADA PENGHUNI MENGENAI PERATURAN DAN UNDANG-UNDANG DI KAMSIS
10.	27 JULAI 2025	PENDAFTARAN KAMSIS PELAJAR JUNIOR	JPKK	MEMUDAHKAN PERJALANAN PELAJAR BAHARU SESI 1 : 2025/2026 UNTUK PENDAFTARAN TINGGAL DI KAMSIS.
11.	27 JULAI 2025	KAMSISKU, RUMAHKU	JPKK	MEMPERKENALKAN BARISAN WARDEN DAN UNIT PENGURUSAN KOLEJ KEDIAMAN DI POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH.
12.	28 JULAI 2025	PENGUTIPAN BORANG MASUK/KELUAR DI BLOK KAMSIS	JPKK	MENGUTIP BORANG MASUK/KELUAR YANG TELAH DIISI DEANGAN LENGKAP BESERTA GAMBAR OLEH PENGHUNI DI SETIAP BLOK KAMSIS.
13.	3 OGOS 2025	PENDAFTARAN KAMSIS PELAJAR SENIOR	JPKK	MEMUDAHKAN PERJALANAN PENDAFTARAN KAMSIS UNTUK PELAJAR SENIOR TINGGAL DI KAMSIS.
14.	6 OGOS 2025	PERJUMPAAN BLOK DAN TAKLIMAT DISIPLIN	JPKK	MEMBERI PENDEDAHAN KEPADA PENGHUNI MENGENAI PERATURAN DAN TATATERTIB DI KAMSIS.

15.	19 OGOS 2025	AGIHAN BORANG PINTU DI BLOK SENTOSA, AMAN DAN DAMAI	JPKK	MENGAGIHKAN BORANG UNTUK PENGHUNI MENGISI MAKLUMAT PENTING UNTUK DITAMPAL PADA PINTU BILIK.
16.	20 OGOS 2025	TAKLIMAT KESELAMATAN DAN PELAN PENGUNGSIAN	JPKK	LATIHAN KESELAMATAN APABILA BERLAKU KECEMASAN YANG DILAKUKAN PADA SETIAP SESI SEMESTER DAN MELIBATKAN SELURUH WARGA KAMSIS.
7.	23 OGOS 2025	COLOUR RUN KAMSIS	JPKK	AKTIVITI SUKAN YANG MENGGALAKKAN INTERAKSI DAN KOMUNIKASI ANTARA PENGHUNI DARI PELBAGAI LATAR BELAKANG.

POLITEKNIK MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

KOLEJ KOMUNITI MALAYSIA

BUKU PANDUAN
PELAKSANAAN PROJEK PELAJAR
(PROGRAM DIPLOMA)
POLITEKNIK MALAYSIA

EDISI 2021

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(PROGRAM DIPLOMA)

POLITEKNIK MALAYSIA
KEMENTERIAN PENGAJIAN TINGGI
EDISI 2021

DOKUMEN INI DILULUSKAN
PENGGUNAANNYA DI PERINGKAT
POLITEKNIK MALAYSIA

Terbitan Edisi 2021

Hak cipta terpelihara. Tiada bahagian daripada terbitan ini boleh diterbitkan semula, disimpan untuk pengeluaran atau ditukarkan ke dalam sebarang bentuk atau dengan sebarang alat, sama ada dengan cara elektronik, gambar dan rakaman serta sebagainya tanpa kebenaran bertulis daripada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi terlebih dahulu.

Diterbitkan oleh:

Bahagian Instruksional dan Pembelajaran Digital,
Jabatan Pendidikan Politeknik dan Kolej Komuniti
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Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia KPT Edisi 2021

Pengenalan	Edisi 2012
Semakan Pertama	Edisi 2016
Semakan Kedua	Edisi 2021

PRAKATA

Assalamualaikum dan Salam Sejahtera,

Syukur ke hadrat Allah S.W.T kerana dengan rahmatNya, Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) berjaya menyempurnakan Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, Kementerian Pengajian Tinggi (KPT).

Buku Panduan ini adalah sebagai panduan dan rujukan bagi warga Politeknik Malaysia dan semua pihak yang terlibat dalam pelaksanaan projek pelajar (program diploma) bagi memastikan program pengajian yang ditawarkan di Politeknik Malaysia kekal relevan dan berkesan. Pelaksanaan kursus Projek ini turut berfungsi sebagai platform untuk pelajar mengembangkan potensi, mempamerkan keupayaan dan mempraktikkan ilmu yang telah dipelajari melalui percambahan fikiran dan penyelesaian masalah secara inovatif bagi menghasilkan projek/hasil kerja yang bermutu.

Buku ini mengandungi dua (2) bahagian merangkumi keseluruhan aspek pelaksanaan projek pelajar iaitu pengenalan, peranan dan tanggungjawab, perancangan projek, pelaksanaan projek, harta intelek projek, buku log, penulisan laporan dan format penulisan laporan. **Namun demikian, ia tertakluk kepada keperluan serta kesesuaian kursus dan program pengajian di politeknik berkenaan**.

Setinggi penghargaan dan ucapan terima kasih kepada ahli jawatankuasa serta semua pihak yang sama-sama terlibat dalam penerbitan buku ini. Semoga ianya dapat dimanfaatkan sebaiknya dalam memperkasakan pelaksanaan projek pelajar di Politeknik Malaysia di samping menjadi pendorong untuk melahirkan graduan TVET yang berkualiti dan holistik, selaras dengan hasrat Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Pendidikan Tinggi) dan mesra industri.

Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pengajian Tinggi
Tahun 2021

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TUJUAN

Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, KPT ini bertujuan untuk menyediakan satu panduan kepada pelaksana program pengajian di Politeknik Malaysia, pihak industri dan mana-mana pihak yang terlibat secara langsung dalam pelaksanaan projek pelajar. Buku panduan ini dibahagikan kepada **DUA (2)** bahagian:

BAHAGIAN I: PANDUAN PELAKSANAAN PROJEK PELAJAR

Bab 1: Pengenalan

Bab ini menerangkan kursus Projek yang dilaksanakan di Politeknik Malaysia berdasarkan kurikulum program pengajian masing-masing. Matlamat dan objektif pelaksanaan projek juga bergantung kepada jenis projek yang dibangunkan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 2: Peranan dan Tanggungjawab

Pelaksanaan projek memerlukan proses pengurusan dan penyelarasan yang berkesan daripada semua pihak dalam memastikan projek yang dihasilkan memenuhi keperluan program pengajian, berinovasi dan mempunyai nilai komersial. Terdapat beberapa pihak yang terlibat di dalam proses pelaksanaan projek, antaranya penyelaras projek yang mewakili politeknik, jabatan dan dibantu oleh pensyarah selaku penyelaras kursus dan penyelia serta panel penilai projek. Bab ini menjelaskan peranan dan tanggungjawab pihak-pihak yang terlibat bagi memastikan pelaksanaan projek dijalankan dengan baik dan berkesan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 3: Perancangan Projek

Bab ini menyenaraikan peraturan pelaksanaan projek yang perlu diikuti serta keperluan sepanjang pelaksanaan projek seperti penggunaan buku log, Carta Gantt dan pembiayaan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 4: Pelaksanaan Projek

Bab ini menerangkan secara keseluruhan aktiviti pelaksanaan projek yang dijalankan berdasarkan perancangan yang telah dibuat. Ia juga dilengkapi dengan contoh/panduan penulisan rubrik yang dapat membantu dalam proses membangunkan skema pemarkahan projek pelajar. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 5: Harta Intelek Projek

Bab ini menerangkan keperluan hak cipta terhadap sesuatu projek yang dihasilkan sama ada berbentuk produk atau penulisan. Bab ini turut menyentuh berkenaan penyediaan inventori projek pelajar peringkat program/jabatan/politeknik, penglibatan projek di pertandingan dalam/luar dan pengkomersialan projek yang dihasilkan. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 6: Buku Log

Bab ini menerangkan keperluan penyediaan buku log aktiviti sepanjang pelaksanaan projek melalui buku log serta dokumen-dokumen yang berkaitan yang boleh dirujuk oleh pelajar, penyelia dan penyelaras kursus Projek. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

Bab 7: Penulisan Laporan

Pelaksanaan projek melibatkan penulisan kertas cadangan sebelum projek dilaksanakan dan penulisan laporan akhir selepas projek dilaksanakan berserta analisis data. Bab ini memberi panduan mengenai bentuk penulisan dalam penyediaan kertas cadangan dan laporan akhir projek. Pelaksanaan yang digariskan ini tertakluk kepada keperluan serta kesesuaian bagi kursus, program pengajian dan politeknik.

BAHAGIAN II: FORMAT PENULISAN LAPORAN

Bahagian ini mengemukakan format penulisan dan penyediaan kertas cadangan dan laporan akhir projek bagi tujuan penyelarasan. Namun, kesesuaian penulisan projek perlu dirujuk kepada penyelia projek masing-masing.

BAHAGIAN I:

PANDUAN PELAKSANAAN PROJEK (PROGRAM DIPLOMA)

BAB 1: PENGENALAN

1.1 Pendahuluan

Kursus Projek merupakan satu kursus wajib bagi program pengajian tertentu yang perlu dilaksanakan oleh pelajar sebagai memenuhi syarat kelayakan penganugerahan Diploma Politeknik Kementerian Pengajian Tinggi (KPT). Kursus ini memberi peluang kepada pelajar untuk mengaplikasi pengetahuan dan kemahiran serta mempamerkan keupayaan dalam merealisasikan idea, kreativiti, inovasi dan penyelesaian masalah ke arah penghasilan projek/kajian yang mempunyai nilai komersial dan berdaya saing.

Pelaksanaan projek/kajian merangkumi semua proses pembelajaran dan pengajaran (PdP) iaitu secara teori, praktikal, penulisan ilmiah, pemantauan dan penilaian. Sepanjang pelaksanaan projek, pelajar dibimbing oleh penyelia untuk meneroka pengetahuan dan kemahiran baharu serta mengaitkan dengan pengetahuan sedia ada dan memastikan projek dapat disempurnakan dalam masa yang ditetapkan.

1.2 Definisi Projek

Projek merupakan aktiviti kajian kes/ilmiah yang bersesuaian berkaitan bidang dan tahap pengajian bagi memenuhi keperluan program pengajian. Kajian kes/ilmiah ini dilakukan secara individu atau berkumpulan (mengikut tahap pengajian) bermula daripada peringkat perancangan, pelaksanaan kajian, analisis keputusan dan pelaporan ilmiah di bawah bimbingan penyelia bagi mengembangkan potensi diri pelajar dengan menggunakan pengetahuan dan kemahiran dalam bidang masing-masing. Pelajar akan diselia oleh sekurang-kurangnya seorang pensyarah serta dinilai oleh institusi dan/atau industri.

1.3 Matlamat

Matlamat projek/kajian adalah untuk mengintegrasikan pengetahuan, kemahiran praktikal dan afektif yang diperoleh sepanjang mengikuti program pengajian dalam proses penggunaan sesuatu ilmu melalui percambahan fikiran dan penyelesaian masalah secara inovatif ke arah melahirkan graduan yang kompeten, kreatif dan berwibawa.

1.4 Objektif

Objektif pelaksanaan projek/kajian ini adalah untuk:

(a) memperkenalkan pelajar dengan kaedah kajian/pembangunan projek;
(b) mengaplikasikan pengetahuan teori ke dalam situasi praktikal;
(c) melatih pelajar melaksanakan projek/kajian dalam jangka masa yang ditetapkan;
(d) mengenal pasti pernyataan masalah, kajian literatur/lapangan/siasatan, pengumpulan data, analisis data dan penulisan laporan; dan
(e) membentang hasil projek/kajian melalui penulisan dan pembentangan.

1.5 Jenis Projek

Terdapat **DUA (2)** jenis projek yang boleh dihasilkan:

1.5.1 Projek Jenis Nyata (berdasarkan Produk/Inovasi)

Projek yang menghasilkan produk berupa prototaip, barangan, proses dan sistem menggunakan teknologi yang bersesuaian. Pembangunan projek ini sama ada menggunakan kaedah baharu atau kaedah sedia ada serta boleh merujuk kepada penyelesaian masalah di institusi, industri atau komuniti. Kaedah pembangunan dan pengujian ke atas projek perlu dinyatakan dengan jelas dan terperinci berserta sokongan data, analisis dan bukti-bukti berkaitan dengan projek.

1.5.2 Projek Jenis Kajian

Projek jenis ini merujuk kepada kemahiran dalam membuat kajian tentang permasalahan, pengurusan teknikal, teknologi baharu, simulasi, konseptual dan sebagainya yang berkaitan. Hasil kajian hendaklah disertakan sebagai bukti seperti dokumen yang dibangunkan, borang soal selidik, senarai semak dan lain-lain yang berkaitan.

Jadual 1.1 menunjukkan contoh projek jenis nyata dan projek jenis kajian. Namun, definisi bagi setiap jenis projek adalah mengikut keperluan dan kesesuaian program pengajian masing-masing.

Jadual 1.1: Contoh Jenis-Jenis Projek

Contoh Projek Jenis Nyata	Contoh Projek Jenis Kajian
Jig and fixture	Kajian Kes
Reka Bentuk	Eksperimen
Portfolio	Analisis
Perisian	Kaji Selidik
Sistem Aplikasi	Ujian Makmal
Perkakasan	Kajian Perancangan
Proses	Kajian Perniagaan
Perkhidmatan	Kajian Pemasaran
Pengurusan Acara	Pelan Perniagaan
Landskap	Pelan Pemasaran
Teknologi	Model

Nota: Jenis-jenis projek boleh ditambah atau diubah mengikut keperluan program pengajian masing-masing.

1.6 Struktur Projek

Secara umumnya, pelaksanaan kursus Projek adalah berdasarkan kepada keperluan struktur kurikulum program pengajian yang telah ditetapkan. Jumlah kredit juga bergantung kepada struktur kurikulum program pengajian berkenaan.

Bagi kursus Projek yang dilaksanakan dalam jangka masa **DUA (2)** semester (kursus Projek 1 diikuti dengan kursus Projek 2 secara berturutan jika berkaitan kecuali dengan kelulusan jabatan), Projek 1 merangkumi aktiviti penyediaan Kertas Cadangan *(Proposal Paper)* berkaitan dengan mengenal pasti masalah, menentukan objektif, mengemukakan kajian literatur/lapangan/siasatan dan menetapkan metodologi kajian. Projek 2 pula merangkumi aktiviti pengumpulan data, reka bentuk dan penghasilan produk dan/atau pembangunan kajian, analisis dan kesahan hasil, pembentangan keputusan, membuat kesimpulan dan cadangan serta penghasilan Laporan Akhir Projek pelajar.

Manakala, bagi kursus Projek yang dilaksanakan dalam tempoh satu semester sahaja merangkumi aktiviti berkaitan mengenal pasti masalah, menentukan objektif, mengemukakan kajian literatur, menetapkan metodologi kajian, pengumpulan data, analisis dan kesahan hasil, perbahasan keputusan, membuat kesimpulan serta cadangan. Namun, aktiviti ini mungkin berbeza antara program pengajian dan perlu mengikut kurikulum program pengajian yang telah ditetapkan.

1.7 Ciri-Ciri Projek/Kajian

Ciri-ciri projek/kajian secara umumnya adalah:

(a) mempunyai tempoh pelaksanaan dan objektif yang jelas;
(b) melaksanakan kajian atau projek yang menjurus kepada penyelesaian masalah yang ditakrif jelas (*well-defined)* secara ilmiah dan sistematik;
(c) berasaskan kehendak industri *(industry-driven)* atau/dan komuniti *(community-driven);*
(d) mempunyai ruang nilai penambahbaikan bagi meningkatkan lagi kualiti projek sedia ada *(future upgrade)*;

(e) mengambil kira perkembangan teknologi terkini seperti Revolusi Industri 4 *(4th Industrial Revolution),* teknologi hijau dan inovasi, penjimatan tenaga, kitar semula, ergonomik, keusahawanan dan lain-lain yang berkaitan serta mempunyai nilai komersial; dan

(f) digalakkan untuk menggabungjalinkan dua atau lebih disiplin/bidang *(multidiscipline*) sekiranya berkaitan.

***Nota**:*

(i). Program Kejuruteraan: menyelesaikan masalah/projek kejuruteraan (*industry-based* atau *practice-oriented* yang ditakrif secara jelas (*well-defined)* menggunakan teknik-teknik, sumber dan alat kejuruteraan yang sesuai dengan bidang pengajian.

(ii). Ciri-ciri projek boleh ditambah atau diubah mengikut keperluan program pengajian masing-masing (kejuruteraan, teknologi, perdagangan, perkhidmatan dan industri kreatif).

1.8 Kluster Penyelidikan

Bagi memastikan penyelidikan dan pelaksanaan kursus Projek di Politeknik Malaysia berjalan dengan sempurna dan berfokus kepada kekuatan yang ada, kluster penyelidikan projek merangkumi bidang-bidang asas (merujuk kepada Kluster Penyelidikan yang telah digariskan oleh KPT) adalah seperti di Jadual 1.2.

Jadual 1.2: Kluster Penyelidikan

Sains Tulen	Sains Gunaan	Teknologi dan Kejuruteraan	Sains Sosial	Warisan Alam dan Budaya	Teknologi Maklumat dan Komunikasi
(a) Biokimia (b) Biologi (c) Fizik (d) Geologi (e) Kimia (f) Sains Bahan (g) Matematik dan Statistik	(a) Biologi (b) Bioteknologi (c) Fizik (d) Geologi (e) Kimia (f) Matematik dan Statistik (g) Sains Bahan	<u>Teknologi</u> (a) Animasi (b) Infrastruktur dan Pengangkutan (c) Pembinaan dan Bahan <u>Kejuruteraan</u> (a) Aeroangkasa (b) Alam Sekitar (c) Awam dan Struktur (d) Bahan dan Polimer (e) Elektrikal dan Elektronik (f) Kejuruteraan Kimia dan Pemprosesan (g) Perkapalan / Seni Bina Perkapalan (h) Mekanikal dan Pembuatan (i) Perubatan (j) Seni Bina	(a) Ekonomi (b) Kajian Etnik (c) Komunikasi (d) Pengurusan (e) Perniagaan	(a) Kulinari (b) Pelancongan (c) Pertanian	(a) Animasi dan Multimedia (b) *Internet of Things* (IOT) (c) *Artificial Intelligent* (AI) (d) Perisian / *Software* (e) Rangkaian Komputer (f) Reka Bentuk Perkasasan (g) Robotik (h) Sistem Maklumat (i) Sistem Keselamatan (j) Teknologi Permainan

BAB 2: PERANAN DAN TANGGUNGJAWAB

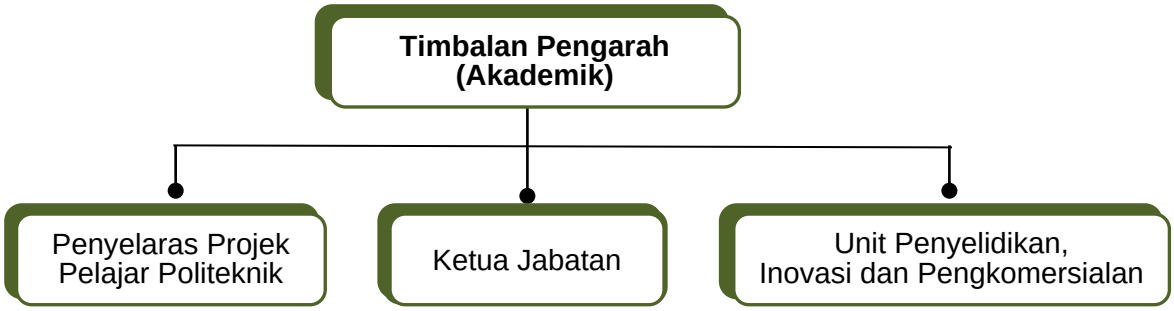
Pelaksanaan projek memerlukan proses pengurusan, penyelarasan dan pemantauan yang berkesan daripada semua pihak dalam memastikan projek yang dihasilkan oleh pelajar memenuhi keperluan program pengajian. Struktur gerak kerja yang dicadangkan di peringkat politeknik adalah seperti di bawah:

2.1 Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Politeknik

Jawatankuasa ini terdiri daripada:

(a) Timbalan Pengarah (Akademik)/Timbalan Pengarah (TP)
(b) Ketua Jabatan (KJ)
(c) Unit Penyelidikan, Inovasi dan Pengkomersialan (UPIK)
(d) Penyelaras Projek Pelajar Politeknik (PPPP)

Carta Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Politeknik yang dicadangkan seperti Rajah 2.1 di bawah.



Rajah 2.1: Cadangan Carta Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Politeknik

Terma Rujukan *(Terms of Reference):*

(a) merancang dan menyelaras pelaksanaan kursus Projek termasuk penggunaan fasiliti dan peruntukan kewangan (sekiranya ada);
(b) memantau pelaksanaan dan penilaian kursus Projek agar berjalan lancar dan efektif berdasarkan dokumen kurikulum yang sedang berkuat kuasa;

(c) mengenal pasti langkah penyelesaian ke atas isu/masalah merentas program/jabatan; dan

(d) mengadakan mesyuarat mengikut keperluan.

Nota: Pembentukan dan terma rujukan Jawatankuasa Pelaksanaan Projek Pelajar peringkat politeknik ini boleh disesuaikan mengikut keperluan politeknik masing-masing.

2.2 Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Jabatan

Jawatankuasa ini terdiri daripada:

(a) Ketua Jabatan

(b) Ketua Program

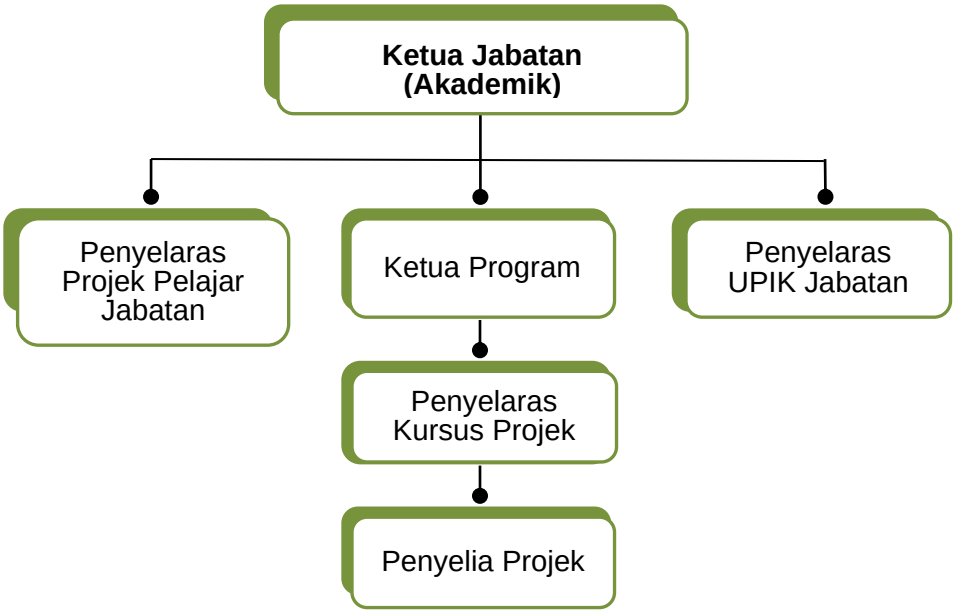
(c) Penyelaras UPIK Jabatan

(d) Penyelaras Projek Pelajar Jabatan

(e) Penyelaras Kursus Projek

(f) Penyelia Projek

Carta Jawatankuasa Projek Pelajar Peringkat Jabatan yang dicadangkan seperti Rajah 2.2 di bawah.



Rajah 2.2 : Carta Jawatankuasa Pelaksanaan Projek Pelajar Peringkat Jabatan

Terma Rujukan *(Terms of Reference):*

(a) merancang pelaksanaan kursus Projek di peringkat jabatan termasuk penggunaan fasiliti dan peruntukan kewangan (sekiranya ada);

(b) menyelaras, memantau dan memastikan pelaksanaan dan penilaian kursus Projek di peringkat jabatan berjalan lancar dan efektif berdasarkan dokumen kurikulum yang sedang berkuat kuasa;

(c) mengenal pasti langkah penyelesaian ke atas isu/masalah merentas program pengajian di jabatan;

(d) melaporkan pelaksanaan kursus Projek kepada Jawatankuasa Pelaksanaan Projek Pelajar di peringkat politeknik dan pihak pengurusan politeknik; dan

(e) mengadakan mesyuarat mengikut keperluan.

***Nota**:* Pembentukan dan terma rujukan Jawatankuasa Pelaksanaan Projek Pelajar peringkat jabatan ini boleh disesuaikan mengikut keperluan jabatan dan program pengajian masing-masing.

2.3 Peranan dan Tanggungjawab

Bagi memastikan pelaksanaan kursus Projek berjalan dengan baik dan berkesan, pegawai-pegawai tersebut adalah terlibat:

2.3.1 Timbalan Pengarah (Akademik)/Timbalan Pengarah

Berikut merupakan tugas sebagai Timbalan Pengarah (Akademik)/Timbalan Pengarah:

(a) mempengerusikan Mesyuarat Jawatankuasa Pengurusan Akademik/ Jawatankuasa Pelaksanaan Projek Pelajar peringkat politeknik bagi membincangkan perkara berkaitan pelaksanaan kursus Projek;

(b) melantik pegawai untuk menganggotai Jawatankuasa Pelaksanaan Projek Pelajar peringkat politeknik;

(c) mengenal pasti langkah penyelesaian ke atas isu merentas jabatan/program; dan

(d) mengesahkan Anggaran Belanja Mengurus (ABM) (sekiranya perlu) bagi pelaksanaan projek pelajar.

2.3.2 Penyelaras Projek Pelajar Politeknik

Berikut merupakan tanggungjawab Penyelaras Projek Pelajar Politeknik:

(a) menjalankan tugas sebagai pegawai perantara bagi tujuan penyelarasan pelaksanaan kursus Projek antara politeknik dengan JPPKK;

(b) menjadi pegawai perantara antara UPIK dan juga Penyelaras Projek Pelajar Jabatan di politeknik;

(c) menyelaras takwim/jadual perancangan aktiviti pelaksanaan kursus Projek yang disahkan oleh TP(A) berpandukan kurikulum yang sedang berkuat kuasa dan Kalendar Akademik JPPKK;

(d) menyedia dan menyampaikan tatacara pengurusan projek/kajian kepada semua Penyelaras Projek Pelajar Jabatan;

(e) memberi taklimat dan mengadakan perbincangan dengan semua Penyelaras Projek Pelajar Jabatan tentang pelaksanaan projek pelajar di jabatan masing-masing berpandukan kurikulum yang sedang berkuat kuasa;

(f) membawa dan membincangkan perkara berkaitan kursus Projek dalam Mesyuarat Jawatankuasa Pengurusan Akademik/Jawatankuasa Pelaksanaan Projek Pelajar atau mana mana mesyuarat berkaitan di peringkat politeknik;

(g) menyelaras ABM bagi pelaksanaan kursus Projek pelajar (sekiranya ada);

(h) memastikan rekod inventori projek pelajar di peringkat jabatan dan politeknik dikemaskini secara berterusan; dan

(i) menangani isu atau masalah berbangkit.

***Nota**:* Tanggungjawab Penyelaras Projek Pelajar peringkat politeknik ini boleh disesuaikan mengikut keperluan politeknik masing-masing.

2.3.3 Ketua Jabatan

Berikut merupakan tugas sebagai Ketua Jabatan:

(a) mempengerusikan Mesyuarat Jawatankuasa Pelaksanaan Projek Pelajar peringkat jabatan bagi membincangkan perkara berkaitan pelaksanaan kursus Projek;
(b) membawa dan membincangkan perkara berkaitan kursus Projek dalam Mesyuarat Jawatankuasa Pengurusan Akademik/Jawatankuasa Pelaksanaan Projek Pelajar di peringkat politeknik;
(c) memastikan pelaksanaan dan penilaian kursus Projek berdasarkan dokumen kurikulum yang sedang berkuat kuasa;
(d) memilih dan melantik pegawai yang terlibat dengan kursus Projek di peringkat jabatan; dan
(e) mendapatkan peruntukan pelaksanaan kursus Projek pelajar (sekiranya ada).

2.3.4 Unit Penyelidikan, Inovasi dan Pengkomersialan (UPIK)

Berikut merupakan tanggungjawab UPIK:

(a) merancang aktiviti berkaitan pembangunan produk inovasi, pertandingan hasil projek serta hasil penyelidikan dan inovasi;
(b) memudah cara aktiviti inovasi dan penyelidikan bersama pihak bertanggungjawab jika berkaitan;
(c) menyelaras pertandingan untuk memilih projek terbaik di peringkat politeknik;
(d) menyimpan rekod inventori projek di peringkat politeknik;
(e) mengenal pasti produk yang mempunyai nilai komersial dengan kerjasama Penyelaras Projek Pelajar Jabatan;
(f) menyelaras permohonan geran penyelidikan mengikut keperluan;
(g) menyelaras proses permohonan *Intellectual Property (IP)* bagi projek pelajar yang berpotensi dan berimpak tinggi;

(h) memaklum dan menyelaras penyertaan pertandingan inovasi di luar politeknik;

(i) menyelaras proses pengkomersialan projek/produk tertakluk kepada dasar yang ditetapkan oleh Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK); dan

(j) memaklumkan kepada pelajar secara bertulis sekiranya projek/produk mereka berjaya dikomersialkan untuk urusan pembahagian hasil pengkomersialan dalam kalangan pencipta.

2.3.5 Ketua Program

Berikut merupakan tugas sebagai Ketua Program:

(a) memantau pelaksanaan dan penilaian kursus Projek berdasarkan dokumen kurikulum yang sedang berkuat kuasa;

(b) menganalisis pencapaian hasil pembelajaran; dan

(c) mengawal selia penambahbaikan kualiti program pengajian secara berterusan *(CQI).*

2.3.6 Penyelaras Projek Pelajar Jabatan

Berikut merupakan tanggungjawab Penyelaras Projek Pelajar Jabatan:

(a) menjadi pegawai perantara antara jabatan akademik dan UPIK;

(b) memberi taklimat kepada Penyelia Projek;

(c) mewujudkan pangkalan data inventori projek yang diselenggara di jabatan;

(d) menyimpan satu salinan Borang Pendaftaran Projek Pelajar yang telah disahkan;

(e) memastikan rekod inventori projek dikemaskini dari semasa ke semasa;

(f) mengenal pasti dan melantik Panel Penilai projek dengan pengesahan;

(g) menyelaras pertandingan/simposium/kolokium/seminar projek pelajar peringkat jabatan; dan

(h) menangani isu atau masalah berbangkit.

***Nota**:* Tanggungjawab Penyelaras Projek Pelajar peringkat jabatan ini boleh disesuaikan mengikut keperluan jabatan dan program pengajian masing-masing.

2.3.7 Penyelaras Kursus Projek

Berikut merupakan tugas sebagai Penyelaras Kursus Projek:

(a) menjadi pegawai perantara antara pelajar dan Penyelia Projek;
(b) menyediakan senarai Penyelia Projek yang disahkan oleh Ketua Jabatan;
(c) menyerahkan senarai Penyelia Projek kepada Penyelaras Jadual Waktu Jabatan;
(d) memberi taklimat kursus Projek kepada pelajar;
(e) menyediakan maklumat berkaitan kursus Projek;
(f) menyediakan jadual perancangan aktiviti projek sepanjang semester;
(g) menyediakan senarai nama ahli kumpulan Projek pelajar berserta Penyelia Projek;
(h) menyimpan satu salinan Borang Pendaftaran Projek yang telah disahkan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);
(i) memastikan tiada pertindihan dan pengulangan tajuk projek serta meluluskan pertukaran tajuk projek;
(j) mengedarkan senarai Penyelia Projek yang dilantik dan disahkan oleh Ketua Jabatan;
(k) menyedia dan mengedarkan jadual pembentangan dan penilaian kursus Projek;
(l) menyediakan borang rubrik pemarkahan kursus Projek secara berasingan bagi setiap pelajar;
(m) menyerahkan satu salinan Borang Pendaftaran Projek yang telah diluluskan kepada Penyelaras Projek Pelajar Jabatan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);
(n) mengedarkan senarai Panel Penilai projek yang dilantik;
(o) menyediakan prosedur dan panduan penilaian kursus Projek;

(p) memastikan markah direkodkan ke dalam sistem;
(q) menganalisis pencapaian hasil pembelajaran kursus Projek;
(r) mengumpul, merekod dan mengemaskini inventori Projek (rujuk BAB 5: HARTA INTELEK PROJEK);
(s) membuat cadangan penambahbaikan kualiti kursus Projek secara berterusan (CQI); dan
(t) menyimpan satu salinan Laporan Akhir Projek dan hasil projek jika berkeperluan;

2.3.8 Penyelia Projek

Berikut merupakan tanggungjawab Penyelia Projek:

(a) membincangkan tajuk dan skop projek/kajian dengan pelajar serta mengesahkannya;
(b) melulus dan menyerahkan Borang Pendaftaran Projek kepada Penyelaras Kursus Projek pada awal semester untuk pengesahan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);
(c) menyediakan surat kebenaran kepada pelajar untuk menjalankan projek/kajian (sekiranya perlu);
(d) bertanggungjawab terhadap keselamatan pelajar ketika di makmal/bengkel (jika berkaitan).
(e) membimbing, memudah cara dan menyelia pelajar supaya proses pembelajaran, pengisian pengetahuan dan perjalanan projek dapat dilaksanakan ke arah mencapai hasil pembelajaran yang ditetapkan (rujuk BAB 7 : PENULISAN LAPORAN);
(f) merekod kehadiran pelajar;
(g) mengadakan pertemuan/perbincangan dengan pelajar secara bersemuka atau dalam talian (*online*) serta menyemak dan mengesahkan rumusan kemajuan projek/kajian sepanjang semester menggunakan Buku Log (rujuk BAB 6: BUKU LOG);

(h) membimbing dan menasihati pelajar cara penulisan kertas cadangan/laporan bersesuaian dengan jenis projek/kajian yang dilaksanakan oleh pelajar (rujuk BAHAGIAN II: FORMAT PENULISAN LAPORAN);
(i) memastikan penulisan adalah berdasarkan format dan panduan penulisan yang telah di tetapkan;
(j) menilai projek/kajian pelajar di bawah seliaan;
(k) merekod dan menyerahkan markah kepada Penyelaras Kursus Projek;
(l) memastikan pelajar menghantar satu salinan laporan dan/atau hasil projek kepada Penyelaras Kursus Projek mengikut tarikh yang ditetapkan; dan
(m) menyimpan satu salinan Laporan Akhir Projek dan hasil projek (jika berkeperluan);

2.3.9 Mentor Industri

Berikut merupakan tugas Mentor Industri semasa pelajar berada di dalam semester WBL:

(a) memberi cadangan tajuk projek pelajar;
(b) meluluskan cadangan projek pelajar (jika berkaitan);
(c) membimbing, memudahcara dan menyelia pelajar supaya proses pembelajaran, pengisian pengetahuan dan perjalanan projek dapat dilaksanakan ke arah mencapai hasil pembelajaran yang ditetapkan;
(d) menyemak dan mengesahkan Buku Log Projek pelajar secara berkala (jika berkaitan); dan
(e) menilai projek pelajar mengikut keperluan kursus.

***Nota**:* Pelaksanaan kursus Projek di industri bagi program pengajian secara WBL dan tanggungjawab Mentor Industri ini boleh disesuaikan mengikut keperluan program pengajian masing-masing (jika berkaitan).

2.3.10 Panel Penilai

Panel Penilai adalah terdiri daripada pensyarah atau panel luar yang pakar dalam bidang masing-masing. Berikut merupakan tanggungjawab Panel Penilai projek:

(a) menilai pembentangan kertas cadangan/projek pelajar dengan menggunakan borang pemarkahan atau rubrik mengikut program pengajian; dan

(b) mengembalikan borang pemarkahan atau rubrik kepada Penyelia Projek/Penyelaras Kursus Projek pada tarikh yang ditetapkan.

***Nota**:* Kaedah penilaian boleh dilaksanakan dalam pelbagai kaedah sama ada secara bersemuka atau dalam talian mengikut kesesuaian dan situasi semasa.

2.3.11 Pelajar

Berikut merupakan tanggungjawab pelajar:

(a) mematuhi prosedur dan peraturan keselamatan, kesihatan dan etika di makmal/bengkel (jika berkaitan);

(b) melaksanakan tanggungjawab sebagai ahli kumpulan dalam projek berkumpulan (jika berkaitan);

(c) membuat kajian awal keperluan industri atau komuniti dalam menentukan pemilihan tajuk, keaslian idea dan hala tuju projek serta mempunyai nilai komersial;

(d) memilih projek yang menyumbang kepada keperluan industri atau komuniti dan digalak mengadakan kolaborasi dengan pihak berkenaan;

(e) menyedia dan mengemukakan cadangan tajuk projek kepada Penyelia Projek pada awal semester;

(f) melengkapkan dan mengemukakan Borang Pendaftaran Projek kepada Penyelia Projek dalam tempoh yang ditetapkan untuk kelulusan (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);

(g) melaksanakan projek mengikut takwim dan carta Gantt pelaksanaan projek;

(h) merekod kemajuan projek dalam Buku Log dan mendapatkan pengesahan Penyelia Projek;

(i) mengadakan perbincangan secara bersemuka atau dalam talian (*online*) dengan Penyelia Projek secara berkala dengan membawa bersama dokumen yang berkaitan;

(j) mendapatkan Surat Mohon Khidmat Kepakaran dan Kerjasama Industri (jika berkaitan) untuk menjalankan projek daripada Ketua Jabatan (rujuk LAMPIRAN E: CONTOH SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI);

(k) menyedia dan menyerahkan Laporan Akhir Projek berserta produk (jika berkaitan) untuk pembentangan dan penilaian projek;

(l) berusaha mencapai kualiti dan hasil pembelajaran mengikut kriteria penilaian yang ditetapkan;

(m) memohon kebenaran secara bertulis kepada pihak jabatan sekiranya terdapat tawaran pembelian daripada mana-mana syarikat atau organisasi semasa tempoh pengajian mahupun selepas bergraduat; dan

(n) mengikuti arahan pihak politeknik dari semasa ke semasa.

BAB 3: PERANCANGAN PROJEK

3.1 Peraturan Projek

Berikut merupakan peraturan dalam pelaksanaan projek yang perlu dipatuhi berdasarkan keperluan program pengajian:

(a) pelajar dibenarkan mengambil kursus Projek mengikut syarat kurikulum program pengajian;

(b) pelajar yang mendaftar kursus Projek sahaja yang dibenarkan untuk melaksanakan projek;

(c) pelajar hendaklah mendapatkan bimbingan/khidmat nasihat daripada Penyelia Projek dalam pemilihan tajuk projek/kajian;

(d) pemilihan tajuk adalah berdasarkan bidang program masing-masing dan pelajar amat digalak melaksanakan projek merentasi bidang yang dipelajari seiring dengan perkembangan teknologi terkini;

(e) pelajar perlu mendaftar tajuk projek/kajian (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK);

(f) pertukaran tajuk projek/kajian dan Penyelia Projek dibenarkan dengan kebenaran Penyelaras Kursus Projek (rujuk LAMPIRAN C: BORANG PERMOHONAN PERTUKARAN TAJUK PROJEK);

(g) pelajar perlu menyediakan carta Gantt pelaksanaan projek (rujuk LAMPIRAN B: CARTA GANTT PROJEK PELAJAR). Perancangan kerja disediakan dalam bentuk carta Gantt dengan memperincikan pengagihan tugas di antara ahli kumpulan (jika berkenaan) dan sasaran masa bagi setiap tugasan. Perancangan atau skop kerja mestilah merujuk kepada tugasan sebenar untuk menjalankan projek/kajian berkenaan. Untuk tujuan perancangan kerja, pelajar boleh mengaplikasikan konsep *Plan-Do-Check-Action (PDCA)* dalam merancang pelaksanaan projek atau konsep yang bersesuaian;

(h) pelajar perlu merekodkan aktiviti pelaksanaan projek/kajian dalam Buku Log (rujuk LAMPIRAN G: BUKU LOG);

(i) penggunaan fasiliti politeknik perlu mendapat kelulusan daripada pegawai bertanggungjawab (rujuk LAMPIRAN D: BORANG PERMOHONAN MENGGUNAKAN KEMUDAHAN MAKMAL/BENGKEL);

(j) pelajar perlu mendapatkan surat kebenaran daripada pihak politeknik sekiranya projek/kajian tersebut melibatkan agensi luar/industri (rujuk LAMPIRAN E: SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI);

(k) pelajar **wajib** memenuhi **semua komponen penilaian** kursus Projek dalam program pengajian yang diikuti. Pelajar yang gagal berbuat demikian boleh diberikan status **GAGAL** kursus Projek;

(l) projek pelajar akan disimpan di politeknik selama setahun sebagai bahan rujukan (jika berkaitan); dan

(m) pelajar perlu memastikan hasil penulisan projek adalah bebas dari unsur plagiat.

3.2 Agihan Pelajar dan Penyelia Projek

Agihan pelajar dan Penyelia Projek dilaksanakan oleh Penyelaras Kursus Projek.

3.3 Pemilihan Projek/Kajian

Pemilihan projek/kajian dilaksanakan selepas perbincangan di antara Penyelia Projek dan pelajar berdasarkan ciri-ciri projek/kajian yang dinyatakan di Bab 1, perkara 1.7.

3.4 Pembiayaan

Kos keseluruhan projek/kajian pelajar ditanggung sepenuhnya oleh pelajar. Namun, politeknik tiada halangan sekiranya pelajar mendapatkan mana-mana penajaan untuk melaksanakan projek tersebut dan perlu memaklumkannya kepada Penyelia Projek.

BAB 4: PELAKSANAAN PROJEK

4.1 Carta Alir Pelaksanaan Projek

Pelaksanaan projek perlu melalui proses dan prosedur yang telah ditetapkan di dalam kurikulum program masing-masing (rujuk carta alir dan penerangan mengenai pelaksanaan kursus Projek mengikut bidang pengajian). Namun, pelaksanaan kursus Projek adalah berbeza antara program pengajian (kejuruteraan, teknologi, perdagangan, perkhidmatan dan industri kreatif) dan perlu mengikut kurikulum program yang telah ditetapkan.

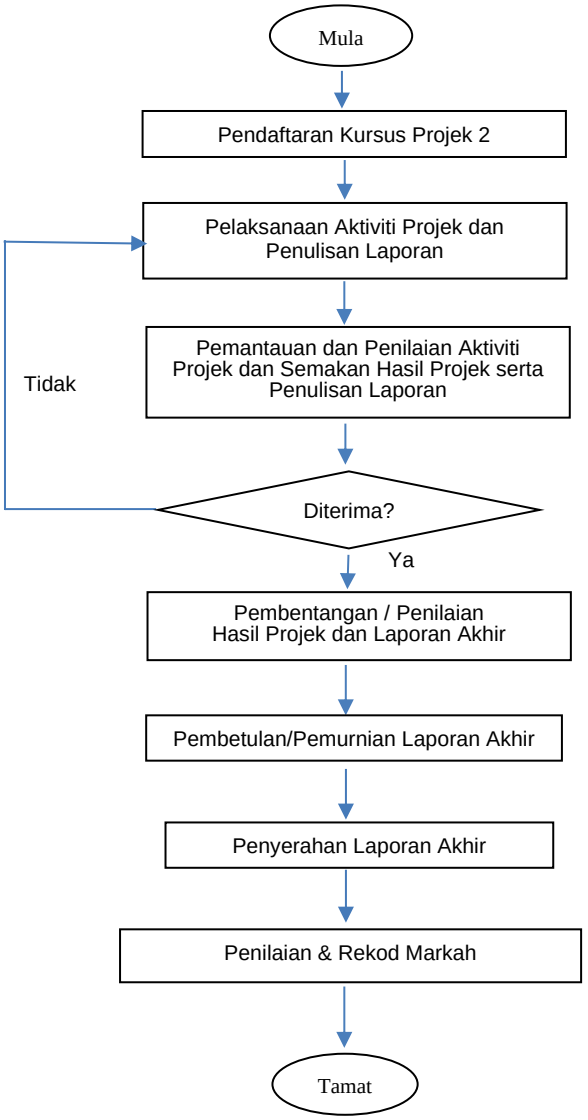
(a) Kursus Projek yang dijalankan dalam tempoh <u>DUA (2)</u> semester

(i). <u>Carta Alir Projek 1</u>:

Carta Alir Pelaksanaan Projek 1	Pelaksana	Rujukan
Mula		Kalendar Akademik / takwim / jadual perancangan aktiviti pelaksanaan kursus Projek
Pendaftaran Kursus Projek 1	Pelajar	
Taklimat Projek	Penyelaras Kursus	Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma)
Pembentukan Kumpulan Projek	Pelajar	
Pemilihan Tajuk Projek & Penyelia Projek	Penyelia Projek / Penyelaras Kursus Projek / Penyelaras Projek Jabatan	LAMPIRAN A BORANG PENDAFTARAN PROJEK
Penyediaan Kertas Cadangan Projek	Pelajar diselia oleh Penyelia Projek	BAB 7 PENULISAN LAPORAN
Semakan Kertas Cadangan Projek	Penyelia Projek	
Tolak / Pembentangan Kertas Cadangan	Pelajar dan Penyelia Projek/Penyelaras Kursus/Panel Penilai	LAMPIRAN F CONTOH RUBRIK PENILAIAN
Terima		
Penilaian Kertas Cadangan Projek	Penyelia Projek /Panel Penilai	Rubrik Penilaian Kertas Cadangan Projek mengikut program pengajian
Perekodan Markah	Penyelia Projek / Penyelaras Kursus	Borang Penilaian
Tamat		

Rajah 4.1 Carta Alir Pelaksanaan Kursus Projek 1

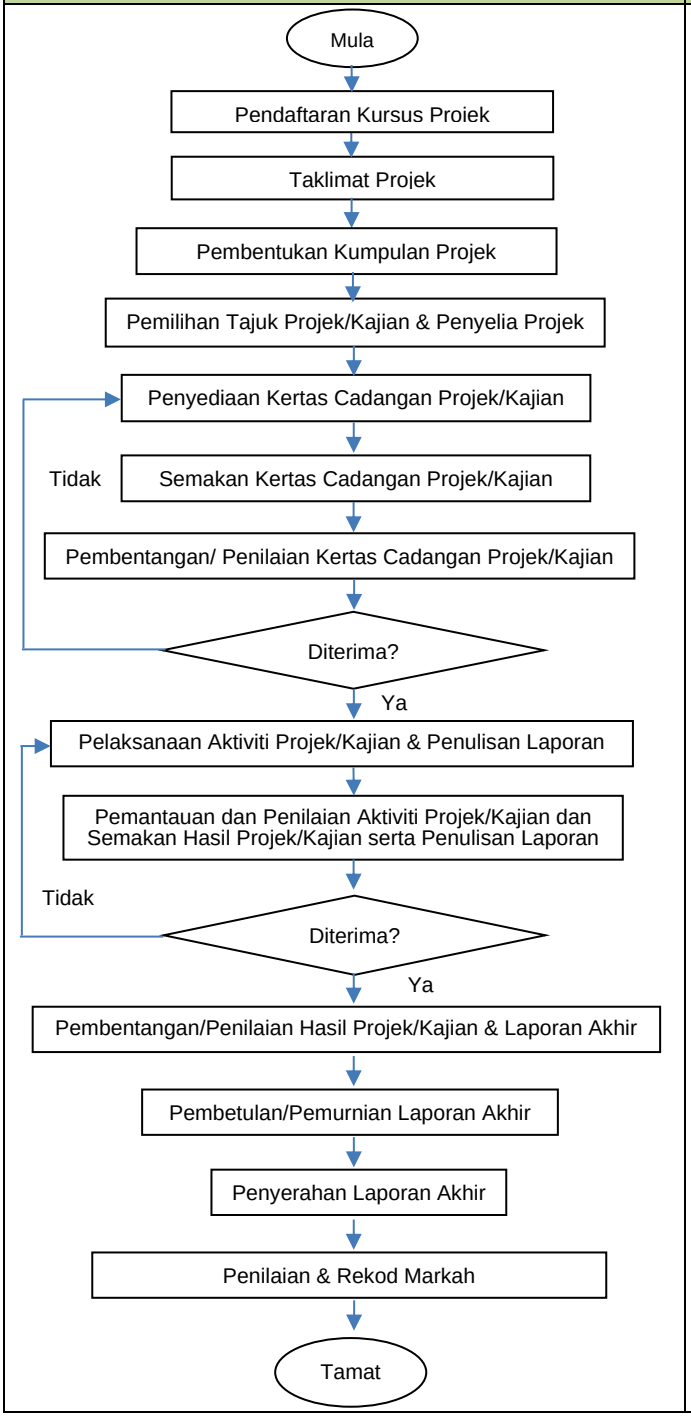
(ii). Carta Alir Projek 2:

Carta Alir Pelaksanaan Projek 2	Pelaksana	Rujukan
	Pelajar Pelajar diselia/dibimbing oleh Penyelia Pojek Pelajar dan Penyelia Projek Pelajar dan Penyelia Projek/ Panel Penilai Pelajar dan Penyelia Projek Pelajar Penyelia Projek/ Panel Penlai Penyelia Projek / Penyelaras Kursus	Kalendar Akademik / Takwim / Jadual Perancangan Aktiviti Pelaksanaan Kursus Projek Kertas Cadangan Projek BAB 6 PENULISAN BUKU LOG BAB 7 PENULISAN LAPORAN LAMPIRAN F CONTOH RUBRIK PENILAIAN BAB 7 PENULISAN LAPORAN LAMPIRAN I AKUAN KEASLIAN DAN HAK MILIK LAMPIRAN F CONTOH RUBRIK PENILAIAN Borang Penilaian Penyelia

Rajah 4.2 Carta Alir Pelaksanaan Kursus Projek 2

***Nota*:** Pelaksanaan Carta Alir pada Rajah 4.1 dan Rajah 4.2 yang digariskan ini tertakluk kepada keperluan dan kesesuaian kursus dan program pengajian di politeknik.

(b) Kursus Projek yang dijalankan dalam tempoh <u>SATU (1)</u> semester sahaja.

Carta Alir Kursus Projek	Pelaksana	Rujukan
	Pelajar Penyelaras Projek Pelajar / Penyelia Projek Pelajar Pelajar diselia oleh Penyelia Projek Penyelia Projek Pelajar/ Panel Penilai Pelajar Penyelia Projek Pelajar / Panel Penilai Pelajar Pelajar Penyelia Projek/ Penyelaras Projek Pelajar Jabatan	Kalendar Akademik / takwim / jadual perancangan aktiviti pelaksanaan kursus Projek LAMPIRAN A BORANG PENDAFTARAN PROJEK BAB 7 PENULISAN LAPORAN LAMPIRAN F CONTOH RUBRIK PENILAIAN BAB 7 PENULISAN BUKU LOG LAMPIRAN F CONTOH RUBRIK PENILAIAN LAMPIRAN I AKUAN KEASLIAN DAN HAK MILIK LAMPIRAN F CONTOH RUBRIK PENILAIAN Borang Penilaian Penyelia

Rajah 4.3 Carta Alir Pelaksanaan Kursus Projek

***Nota*:** Pelaksanaan Carta Alir yang digariskan ini tertakluk kepada keperluan dan kesesuaian kursus dan program pengajian di politeknik.

4.1.1 Pendaftaran Kursus Projek

Pelajar mendaftar kursus Projek dengan kaedah yang ditetapkan oleh politeknik.

4.1.2 Taklimat

Penyelaras Projek Pelajar Jabatan/Penyelaras Kursus Projek menyampaikan taklimat projek kepada Penyelia Projek dan pelajar pada **minggu pertama** perkuliahan. Penerangan ini bagi memastikan semua pihak yang terlibat mendapat maklumat yang jelas dan selaras terhadap tugas serta tanggungjawab masing-masing ke arah penghasilan projek pelajar yang berkualiti, berinovasi dan mempunyai nilai komersial. Isi kandungan taklimat yang dicadangkan adalah seperti berikut:

(a) *Course Outline* (CLO, PLO, AST) berdasarkan dokumen kurikulum;
(b) aktiviti pelaksanaan projek/kajian mengikut kalendar dan takwim/jadual perancangan aktiviti pelaksanaan kursus Projek;
(c) jenis-jenis projek/kajian berdasarkan keperluan program masing-masing;
(d) tema, tajuk dan idea projek/kajian dalam bidang;
(e) pengagihan pelajar mengikut Penyelia Projek;
(f) pendaftaran tajuk projek/kajian yang dipersetujui oleh Penyelia Projek dan/atau Penyelaras Kursus Projek;
(g) penulisan Kertas Cadangan dan carta Gantt;
(h) penilaian pembentangan dan kertas cadangan;
(i) Buku Log pelajar;
(j) pelaksanaan projek pelajar;
(k) pembahagian markah berdasarkan dokumen kurikulum program pengajian;
(l) pelaporan, pembentangan dan Laporan Akhir Projek;
(m) pembiayaan projek;
(n) hak milik projek; dan
(o) Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik yang sedang berkuat kuasa yang perlu dipatuhi.

4.1.3 Pembentukan Kumpulan Projek

Projek/Kajian boleh dilaksanakan secara individu atau berkumpulan (tidak melebihi **empat (4)** orang pelajar) mengikut bentuk projek/kajian yang hendak dijalankan. Bagi projek berkumpulan, skop tugasan bagi setiap ahli kumpulan hendaklah dinyatakan dengan jelas dan terperinci. Kertas Cadangan dan Laporan Akhir Projek boleh dihasilkan mengikut kumpulan tetapi penulisan perlu mengikut skop tugasan setiap ahli kumpulan. Namun, pelajar amat digalakkan untuk menghasilkan kertas cadangan dan laporan projek secara individu.

Nota: Pembentukan kumpulan projek boleh ditambah atau diubah mengikut keperluan program pengajian masing-masing.

4.1.4 Pemilihan Tajuk Projek/Kajian dan Penyelia Projek

Pelajar perlu mengemukakan Borang Pendaftaran Projek (rujuk LAMPIRAN A: BORANG PENDAFTARAN PROJEK) untuk pemilihan tajuk projek/kajian dan penyelia projek **selewat-lewatnya pada minggu ke-3** sesi perkuliahan, bergantung kepada takwim pelaksanaan kursus Projek atau sebarang pindaan semasa. Penyelaras Projek Pelajar Jabatan/Penyelaras Kursus Projek/Penyelia Projek digalakkan untuk menetapkan tema/kategori bagi membantu pelajar menjana idea dan menentukan projek/kajian yang bakal dilaksanakan. Tajuk projek/kajian yang dipilih perlu memenuhi skop dan selaras dengan kurikulum kursus mengikut program pengajian masing-masing. Cetusan idea projek adalah daripada pelajar sendiri, penyelia, komuniti setempat atau kolaborasi industri.

Penyelia Projek perlu mengesahkan tajuk projek/kajian yang telah dipilih oleh pelajar. Tajuk projek/kajian merupakan tajuk yang telah dipersetujui oleh Penyelaras Kursus Projek, Penyelia Projek dan pelajar bagi memenuhi ciri-ciri yang dinyatakan dalam Bab 1 pada perkara 1.5 dan 1.7.

Pertukaran tajuk projek hanya dibenarkan dengan persetujuan Penyelia Projek dan sokongan Penyelaras Kursus Projek. Pertukaran tajuk projek dengan kebenaran boleh dilakukan hingga **minggu ke-6** perkuliahan. Pelajar perlu merujuk kepada inventori projek sebelum memberi cadangan tajuk baharu kepada Penyelia Projek. Walau

bagaimanapun, pelajar boleh merujuk kepada projek/kajian terdahulu bagi tujuan penambahbaikan produk/kajian yang sedia ada.

4.1.5 Penyediaan Kertas Cadangan Projek/Kajian

Penyediaan Kertas Cadangan projek/kajian adalah bergantung kepada keperluan kursus dan program pengajian (rujuk BAB 7: PENULISAN LAPORAN pada perkara 7.1) dalam proses penulisan. Penulisan Kertas Cadangan boleh dibuat dalam Bahasa Malaysia atau Bahasa Inggeris. Namun, ia tertakluk kepada pengurusan projek pelajar di politeknik masing-masing.

4.1.6 Semakan Kertas Cadangan Projek/Kajian

Penyelia Projek harus menyemak Kertas Cadangan projek/kajian yang telah disediakan oleh pelajar untuk menentukan kesesuaian projek/kajian. Sekiranya Kertas Cadangan gagal menepati ciri/kriteria yang ditetapkan dan wujud ketidakakuran, pelajar perlu membuat pembetulan Kertas Cadangan tersebut dengan bimbingan Penyelia Projek. Maklumat yang berkaitan boleh merujuk pada BAB 7: PENULISAN LAPORAN dalam perkara 7.1.

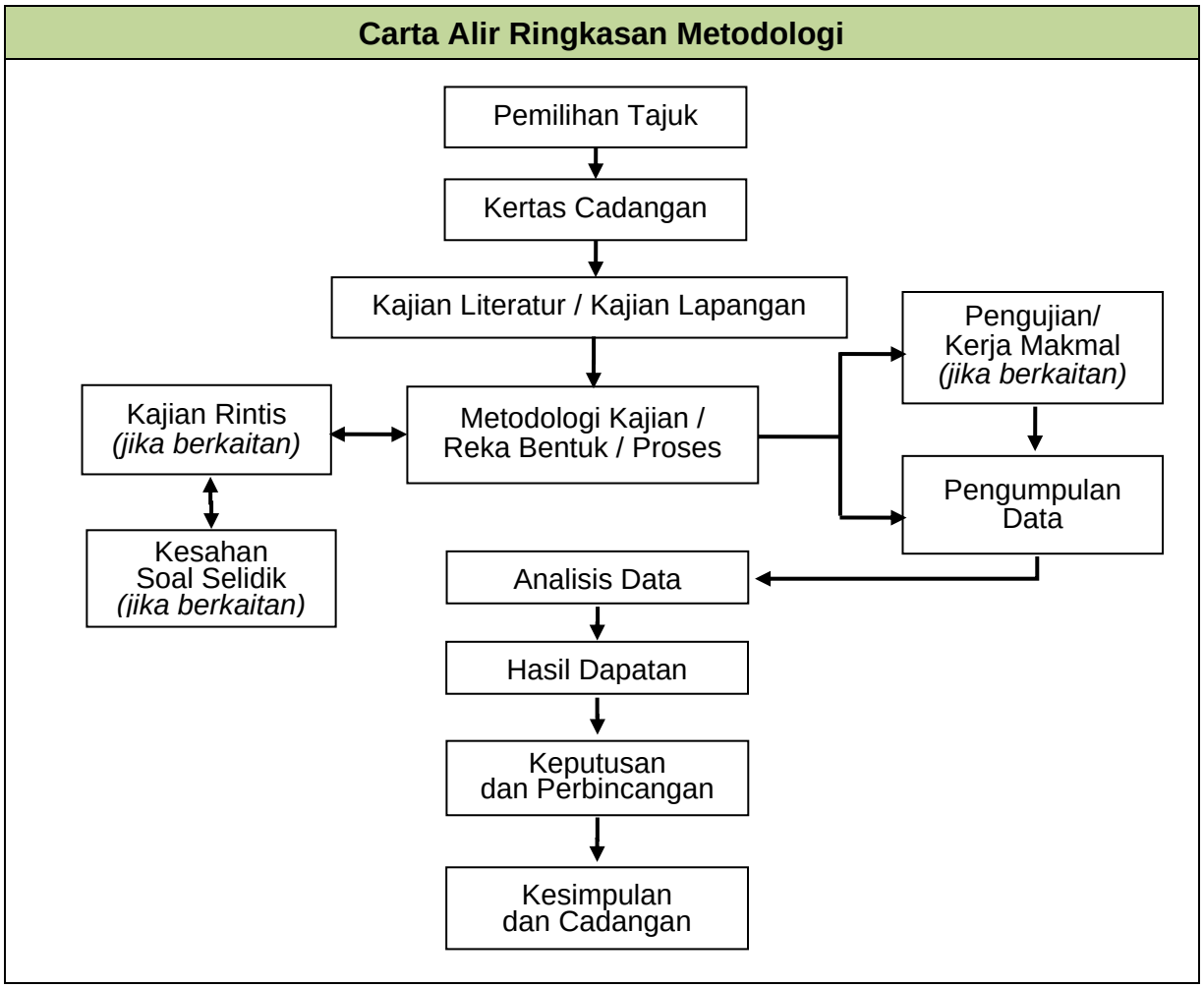
4.1.7 Pembentangan dan Penilaian Kertas Cadangan Projek/Kajian

Pelajar perlu membentang Kertas Cadangan projek/kajian kepada Penyelia Projek/Panel Penilai. Penyelia Projek/Panel Penilai akan menilai Kertas Cadangan projek/kajian pelajar berdasarkan rubrik yang disediakan oleh Penyelaras Kursus Projek (rujuk LAMPIRAN F: CONTOH RUBRIK PENILAIAN). Bagi Kertas Cadangan projek/kajian yang memenuhi ciri/kriteria tetapi terdapat komen dari Penyelia Projek/Panel Penilai, pelajar dikehendaki membuat pembetulan yang sewajarnya dan menyerahkan semula Kertas Cadangan yang telah diperbetulkan. Penyelia Projek akan merekodkan markah ke dalam Sistem Pengurusan Maklumat Politeknik (SPMP) atau Sistem Pengurusan Maklumat iPUO yang diguna pakai di politeknik.

Nota: Rubrik Penilaian boleh disesuaikan mengikut keperluan program masing-masing.

4.1.8 Pelaksanaan Aktiviti Projek/Kajian dan Penulisan Laporan

Kelulusan untuk meneruskan projek/kajian adalah tertakluk kepada Penyelia Projek/ Panel Penilai yang membuat penilaian terhadap Kertas Cadangan berkenaan berdasarkan kriteria dan skop seperti yang dinyatakan. Pelajar perlu melaksanakan aktiviti projek/kajian yang telah dirancang dan menghasilkan Laporan Akhir Projek/Kajian (rujuk BAB 7: PENULISAN LAPORAN) berdasarkan Kertas Cadangan projek/kajian yang telah diluluskan. Pelaksanaan projek/kajian hendaklah mengikut takwim/jadual perancangan aktiviti pelaksanaan kursus Projek (jabatan/politeknik) dan Carta Gantt pelaksanaan projek/kajian pelajar masing-masing. Metodologi projek/kajian yang boleh diadaptasi oleh pelajar adalah seperti di Rajah 4.4 dibawah:



Rajah 4.4: Ringkasan Metodologi Yang Digunakan Untuk Pembangunan Kajian/Projek

Nota: Kajian Rintis dilaksanakan mengikut kesesuaian projek/kajian yang dijalankan.

Penyelia Projek harus menyelia dan membimbing pelajar dalam keseluruhan proses pelaksanaan projek/kajian bermula dari taklimat projek sehingga mendapat perakuan dalam penghasilan Laporan Akhir Projek/Kajian. Pelaksanaan Projek boleh dilaksanakan mengikut amalan hijau dokumen Blueprint POLYGreen JPPKK, KPT.

Segala perbelanjaan aktiviti projek/kajian adalah di bawah tanggungan pelajar sendiri, namun pelajar boleh berbincang dengan Penyelia Projek bagi mendapatkan peruntukan daripada politeknik sekiranya projek/kajian tersebut berkepentingan kepada politeknik. Pelajar juga digalakkan untuk bekerjasama dengan Penyelia Projek bagi mendapatkan geran penyelidikan daripada mana-mana kementerian serta organisasi yang menawarkan geran tersebut (sekiranya berkaitan).

Kebenaran menggunakan fasiliti politeknik perlu mendapat sokongan Penyelia Projek dan mendapat persetujuan pegawai yang bertanggungjawab. Pelajar perlu mendapatkan surat kebenaran menjalankan aktiviti luar politeknik daripada Penyelia Projek yang ditandatangani oleh Pengarah Politeknik.

4.1.9 Pemantauan dan Penilaian Aktiviti Projek/Kajian dan Semakan Hasil Projek/Kajian Serta Penulisan Laporan

Penyelia Projek membuat pemantauan, semakan dan penilaian Buku Log serta aktiviti projek/kajian yang dilaksanakan oleh setiap pelajar secara berkala dan ianya perlu direkodkan. Hasil projek haruslah disemak oleh Penyelia Projek sebelum sesi pembentangan dan penilaian oleh Panel Penilai. Kaedah pemantauan dan penilaian projek boleh dilaksanakan secara dalam talian atau bersemuka mengikut kesesuaian (rujuk LAMPIRAN L: PANDUAN PENGENDALIAN PEMANTAUAN DAN PENILAIAN PROJEK SECARA DALAM TALIAN).

4.1.10 Pembentangan/Penilaian Projek/Kajian Akhir dan Laporan Akhir

Pelajar perlu membentangkan hasil projek bagi tujuan penilaian oleh Panel Penilai mengikut rubrik pemarkahan yang telah ditetapkan. Sekiranya hasil projek gagal memenuhi kriteria yang ditetapkan maka pelajar perlu membuat perbincangan dengan Penyelia Projek dan seterusnya membuat pembetulan, menghantar semula Laporan Akhir Projek dan membuat pembentangan semula jika perlu.

4.1.11 Pembetulan/Pemurnian Laporan Akhir

Berdasarkan cadangan Panel Penilai, pelajar dikehendaki melakukan pembetulan yang sewajarnya dengan bimbingan Penyelia Projek serta menghantar semula Laporan Akhir Projek yang telah dimurnikan.

4.1.12 Penyerahan Hasil Projek dan Laporan Akhir

Pelajar dikehendaki menyerahkan:

(a) Laporan Akhir Projek berjilid yang telah disahkan oleh Penyelia Projek dan Penyelaras Kursus Projek dalam bentuk salinan digital (PDF); dan

(b) Borang Akuan Keaslian dan Hak Milik (rujuk LAMPIRAN I: AKUAN KEASLIAN DAN HAK MILIK) kepada Penyelia Projek/Penyelaras Kursus Projek untuk rekod simpanan.

Nota: Kaedah penyerahan dan bentuk laporan boleh diubah suai mengikut kesesuaian kursus Projek program pengajian masing-masing.

4.1.13 Penilaian dan Rekod Markah Laporan Akhir Projek

Penilaian Laporan Akhir Projek akan dinilai oleh Penyelia Projek setelah laporan berjilid diserahkan. Penyelia Projek/Penyelaras Kursus Projek merekodkan markah dan melengkapkan semua komponen penilaian kursus Projek berdasarkan kurikulum program pengajian ke dalam Sistem Pengurusan Maklumat Politeknik (SPMP) atau Sistem Pengurusan Maklumat iPUO yang diguna pakai di politeknik.

4.2 Penilaian Kursus Projek

Penilaian kursus Projek perlu dilakukan sepanjang semester. Pencapaian pelajar diukur berdasarkan hasil pembelajaran yang ditetapkan di dalam kurikulum kursus Projek program pengajian masing-masing. **Semua komponen penilaian (elemen pengurusan dan pelaksanaan projek, pembentangan dan laporan projek) yang merujuk kepada komponen penilaian *(Assessment Specification Table)* kursus Projek di dalam program pengajian masing-masing perlu dilaksanakan sepenuhnya oleh setiap pelajar dan dinilai secara individu.**

Pelajar juga perlu membuat pembetulan Laporan Akhir Projek sebagaimana dikehendaki oleh Penyelia Projek dan Panel Penilai (sekiranya ada). Penilaian berbentuk individu di dalam satu kumpulan, perlu dibuktikan melalui borang rubrik pemarkahan bagi setiap pelajar yang disediakan oleh Penyelaras Kursus Projek mengikut kesesuaian kursus Projek program pengajian masing-masing.

Penilaian dilaksanakan oleh Penyelia Projek dan Panel Penilai yang dilantik. Panel Penilai dari setiap jabatan atau institusi pengajian tinggi dan industri luar boleh dilantik untuk menilai pembentangan dan hasil projek/kajian pelajar. Pemilihan tempat dan masa yang sesuai akan ditentukan oleh Penyelaras Projek Pelajar Jabatan. Penilaian menggunakan Borang Pemarkahan Projek berserta rubrik penilaian yang berkaitan mengikut program pengajian. Antara perkara yang dinilai (merujuk kepada keperluan kurikulum program pengajian) adalah seperti berikut:

(a) Kertas Cadangan
(b) Hasil Projek
(c) Laporan Akhir Projek
(d) Pembentangan
(e) Buku Log
(f) Kehadiran
(g) Penglibatan

Semua bentuk penilaian adalah tertakluk kepada Arahan-arahan Peperiksaan dan Kaedah Penilaian (Diploma) Politeknik Malaysia (dikeluarkan oleh Bahagian Peperiksaan dan Penilaian (BPN), JPPKK) yang sedang berkuat kuasa. Cadangan rubrik adalah seperti contoh di LAMPIRAN F: CONTOH RUBRIK PENILAIAN:

(a) Rubric for Involvement Evaluation
(b) Rubric for Log book Format Evaluation
(c) Rubric for Presentation Evaluation
(d) Rubric for Final Report Evaluation
(e) Rubric for Model Evaluation
(f) Rubric for Innovation and Creativity Evaluation

Nota: Rubrik penilaian boleh diubah suai mengikut kesesuaian kursus Projek program pengajian melalui kaedah penilaian sama ada secara bersemuka atau dalam talian.

Panel Penilai boleh terdiri daripada pensyarah politeknik dan panel luar daripada industri/institusi pengajian yang dilantik oleh politeknik. Antara tugas Panel Penilai projek adalah:

(a) menilai pembentangan projek menggunakan borang pemarkahan atau rubrik mengikut program pengajian; dan
(b) memberi komen/maklum balas untuk penambahbaikan projek pelajar.

4.2.1 Pelajar boleh **DIGAGALKAN** kursus Projek sekiranya:

(a) tidak memenuhi sepenuhnya komponen penilaian kursus Projek merujuk kepada kurikulum program pengajian yang sedang berkuat kuasa;
(b) dibuktikan wujud unsur plagiat dalam pelaksanaan/penghasilan projek/kajian (idea, penulisan atau reka cipta orang lain); dan
(c) tidak memenuhi Arahan-arahan Peperiksaan dan Kaedah Penilaian (Diploma) Politeknik Malaysia (dikeluarkan oleh BPN, JPPKK) yang sedang berkuat kuasa serta arahan yang dikeluarkan oleh politeknik dari semasa ke semasa.

4.2.2 Dalam keadaan tertentu, pihak pengurusan politeknik boleh menggunakan budi bicara dalam melaksanakan arahan berhubung dengan perkara 4.2.1 di atas.

BAB 5: HARTA INTELEK PROJEK

Harta Intelek adalah hak eksklusif yang diberikan oleh undang-undang untuk tempoh masa tertentu kepada pencipta karya untuk mengawal penggunaan karya mereka. Perlindungan hak cipta di Malaysia adalah berasaskan kepada Akta Hak Cipta 1987. Oleh itu, Perbadanan Harta Intelek Malaysia (MyIPO) yang merupakan sebuah badan yang ditubuhkan oleh kerajaan telah dipertanggungjawabkan untuk menguruskan perlindungan pelbagai bentuk harta intelek seperti cap dagang (*trademark*), hak cipta (*copyright*), paten (*patent*) dan reka bentuk perindustrian (*industrial design*), petunjuk geografi (*geographical indication*) dan reka bentuk susun atur litar bersepadu (*IC layout designs*).

5.1 Peraturan dan Akta Harta Intelek

Peraturan dan Akta Harta Intelek termasuk sebarang hak milik yang termaktub seperti:

(a) paten dan perbaharuan utiliti seperti yang ditakrifkan dalam Akta Paten 1983;
(b) hak cipta dan perlindungan yang diberi berasaskan kepada Akta Hak Cipta 1987;
(c) cap dagangan dan perlindungannya yang diberi berasaskan kepada Akta Cap Dagangan 1976 dan di bawah undang-undang lazim bagi kelirupaan (*passing off*);
(d) reka bentuk perindustrian dan perlindungannya yang diberikan di bawah Akta Reka Bentuk Perindustrian 1996;
(e) perlindungan bagi maklumat sulit dan rahsia perniagaan/dagangan;
(f) petunjuk geografi yang diberi berasaskan kepada Akta Petunjuk Geografi 2000; dan
(g) reka bentuk susun atur litar bersepadu yang diberikan di dalam Akta Reka Bentuk Susun Atur Litar Bersepadu 2000.

5.2 Hak Harta Intelek

Harta intelek adalah semua jenis perkara yang dilindungi di bawah akta dan undang-undang yang dinyatakan di perkara 5.1. Ia terdiri daripada pemikiran manusia, seperti idea, reka cipta, reka bentuk, lakaran, lukisan, penulisan dan muzik. Takrifannya merangkumi program komputer, reka bentuk susun atur litar bersepadu dan pangkalan data.

Hak harta intelek adalah hak terkawal mengikut undang-undang khusus yang membolehkan pemilik harta intelek melaksanakan kawalan eksklusif ke atas pengeksploitasi hak-hak tersebut dengan tujuan untuk memperolehi keuntungan daripada aktiviti pengkomersialan.

5.3 Hak Cipta

(a) Akta Hak Cipta 1987 memberi perlindungan kepada pencipta karya untuk mengawal penggunaan karya yang dihasilkan. Berdasarkan pecahan kategori karya adalah seperti sastera, seni, muzik, filem, bunyi, siaran dan terbitan;

(b) Pelajar boleh mendaftarkan hak cipta sebagai perlindungan hak eksklusif bagi produk yang direka cipta;

(c) Pihak MyIPO mencadangkan bahawa perlindungan hasil kerja projek boleh dibahagikan kepada dua kategori iaitu (i) Sastera (melindungi manual dan penulisan mengenai produk pelajar) dan (ii) Seni (melindungi grafik yang terdapat pada produk yang dihasilkan). Walau bagaimanapun, ia mengikut kesesuaian hasil kerja yang dihasilkan; dan

(d) Tempoh perlindungan adalah selama-lamanya, tidak perlu diperbaharui, tetapi boleh luput selepas 50 tahun kematian pemiliknya.

5.4 Keaslian Projek

Sesuatu projek dikategorikan sebagai asli apabila projek tersebut dihasilkan atau dibangunkan sendiri oleh pelajar secara individu atau berkumpulan tanpa unsur plagiat. Menurut Dewan Bahasa dan Pustaka (Kamus Pelajar Edisi Kedua), plagiat adalah hasil mencedok karya atau tulisan orang lain yang disiarkan kembali sebagai karya sendiri (biasanya dalam hal karang-mengarang). Dalam konteks ini, plagiat merujuk kepada perbuatan mengguna atau meniru hasil kerja/karya orang lain tanpa kebenaran dan secara sedar mengakui hasil kerja/karya tersebut sebagai hasil kerja/karya sendiri tanpa memberikan kredit/pengiktirafan kepada pengkarya asal. Tindakan memberi kredit atau mengiktiraf pengkarya asal boleh dizahirkan dengan memetik (*quote*) atau menyatakan (*cite*) sumber yang dirujuk.

Berdasarkan Arahan-Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Politeknik Malaysia yang sedang berkuat kuasa (dikeluarkan oleh BPN, JPPKK), plagiat merupakan bentuk penyelewengan akademik dan sabit kesalahan, boleh dikenakan tindakan. Justeru, penilaian keaslian projek pelajar perlu melibatkan proses penapisan bagi memastikan ianya bebas daripada unsur plagiat.

5.5 Carian Paten

Carian paten (*prior art search*) adalah bentuk semakan yang dilakukan terhadap reka cipta terdahulu bagi memastikan elemen terbaru (*novelty*) sesuatu reka cipta di samping mengelakkan pelanggaran hak harta intelek (*infringement*) atau peniruan reka cipta.

Bagi melakukan proses carian paten, cara mudah adalah dengan menggunakan kata kunci (*keywords*) menerusi sumber seperti berikut:

(i). *Google Patent* menerusi pautan https://patents.google.com
(ii). European Patent Office (www.espacenet.com)
(iii). Patent Lens Home (www.patentlens.com)
(iv). WIPO - Search International and National Patent Collections (www.wipo.int/pctdb)

(v). Korean Intellectual Property Office (KIPO) (www.kipo.go.kr/en)

(vi). Laman sesawang rasmi Jabatan Cap Dagang dan Paten Amerika Syarikat *(US Patent and Trademark Office)* http://www.uspto.gov/patent.

Maklumat yang lebih terperinci mengenai harta intelek termasuk paten boleh dilayari laman sesawang Perbadanan Harta Intelek Malaysia (MyIPO), melalui pautan http://www.myipo.gov.my.

5.6 Pendaftaran Harta Intelek Bagi Projek

Pusat Penyelidikan dan Inovasi (PPI), JPPKK menetapkan bahawa pendaftar harta intelek bagi projek pelajar didaftarkan sebagai hak cipta. Namun, dalam kes-kes tertentu Penyelaras Projek Pelajar Politeknik/Jabatan dan KUPIK boleh mencadangkan sekiranya terdapat projek pelajar yang mempunyai impak dan berpotensi tinggi untuk didaftarkan.

5.7 Pemilikan Hak Harta Intelek

Harta intelek akan difailkan atau didaftarkan atas nama politeknik. Politeknik bertanggungjawab untuk mengambil segala tindakan yang perlu dalam menguatkuasakan hak harta intelek sekiranya berlaku eksploitasi dan sebarang pelanggaran hak harta intelek.

5.7.1 Hak milik projek boleh dibahagikan kepada **TIGA (3)** kategori:

(a) Semua hasil projek pelajar adalah **hak milik politeknik** sekiranya:

(i). projek itu dibangun atau direka cipta atas keperluan program pengajian politeknik; dan

(ii). projek dijanakan, direka cipta, dibangunkan atau dihasilkan dengan menggunakan kemudahan, bahan, dana atau sumber lain milik politeknik; atau

(iii). projek tersebut direka cipta dengan sokongan dan di bawah seliaan Penyelia Projek Politeknik.

(b) Semua hasil projek pelajar menerusi kolaborasi dengan pihak industri menjadi **hak milik bersama politeknik dan industri** mengikut terma kolaborasi yang telah dipersetujui di antara politeknik dan industri.

(c) Semua hasil projek pelajar juga menjadi **hak milik politeknik** mengikut terma kolaborasi yang telah dipersetujui di antara politeknik dan industri.

5.8 Pengagihan Insentif Kepada Pencipta dan Institusi

Pengagihan insentif/royalti atas kemenangan pertandingan yang diterima adalah seperti berikut:

Pengagihan Insentif	Pencipta	Institusi
RM250,000.00 yang pertama	80%	20%
RM250,000.00 ke RM1,000,000.00	70%	30%
RM1,000,000.01 ke RM2,000,000.00	60%	40%
RM2,000,000.00 ke atas	50%	50%

Contoh:

Berdasarkan kepada polisi pengkomersialan Kementerian Sains, Teknologi dan Inovasi (MOSTI) dan Polisi Pengkomersialan JPPKK menyatakan pengagihan insentif yang diperoleh hasil daripada nilai wang kemenangan berjumlah RM5,000.00 mengikut formula 80:20 iaitu 80% daripada jumlah kemenangan diberikan kepada pereka cipta/rakan pasukan, manakala baki 20% diagihkan kepada pemilik produk tersebut iaitu politeknik.

5.9 Inventori Projek

Penyelia Projek bertanggungjawab menyemak keaslian projek/kajian yang dihasilkan. Penyelaras Kursus Projek perlu sentiasa mengemaskini **inventori projek pelajar** supaya tiada projek/kajian yang berulang atau bertindih dengan projek/kajian yang dibangunkan sebelum ini. Pelajar perlu menyerahkan Borang Inventori Projek dalam bentuk salinan keras (*hard copy)* dan salinan lembut (*soft copy)* kepada Penyelia

Projek bersekali dengan laporan dan hasil projek (rujuk LAMPIRAN J: BORANG INVENTORI PROJEK PELAJAR). Inventori projek pelajar perlu disimpan di peringkat program dan politeknik bagi tujuan penyelarasan dan semakan akreditasi program pengajian.

Antara maklumat yang diperlukan dalam inventori projek pelajar adalah seperti berikut (rujuk LAMPIRAN J: BORANG INVENTORI PROJEK PELAJAR):

(a) Nama Projek
(b) Ahli Kumpulan
(c) Kategori Kluster Penyelidikan (rujuk BAB 1: PENGENALAN)
(d) Penyelia
(e) Abstrak Projek
(f) Pendaftaran Harta Intelek selain Hak Cipta (produk yang berpotensi dan berimpak tinggi)

5.10 Penyertaan Dalam Pertandingan/Simposium/Kolokium/Seminar

Pelajar digalakkan untuk menyertai pertandingan atau pembentangan hasil/inovasi projek di seminar/kolokium di mana-mana peringkat. Penglibatan pelajar dalam pertandingan inovasi dan kemahiran seperti *International Invention & Innovation Exhibition (ITEX*), *Malaysia Technology Expo* (*MTE), Innovation and Invention Competition through Exhibition (iCompEx), International Engineering Invention & Innovation Exhibition (i-Envex)* dan lain-lain pertandingan berprestij dapat meningkatkan kemahiran serta menggalakkan daya kreativiti dan inovasi dalam kalangan pelajar. Sebarang penyertaan projek dalam mana-mana pertandingan disarankan agar merujuk kepada KUPIK politeknik masing-masing bagi tujuan penyelarasan dan semakan bahan pertandingan seperti poster dan sebagainya (LAMPIRAN K: TEMPLAT POSTER PERTANDINGAN INOVASI PROJEK PELAJAR) supaya menepati standard yang ditetapkan.

Selain itu, pertandingan sebegini dapat menggalakkan pelajar menceburkan diri dalam bidang penyelidikan dan seterusnya mewujudkan kolaborasi antara politeknik dengan

agensi luar seperti badan-badan bukan kerajaan, institusi pengajian tinggi, persatuan usahawan dan orang persendirian di dalam dan di luar negara. Justeru, usaha sebegini diharap dapat melahirkan kumpulan tenaga kerja TVET yang berkemahiran ke arah memacu industri negara setanding dan setaraf dengan pencapaian di negara maju.

5.11 Pengkomersialan

Pengkomersialan adalah sesuatu produk atau perkhidmatan inovasi yang didaftarkan melalui harta intelek di bawah politeknik dan mempunyai potensi menjanakan pendapatan secara berterusan melalui satu platform kewangan yang diiktiraf.

Projek akhir pelajar yang berjaya atau diiktiraf atau disenaraikan berpotensi untuk dikomersialkan melalui pelbagai platform pertandingan atau pameran boleh dipertimbangkan bagi tujuan pengkomersialan mengikut pekeliling yang berkuat kuasa. Bagi kesinambungan projek pelajar ini, Penyelia Projek pelajar boleh merujuk kepada KUPIK di politeknik dan JPPKK untuk tindakan susulan.

BAB 6: BUKU LOG

6.1 Pengenalan

Buku Log projek disediakan oleh pelajar secara individu untuk mencatat setiap aktiviti kerja, penemuan baru dan tugasan yang dijalankan sepanjang tempoh pelaksanaan projek. Buku ini juga merupakan salah satu kaedah untuk Penyelia Projek memantau perkembangan dan kemajuan projek/kajian pada setiap kali pertemuan dan perbincangan bersama pelajar. Contoh format lengkap Buku Log seperti di LAMPIRAN G: BUKU LOG.

Setiap pelajar perlu melengkapkan Buku Log yang ditulis dengan jelas dan terperinci bagi tujuan penilaian oleh Penyelia Projek. Antara perkara yang dinilai dalam Buku Log adalah:

(a) pencapaian pelajar berdasarkan Carta Gantt;
(b) prestasi pelaksanaan projek/kajian; dan
(c) perkembangan intelek dan sahsiah pelajar

6.2 Panduan Penggunaan Buku Log

Berikut merupakan panduan penggunaan Buku Log:

(1). pelajar perlu mencatat semua aktiviti berkaitan projek/kajian yang dijalankan mengikut keperluan program pengajian;
(2). Buku Log perlu dibawa bersama setiap kali mengadakan pertemuan dan perbincangan bersama Penyelia Projek untuk tujuan semakan dan pengesahan;
(3). Buku Log perlu diserahkan kepada Penyelia Projek untuk disemak dan disahkan sekurang-kurangnya sekali setiap minggu;
(4). Penyelia Projek perlu memberi maklum balas/komen di dalam Buku Log pelajar setiap minggu; dan
(5). Buku Log perlu diserahkan kepada Penyelia Projek untuk penilaian.

6.3 Penulisan Buku Log

Berikut disenaraikan keperluan penulisan Buku Log bagi aktiviti pelaksanaan projek pelajar:

(a) pelajar perlu mencatat aktiviti dan tugasan sepanjang minggu;
(b) pelajar perlu memperincikan segala perancangan di ruangan Laporan Aktiviti Mingguan agar selari dengan perancangan yang telah dinyatakan di dalam Carta Gantt;
(c) pelajar perlu menyatakan pencapaian sebenar atau status projek terkini pada ruangan yang disediakan;
(d) pada bahagian Cadangan Tugasan perlu diisi oleh pelajar dengan menyatakan cadangan yang berkaitan sebagai langkah penambahbaikan kepada projek/kajian; dan
(e) Penyelia Projek perlu memberi maklum balas/komen pada setiap tugasan yang telah dijalankan oleh pelajar.

6.4 Format Kandungan Buku Log

Berikut merupakan format kandungan Buku Log:

(a) Borang Pendaftaran Projek **(LAMPIRAN A: BORANG PENDAFTARAN PROJEK)**
(b) Muka Hadapan Buku Log **(LAMPIRAN G: BUKU LOG)**
(c) Isi Kandungan Buku Log **(LAMPIRAN G: BUKU LOG)**
(d) Laporan Aktiviti Mingguan **(LAMPIRAN G-1 dan LAMPIRAN G-2)**
(e) Carta Gantt Projek Pelajar **(LAMPIRAN B: CARTA GANTT PROJEK PELAJAR)**

Nota: Format kandungan Buku Log boleh diubah suai mengikut kesesuaian kursus Projek program pengajian masing-masing.

BAB 7: PENULISAN LAPORAN

Pelaksanaan projek melibatkan penulisan Kertas Cadangan dan Laporan Akhir Projek. Perkara yang digariskan ini tertakluk kepada keperluan serta kesesuaian dengan merujuk kepada kurikulum program pengajian yang sedang berkuat kuasa di politeknik.

7.1 Kertas Cadangan

Kertas Cadangan projek/kajian adalah dokumen awal yang memperincikan projek/kajian yang hendak dilaksanakan. Ia merupakan pelan keseluruhan yang menerangkan latar belakang kajian, strategi yang digunakan untuk mendapatkan jawapan kepada permasalahan kajian, persoalan kajian dan kepentingan kajian. Kertas Cadangan perlu mengandungi perkara-perkara berikut:

7.1.1 Projek Jenis Kajian

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Kajian
- 1.3 Pernyataan Masalah
- 1.4 Objektif Kajian
- 1.5 Persoalan Kajian
- 1.6 Skop Kajian
- 1.7 Kepentingan Kajian
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Jangkaan Dapatan/Keputusan Kajian
- 1.10 Rumusan

BAB 2: KAJIAN LITERATUR
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka bentuk Kajian
  - 3.2.1 Pensampelan
  - 3.2.2 Kaedah Pengumpulan Data
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Anggaran Kos Kajian

7.1.2 Projek Jenis Nyata

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Projek
- 1.3 Pernyataan Masalah
- 1.4 Objektif Projek
- 1.5 Persoalan Projek
- 1.6 Skop Projek
- 1.7 Kepentingan Projek
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Jangkaan Dapatan/Keputusan Projek
- 1.10 Rumusan

BAB 2: KAJIAN LAPANGAN
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu/Ulasan/Siasatan
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka Bentuk Projek
  - 3.2.1 Kaedah/Prosedur/Teknik Penghasilan Projek
  - 3.2.2 Bahan dan Peralatan
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Anggaran Kos Projek
- iii. Spesifikasi dan Senarai Bahan dan Peralatan *(jika berkaitan)*
- iv. Lakaran/Lukisan/Gambarajah Litar/Carta Alir dsbg. *(jika berkaitan)*

***Nota**:* Kertas Cadangan tidak melebihi **TIGA PULUH (30)** muka surat.

7.2 Laporan Akhir Projek

Laporan Akhir Projek merupakan nukilan asli yang perlu dihasilkan oleh pelajar. Ia merupakan penulisan yang perlu disediakan dengan lengkap dan terperinci melibatkan keseluruhan pembangunan/penghasilan projek/kajian.

7.2.1 Susunan dan Kandungan Penulisan Laporan Akhir

Susunan dan kandungan laporan yang dicadangkan dalam penghasilan Laporan Akhir Projek merangkumi **DUA (2)** bahagian iaitu:

(a) Bahagian Awal (rujuk LAMPIRAN H: FORMAT UMUM LAPORAN AKHIR)

(i). Muka Hadapan
(ii). Tajuk
(iii). Perakuan Keaslian
(iv). Penghargaan
(v). Abstrak
(vi). Senarai Kandungan
(vii). Senarai Jadual
(viii). Senarai Rajah
(ix). Senarai Simbol
(x). Senarai Singkatan

(b) Bahagian Utama

Bab 1-3 perlu merujuk kepada huraian dalam Kertas Cadangan seperti di perkara 7.1. Namun, huraian tersebut perlu ditulis dalam bentuk ayat yang telah dilaksanakan (ayat pasif) di dalam penulisan Laporan Akhir Projek. Keterangan terperinci mengenai susunan dan kandungan laporan yang dicadangkan dalam menghasilkan Laporan Akhir Projek adalah seperti di perkara 7.2.2. Berikut adalah susunan dan kandungan Laporan Akhir Projek yang dicadangkan mengikut jenis projek yang dilaksanakan oleh pelajar:

(i). Projek Jenis Kajian

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Kajian
- 1.3 Pernyataan Masalah
- 1.4 Objektif Kajian
- 1.5 Persoalan Kajian
- 1.6 Skop Kajian
- 1.7 Kepentingan Kajian
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Rumusan

BAB 2: KAJIAN LITERATUR
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka bentuk Kajian
  - 3.2.1 Pensampelan
  - 3.2.2 Kaedah Pengumpulan Data
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

BAB 4: DAPATAN KAJIAN DAN PERBINCANGAN
- 4.1 Pendahuluan
- 4.2 Dapatan Kajian
- 4.3 Perbincangan
- 4.4 Rumusan

BAB 5: KESIMPULAN DAN CADANGAN
- 5.1 Pendahuluan
- 5.2 Kesimpulan
- 5.3 Cadangan
- 5.4 Limitasi Kajian
- 5.5 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Kos Kajian

(ii). Projek Jenis Nyata

BAB 1: PENGENALAN
- 1.1 Pendahuluan
- 1.2 Latar Belakang Projek
- 1.3 Pernyataan Masalah
- 1.4 Objektif Projek
- 1.5 Persoalan Projek
- 1.6 Skop Projek
- 1.7 Kepentingan Projek
- 1.8 Takrifan Istilah/Definisi Operasi
- 1.9 Rumusan

BAB 2: KAJIAN LAPANGAN
- 2.1 Pendahuluan
- 2.2 Kajian Terdahulu/Ulasan/Siasatan
- 2.3 Rumusan

BAB 3: METODOLOGI/REKA BENTUK
- 3.1 Pendahuluan
- 3.2 Reka Bentuk Projek
  - 3.2.1 Kaedah/Prosedur/Teknik Penghasilan Projek
  - 3.2.2 Bahan dan Peralatan
  - 3.2.3 Kaedah Analisis Data
- 3.3 Rumusan

BAB 4: DAPATAN KAJIAN DAN PERBINCANGAN
- 4.1 Pendahuluan
- 4.2 Dapatan Kajian/Pengujian
- 4.3 Perbincangan
- 4.4 Rumusan

BAB 5: KESIMPULAN DAN CADANGAN
- 5.1 Pendahuluan
- 5.2 Kesimpulan
- 5.3 Cadangan
- 5.4 Limitasi Projek
- 5.5 Rumusan

Rujukan

Lampiran
- i. Carta Gantt
- ii. Kos Projek
- iii. Spesifikasi, Senarai Bahan dan Peralatan *(jika berkaitan)*
- iv. Lakaran/Lukisan/Gambar Rajah Litar/Carta Alir dan sebagainya *(jika berkaitan)*

***Nota**:* Laporan Akhir Projek tidak kurang daripada **LIMA PULUH (50)** muka surat

7.2.2 Keterangan Susunan dan Kandungan Penulisan Laporan

Penerangan mengenai kandungan Kertas Cadangan dan Laporan Akhir Projek adalah seperti di bawah:

ABSTRAK

Abstrak adalah satu pernyataan ringkas yang lengkap merangkumi keseluruhan kandungan Laporan Projek Akhir. Panjangnya hendaklah **tidak melebihi 250 perkataan** (dalam satu halaman muka surat sahaja). Abstrak perlu disediakan dalam dua bahasa iaitu Bahasa Malaysia dan diikuti Bahasa Inggeris pada halaman muka surat yang berasingan. Antara kandungan penting dalam abstrak adalah:

(a) apa dan kenapa projek/kajian dilakukan?;
(b) pernyataan masalah: apa masalah yang cuba hendak diselesaikan?
(c) pendekatan/kaedah digunakan untuk menyelesaikan masalah: simulasi, analisis model, menghasilkan prototaip, kumpul dan analisis data, produk;
(d) dapatan dan keputusan: dinyatakan dalam bentuk teks yang menyatakan sesuatu yang lebih baik dari sedia ada;
(e) kesimpulan: implikasi dapatan dan keputusan, perubahan yang telah dibuat dan sebagainya; dan
(f) cadangan: cadangan pendekatan atau penambahbaikan yang boleh di buat untuk kajian selanjutnya dalam isu yang sama.

BAB 1: PENGENALAN

Pengenalan merujuk kepada satu rumusan cadangan projek/kajian yang akan dijalankan. Bab ini merangkumi pendahuluan, latar belakang projek/kajian, pernyataan masalah, tujuan dan objektif projek/kajian, persoalan projek/kajian, skop projek/kajian, kepentingan projek/kajian dan definisi terminologi projek/kajian. Oleh itu, kandungan penulisan bab yang disyorkan adalah seperti berikut:

1.1 Pendahuluan

Tujuan pendahuluan adalah untuk memberikan satu gambaran menyeluruh tentang kajian yang akan dijalankan. Pendahuluan mengetengahkan isu-isu utama yang berkaitan dengan fokus projek/kajian. Isu-isu ini lazimnya dihuraikan secara ringkas dalam beberapa perenggan dan disokong dengan dapatan projek/kajian terdahulu.

Contoh 1.1 (TEKNIKAL):

The depletion of world petroleum reserves and the increased environmental concerns have stimulated the search for alternative sources for petroleum-based fuel, including diesel fuels. Because of the closer properties, biodiesel fuel (fatty acid methyl ester) from vegetable oil is considered as the best candidate for diesel fuel substitute in diesel engines…

Adaptasi petikan dari Kusdiana & Saka (2001)

***Contoh 1.1 (SAINS SOSIAL)*:**

Selepas pertengahan tahun 1990-an, pelancongan penyelaman skuba adalah antara pelancongan alternatif yang semakin pesat membangun dan popular di peringkat antarabangsa. Setiap tahun, sejumlah besar pertukaran mata wang asing berlaku terutamanya di negara-negara pesisir pantai yang mempunyai potensi persekitaran yang kaya dengan sumber marin terutamanya landskap semula jadi, pelbagai spesies haiwan dan tumbuh-tumbuhan akuatik, gua atau gunung berapi di bawah air, dan lain-lain (Hall, 2005; Alban et al., 2008; Peters dan Hawkins, 2009). Pendapatan sesetengah negara (contohnya, Greece) amat bergantung kepada industri penyelaman skuba. Kepentingan aktiviti penyelaman skuba dalam industri pelancongan dapat dilihat dalam Jadual 1…

Adaptasi petikan dari Mapjabil, Yusoh & Zainol (2012)

1.2 Latar Belakang Projek/Kajian

Latar belakang projek/kajian merujuk kepada maklumat terkini yang berkaitan isu-isu semasa yang menjadi fokus kajian. Tujuannya adalah untuk memberitahu pembaca tentang status semasa dalam industri berhubung isu-isu semasa tersebut. Lazimnya latar belakang akan disokong dengan rujukan (misalnya buku, artikel jurnal, laporan, surat khabar atau dasar kerajaan). Antara perkara yang boleh dikemukakan adalah seperti berikut:

(a) apakah situasi semasa dalam industri?; dan

(b) kenapa kajian ini perlu dijalankan? (Rasional projek/kajian)

Contoh 1.2 (TEKNIKAL):

The bricks technology today has been developing in many ways to search other waste materials as sand replacement or as an additive material. This is because the sand has become a big issue in Malaysia where many struggle occurred and the theft of sand in the sand area that is not supposed to. A lot of sandy areas have been destroyed and the quality sand supply is decreasing day by day. Nowadays, issue on environment preservation and the sustainability of the development are very crucial. This is because effect of global warming and the amount of the non-renewable sources is extremely diminished. As related to sustainability issues, a search of alternative sand is become a challenge to the construction nowadays. One of the materials that may be potentially used as an alternative material to natural sand is Bottom Ash. Bottom ash consists of coal components which did not combust during burning phase.

Adaptasi petikan dari Syakir & Naganathan (2013)

***Contoh 1.2 (SAINS SOSIAL)*:**

This chapter looks into the importance of the Malaysian construction industry towards the economy growth and contribution to the country. Along the way the main issue or problem of abandoned projects and the needed effort on proceeding with the restoration of abandoned projects in Malaysian and its consequences are discussed here. This issue is also shown to be endured in other countries as well apart from Malaysia. Therefore, the purpose of conducting this research based on the background of the problem and narrowing down the research scope, and coming towards identifying the research aim and objectives are discussed by the author in this chapter as well.

Malaysia is a dynamic country which is constantly evolving as stated in an article from The German Chamber Network, (2012). In the year 2011, New Straits Times has reported that the Malaysia's Economic Performance ranking improved to 7th place out of 59 economies compared with the 12th position in 2007. The Malaysian construction industry is generally separated into two areas. One area is general construction, which comprises residential construction, non-residential construction and civil engineering construction. The second area is special trade works, which comprises activities of metal works, electrical works, plumbing, sewerage and sanitary works, refrigeration and air conditioning works, painting works, carpentry, tiling and flooring works and glass works (Malaysian Institute of Economic Research, 2011). The Department of Statistics, Malaysia, (2010) has described the Malaysian construction industry as a substantial economic driver for Malaysia.

Adaptasi petikan dari Kamal, Haron, Ulang & Baharum (2012)

1.3 Pernyataan Masalah

Pernyataan masalah merujuk kepada sesuatu isu/masalah yang memerlukan penyelesaian berpandukan pendahuluan kajian. Ia menghuraikan masalah yang ingin diatasi serta sumbangan dapatan projek/kajian untuk menyelesaikan masalah tersebut sama ada secara menyeluruh atau sebahagiannya.

Pernyataan masalah mesti mempunyai hubung kait yang jelas dengan latar belakang projek/kajian dengan mengambil kira perkara berikut:

(a) faktor/sebab masalah itu berlaku;

(b) kesan/impak kepada negara/masyarakat/ekonomi/alam sekitar; dan

(c) rujukan permasalahan seperti:

- Kaedah Tinjauan Awal (*Preliminary Research*)
- Artikel/Jurnal/Laporan/Kajian Lepas

Contoh 1.3 (TEKNIKAL):

Sand is a major material used in a production of sand cement brick. Nowadays, the sand had become an issue and a big problem in Malaysia as more and more intruders began to invade the sand without permission and stole all the sand. The global consumption of natural sand was very high due to the extensive use of concrete. In this situation, Malaysia as a developing country is facing a shortage in the supply of natural sand (Safiuddin et al., 2007). Cement brick production used a lot of sand. Samad (2010) reported that for the production of cement brick, 4 part of sand is required. Due to high demand of sand, it is a must to find an alternative material to reduce a demand of natural sand. Due to this problem, this is a challenge for the engineers to think and find solutions to reduce the use of sand.

Adaptasi petikan dari Khalid, Herman, Azmi & Irwan (2017)

Contoh 1.3 (SAINS SOSIAL):

The problem of abandoned projects in the construction industry is a global phenomenon and the construction industry in Malaysia is no exception. The abandonment of construction projects has resulted in many adverse consequences to the country's economy, society, buyers, banks and environment where this issue or problem has to be solved. Economically, it is a waste of useful resources and the enhancement on the quality of life for the people is also affected. Low and Tan (1994) stated that quality development unit (QDU) in Singapore has adopted ISO 8402, in which the quality here refers to the characteristics of the project or service that is able to provide the satisfaction for the stated or implied needs. Olusegun and Michael, (2011), has stated that the construction industry plays a very dominant role in the economy of any nation. A healthy economy usually experience an increase in construction activities, but in a depressed economy, the incidence of project abandonment tends to be more prevalent.

The impact of abandoned project has affected the society and environment negatively as well. Past researchers Bavani and Stuart, (2009) has reported in their study that abandoned project has caused the existence of pools of stagnant water which has become the breeding ground for mosquitos endangering the health of the public and environment. As for the environment it has become a sore eyes as the surrounding of the abandoned project is subjected as a place to dump rubbish and overgrown of grasses. The impact of this issue of abandoned project on buyers are best described as sad. Not only the properties that they have invested a certain amount of money is now incomplete but yet they have to proceed with the monthly loan payment to the bank. The main impact faced by banks due to this issue is the overwhelming debts, (Kong, 2009). These impacts that are briefly touched here shows on the importance and ***necessity*** *of going ahead with project restoration.*

Adaptasi petikan dari Doraisamy (2017)

1.4 Objektif Projek/Kajian

Objektif kajian perlu dikaitkan dengan pernyataan masalah dan dinyatakan dengan jelas bagaimana masalah tersebut dapat diatasi. Bilangan objektif kajian yang dicadangkan adalah antara dua (2) hingga tiga (3) objektif. Kriteria *SMART* (spesifik, boleh diukur, boleh dicapai, realistik dan mengambil kira kekangan masa) adalah disarankan sebagai panduan bagi penulisan objektif projek/kajian.

Contoh 1.4 (TEKNIKAL):

The objectives of this study are:

(i). *to determine the strength, density and elasticity of cement bottom ash bricks;*
(ii). *to compare the strength, density and elasticity of cement bottom ash bricks to cement sand bricks; and*
(iii). *to identify the potential bottom ash as a replacement materials of sand production in cement bricks.*

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.4 (SAINS SOSIAL):

The aim of this research is to develop an effective model as a guide towards project restoration. This model could be used to mitigate the issue of abandoned residential construction projects in Malaysia, hoping this could lead towards achieving zero abandonment of residential projects in the country in the coming future. Therefore, there are some objectives that has been identified which will lead to the achievement of this aim:

(i). *to identify the significant factors for abandoned project restoration;*
(ii). *to identify the significant factors for the discontinuation on proceeding with the restoration of an abandoned project or non-revival of an abandoned project; and*
(iii). *to develop, validate and test the Abandoned Project Restoration Model (APRM).*

Adaptasi petikan dari Doraisamy (2017)

1.5 Persoalan Projek/Kajian *(Jika Berkaitan)*

Persoalan kajian pada asasnya merupakan soalan khusus yang ingin dijawab oleh penyelidik berpandukan objektif kajian. Ia perlu ditulis dalam bentuk soalan. Sekiranya persoalan kajian melibatkan pengujian hipotesis (misalnya membuat perbandingan, menentukan kewujudan perhubungan, membuat ramalan dan sebagainya), hipotesis tersebut perlu dinyatakan.

Contoh 1.5 (TEKNIKAL):

This study will answer the following research questions:

(a) Which protocol implementation is susceptible to manipulation attacks?
(b) What sequence of messages computed can be used to mount the attack?

Berdasarkan petikan dari Kothari et. al (2011)

Contoh 1.5 (SAINS SOSIAL):

In order to achieve the research objectives, three research questions are raised to help the researcher in achieving the research objectives. The research questions are as follows:

Question 1: What are the factors in proceeding with the revival of abandoned projects in Malaysia?

Question 2: Is there measures given leading to project revival, if so how far has it been effective/helpful?

Question 3: If there are measures leading to project revival are lacking and not effective, what are the reasons behind it?

Adaptasi petikan dari Doraisamy (2017)

1.6 Skop Kajian

Skop kajian menjelaskan had pelaksanaan kajian/projek yang dijalankan. Penjelasan ini penting bagi memastikan penilai dapat memahami sempadan kajian berkenaan. Pelajar perlu menjelaskan batasan atau limitasi dalam kajian seperti sampel, kajian, tempoh kajian, limitasi tempat, skop, metodologi kajian dan sebagainya.

Contoh 1.6 (TEKNIKAL):

This study focuses on the engineering properties of the cement bottom ash bricks (focus). The materials used in the cement bottom ash bricks are sand, cement and water (material). There were two types of fine aggregate that had been used in bricks manufactured which are river sand that taken from the river and bottom ash that had been taken from the Sultan Abdul Aziz Shah Power Station, Kapar (location). Ordinary Portland Cement (OPC) had been used as a binder in cement sand bricks (types/manufactured brand). The specimens size of the bricks is 225 x 100 x 70 mm and had been tested for engineering properties which are compressive strength, density and elasticity (testing).

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.6 (SAINS SOSIAL):

The problem of abandoned projects in the construction industry is a global phenomenon and the construction industry in Malaysia is no exception. This research focuses the issue of abandoned projects on residential construction projects. The abandoned residential projects that exist in Peninsular Malaysia is the main focus. This research is carried out using the mix method approach which are the qualitative and the quantitative methods. The population that is targeted in for the purpose of this research are the construction players surrounding Peninsular Malaysia. The data obtained from the research conducted is further analysed using the SPSS software and also with a software known as Analysis Moment of Structure (AMOS) which comes under its' main system called Structural Equation Modelling (SEM).

Adaptasi petikan dari Doraisamy (2017)

1.7 Kepentingan Projek/Kajian

Kepentingan projek/kajian juga disebut sebagai signifikan kajian yang menghuraikan secara ringkas kepentingan atau nilai dan sumbangan/implikasi projek/kajian yang dijalankan.

Contoh 1.7 (TEKNIKAL):

The research finding will contribute towards the application of bottom ash as replacement for sand hence improves the properties of sand cement bricks. This research involving the study of strength and elasticity of the sand cements bricks with bottom ash replacement when load is applied on it. In other hand, it produced a better strength with the characteristics of sand cement bricks. Since the method that produces real life response, it is greatly time consuming and the reused of by product materials from the power station can reduce the disposal cost and can be quite costly.

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.7 (SAINS SOSIAL):

Construction is a vital sector contributing significantly to the economics of all countries (Najmi, 2011). The construction industry must be dynamic to be able to respond to the changes that the world is constantly facing, as well as the social, economic, and technological challenges affecting all industries. The opportunities and problems in construction are different from those of the last century. The demands of clients, companies and employees differ from time to time, and thus the vision of the construction industry is always developing; to keep up, management must change too (Malaysian Institute of Economic Research, 2011).

Therefore, through this research we are able to test and measure completely the hypothesis and concepts, and also allows for a more comprehensive view of the problem on abandoned projects in this country to be obtained and also to single out as well the factors contributing to this. This research ascertains the causes in continuing and discontinuing a project that has already been abandoned.

Adaptasi petikan dari Doraisamy (2017)

1.8 Takrifan Istilah/Definisi Operasi

Takrifan Istilah/Definisi Operasi ini melibatkan istilah-istilah penting dalam projek/kajian. Ia perlu dijelaskan definisinya agar pembaca dapat memahami dengan lebih jelas projek/kajian yang dijalankan.

1.9 Jangkaan Dapatan Projek/Kajian (Kertas Cadangan)

Penerangan mengenai dapatan atau keputusan projek/kajian yang dijangka akan diperoleh perlu dinyatakan di dalam Kertas Cadangan projek/kajian.

Contoh 1.9 (TEKNIKAL):

At the end of this study it is expected to produce a potential bottom ash as a replacement materials of sand production in bricks, with equal strength, density and elasticity as conventional bricks.

Adaptasi petikan dari Anuar Wahab (2017)

Contoh 1.9: (SAINS SOSIAL):

At the end of this research it is expected that the most significant factors leading towards the restoration of abandoned projects will be identified to allow further development of the Abandoned Projects Restoration Model (APRM).

Adaptasi petikan dari Doraisamy (2017)

1.10 Rumusan Bab

Rumusan bab merumuskan subtajuk utama yang telah dikemukakan dalam Bab 1 tanpa memperkenalkan bahan baharu dan seterusnya menunjukkan kesinambungan ke bab berikutnya.

BAB 2: KAJIAN LITERATUR/LAPANGAN

Bab 2 menerangkan pendahuluan ringkas kepada tajuk projek/kajian, konsep atau teori yang berkaitan, kajian terdahulu yang ada kaitan dengan bidang projek/kajian dan diakhiri dengan rumusan bab secara ringkas. Kajian literatur merupakan ulasan maklumat yang diperolehi daripada jurnal, buku, prosiding dan kajian lepas untuk sesuatu kajian terbaharu. Ia merupakan satu proses sistematik yang memerlukan penelitian dan kemahiran mencari, mengumpul, membaca serta merumus maklumat dengan terperinci kerana ia dapat memberikan idea dan hala tuju mengenai permasalahan yang sedang dikaji.

Dalam proses membuat kajian literatur, seseorang penyelidik akan mengenal pasti dapatan-dapatan penyelidik lain dalam bidang yang akan dikaji. Rujukan yang digunakan mestilah berkaitan dengan fokus projek/kajian. Jumlah bahan rujukan yang diperlukan adalah sekurang-kurangnya **LIMA (5)** rujukan ilmiah yang diterbitkan dalam jangka masa 5 tahun terdahulu. Elemen utama yang perlu diambil perhatian di dalam membuat analisis rujukan adalah:

(a) mencari kesamaan *(compare);*
(b) mencari ketidaksamaan *(contrast);*
(c) memberi pandangan *(criticsize);*
(d) membandingkan *(synthesize);* dan
(e) meringkaskan *(summarize)*

Oleh itu, kandungan penulisan bab yang disyorkan adalah seperti berikut:

2.1 Pendahuluan Bab

Tajuk umum, isu atau bidang yang menjadi tumpuan perlu dikenal pasti seterusnya menyediakan konteks yang sesuai untuk tinjauan literatur. Trend keseluruhan tajuk, cadangan dalam teori, metodologi, bukti dan kesimpulan atau masalah/perspektif baharu perlu dinyatakan.

2.2 Kajian Terdahulu/Lapangan/Ulasan/Siasatan

2.2.1 *Projek Jenis Kajian*

Hasil rujukan dan ulasan yang diperoleh daripada bahan literatur (kajian, *reviews*, artikel, kajian kes dan sebagainya) yang berkaitan dengan isu yang hendak dikaji. Kajian literatur merupakan asas penting supaya kajian yang dijalankan mempunyai garis panduan dan juga sumber rujukan yang tepat serta jelas. Ianya adalah satu proses sistematik yang memerlukan pembacaan dan perhatian yang terperinci yang membabitkan kesimpulan bertulis yang diringkaskan mengenai isu kajian yang berkaitan yang menjelaskan maklumat lepas dan semasa serta keperluan bagi kajian yang dicadangkan.

2.2.2 *Projek Jenis Nyata*

Hasil rujukan dan ulasan yang diperoleh daripada bahan literatur (kajian, *reviews*, artikel, kajian kes dan sebagainya) atau situasi sebenar keadaan yang berkaitan dengan projek yang akan dijalankan. Pelajar membuat kajian atau siasatan terhadap projek sedia ada di pasaran, kelemahan yang wujud, masalah yang cuba diselesaikan, teori-teori sokongan dan sebagainya. Siasatan ini perlu memberikan gambaran, ringkasan, dan penilaian kritikal terhadap masalah projek. Pembangunan projek juga boleh merujuk kepada dasar pembangunan negara atau dasar kerajaan yang sedia ada.

Contoh 2.2 (TEKNIKAL):

Brick is an extremely an old building material, known to have been used in the Mesopotamia region since the millennium before century.

(Giuseppe and Eduardo, 2009)

British Standard, BS 3921: 1985 has specified certain requirements for clay brick is for use in walling, and they are dimensions, compressive strength, water absorption, soluble salt content, efflorescence and sampling.

(British Standard, 1985)

Contoh 2.2 (SAINS SOSIAL):

A literature review is known as a text of a scholarly paper, which includes the current knowledge including important and real findings, as well as conjectural and methodological contributions to a particular topic. Literature reviews use incidental sources, and do not report new or original experimental work (Baglione, 2012). A literature review is a select analysis of existing research which is relevant to the research topic and shows how it relates to the research investigation. It explains and justifies how the investigation may help answer some of the questions or gaps in the research area (Shields and Rangarjan, 2013).

The literature reviews that was conducted for this research were evaluative, exploratory, and instrumental. Apart from that, narrative review was also used in which it summarises different primary studies which conclusions are drawn into a holistic interpretation based on the reviewers' own experience, existing theories and models (Campbell Collaboration, 2006; Kirkevold, 1997). This type of review contributed towards answering the research questions from Chapter 1.

***According to** Olalusi and Otunola, (2012), when a project has been started at an earlier date, but for some reasons has been stopped, it is described to be an abandoned project. Such abandonment are just not limited to buildings alone, but also to roads, industrial structures, bridges, factories, dams, electricity, communication projects and so on.*

*The issue of abandoned projects for example in Nigeria, has started more than 20 years ago, **where this could be seen in the study of** Akindoyeni, (1989), where he has stated that if projects are to be executed completely, planning is the most important agenda to be carried out, which Ogunsemi (1991) **further added** that the successful completion of a project depends on adequate planning which also includes financial planning.*

*Nigeria is one of the country which has high rates in abandoned projects since many years back. **It was reported by** Osemenan, (1987), that the construction industry of Nigeria has become the world's junk-yard of abandoned projects, where these projects are estimated to be worth of billions.*

***According to another report by** Kotangora, (1993), the issue of abandoned project was not given an adequate attention for a long time which has resulted a negative effect not only towards the construction industry but to the national economy as a whole.*

Adaptasi petikan dari Doraisamy (2017)

2.3 Rumusan Bab

Rumusan perlu dikaitkan dengan bahan rujukan yang memfokuskan tajuk utama dalam literatur dengan bidang yang hendak dikaji. Walau bagaimanapun, subtajuk yang dicadangkan boleh ditambah mengikut kesesuaian projek/kajian yang dilaksanakan.

Gaya Sitasi Rujukan

Dalam menulis kajian literatur, sumber rujukan hendaklah ditunjukkan dengan menyatakan nama pengarang dan tahun penerbitan mengikut teknik rujukan/sitasi (*citation*) yang ditetapkan mengikut program pengajian. Menurut *Oxford Dictionaries Online (2014),* sitasi *(citation)* merupakan petikan atau rujukan dari buku, artikel, atau penulis, terutamanya dalam penulisan ilmiah atau ucapan rasmi. Terdapat beberapa gaya sitasi yang boleh digunakan seperti *American Psychological Association (APA) Style* dan *Institute of Electrical and Electronic Engineers (IEEE) Style.* Sebarang gaya penulisan yang dipilih atau disarankan perlu digunakan secara konsisten. Gaya sitasi yang berlainan dalam satu laporan perlu dielakkan. Contoh menulis gaya sitasi APA ditunjukkan seperti berikut:

(a) Text/sentence… (author, year).
(b) According to author (year), text/sentence …
(c) Two authors can be used ‘and’
(d) Text/sentence … (author et.al., year).
(e) According to author et. al., (year), text/sentence …
(f) Author, (year) has stated/explained/elaborated/given …
(g) Author et al., (year) has stated/explained/elaborated/given …

Nota : et.al digunakan jika terdapat lebih daripada dua penulis.

Berikut dinyatakan beberapa contoh penulisan gaya sitasi seperti di Jadual 7.1.

Jadual 7.1: Penulisan Sitasi dan Senarai Rujukan

<table>
<tr><th>Gaya (Style)</th><th>Contoh Sitasi dan Senarai Rujukan
Sumber: Buku</th></tr>
<tr><td rowspan="2">APA/CSE

(name – year - system)</td><td>Sitasi (Citation)

Menurut United Nations World Tourism Organisation (UNWTO) (2013), pelancongan dunia telah berkembang sebanyak empat peratus pada tahun 2012 dengan mencatat jumlah ketibaan pelancong sebanyak 1035 million dan jumlah pendapatan sebanyak USD1075 billion....Kerajaan Malaysia telah menekankan pembangunan program homestay kerana ia adalah salah satu produk pelancongan yang perlu diperkasakan di negara ini (Mapjabil & Che Ismail, 2012). Asal usul program homestay bermula di Eropah pada tahun 1970-an ... (Mapjabil & Che Ismail, 2012).</td></tr>
<tr><td>Senarai Rujukan

United Nations World Tourism Organisation (UNWTO). (2013). World Tourism Barometer – Tourism Trends and Marketing. Madrid. Muat turun dari http://www.e-unwto.org/doi/pdf/10.18111/wtobarometereng.2013.11.1.1 pada 7 Oktober 2015.

Mapjabil, J. & Che Ismail, S. (2012). Program Homestay di Sungai Semilang, Pulau Pinang: Pembangunan dan Perubahan Persekitaran. Dalam J. Mapjabil & Din, K. H. (Ed). Pelancongan di Malaysia: Isu-isu Penyelidikan Terpilih. Sintok: Universiti Utara Malaysia Press.</td></tr>
</table>

<table>
<tr><th>Gaya (Style)</th><th>Contoh Sitasi dan Senarai Rujukan
Sumber: Buku</th></tr>
<tr><td rowspan="2">IEEE/
Chicago/
CSE
(citation - name-system)</td><td>Sitasi (Citation)

Menurut United Nations World Tourism Organisation (UNWTO)[1] pelancongan dunia telah berkembang sebanyak empat peratus pada tahun 2012 dengan mencatat jumlah ketibaan pelancong sebanyak 1035 billion dan jumlah pendapatan sebanyak USD1075 billion....Kerajaan Malaysia telah menekankan pembangunan program homestay kerana ia adalah salah satu produk pelancongan yang perlu diperkasakan di negara ini[2]. Asal usul program homestay bermula di Eropah pada tahun 1970-an ... [3].</td></tr>
<tr><td>Senarai Rujukan

1. United Nations World Tourism Organisation (UNWTO). World Tourism Barometer – Tourism Trends and Marketing. (Madrid: UNWTO, 2013), 1. Muat turun dari http://www.e-unwto.org/ doi/pdf/10.18111/wtobarometereng. 2013.11.1.1 pada 7 Oktober 2015.

2. Mapjabil, Jabil & Che Ismail, Suriani. Program Homestay di Sungai Semilang, Pulau Pinang: Pembangunan dan Perubahan Persekitaran. Dalam J. Mapjabil & Din, K. H. (Eds). Pelancongan di Malaysia: Isu-isu Penyelidikan Terpilih. (Sintok: Universiti Utara Malaysia Press, 2012). 139

3. Ibid., 140.</td></tr>
</table>

BAB 3: METODOLOGI / REKA BENTUK

Bab ini merangkumi pendahuluan bab, reka bentuk kajian/projek dan rumusan. Metodologi merujuk kepada kaedah yang paling sesuai untuk menjalankan kajian/projek dan menentukan tatacara yang efektif bagi menjawab permasalahan kajian/projek. Huraian berkaitan dengan proses kerja hendaklah dinyatakan dengan jelas dan ianya mesti selari dengan perancangan kerja yang telah dibuat pada carta Gantt. Carta Gantt perlu disertakan dalam bab membandingkan jangka masa yang dirancang dengan jangka masa sebenar yang diambil untuk menyiapkan kajian/projek berkenaan.

Subtajuk yang terdapat dalam bab ini juga bergantung sebahagian besarnya kepada jenis kajian/projek yang dilaksanakan. Sesetengah jenis kajian/projek mungkin memerlukan perbincangan terperinci berkaitan reka bentuk dan instrumen kajian/projek berbanding kajian/projek yang lain. Kaedah dan rujukan kajian/projek yang digunakan perlu dinyatakan dan diterangkan dengan terperinci. Oleh itu, kandungan penulisan bab yang disyorkan adalah seperti berikut:

3.1 Pendahuluan

Pendahuluan bab membincangkan kandungan yang ada dalam bab ini secara ringkas dan padat.

3.2 Reka Bentuk Kajian/Projek

Reka bentuk kajian menghuraikan reka bentuk kajian yang digunakan (sama ada berbentuk penerokaan, deskriptif, sebab akibat atau eksperimen) dan sama ada data yang dikumpul berbentuk kualitatif, kuantitatif atau campuran.

Contoh 3.2 (Teknikal):

Kajian ini dilaksanakan menggunakan reka bentuk eksperimental...

Contoh 3.2 (Sains Sosial):

Kajian ini dilaksanakan menggunakan kaedah kuantitatif...

3.2.1 *Projek Jenis Kajian*

(a) Pensampelan

Huraian mengenai teknik persampelan yang digunakan dalam kajian perlu dinyatakan dengan jelas. Persampelan membolehkan membuat inferens (rumusan) dibuat terhadap sesuatu populasi tanpa perlu melibatkan setiap individu dalam populasi tersebut. Sesuatu sampel yang baik adalah sampel yang mewakili populasi kajian. Terdapat tiga langkah dalam proses pemilihan sampel/pensampelan iaitu:

(i). tentukan populasinya;
(ii). tentukan saiz sampel; dan
(iii). pilih sampel yang diperlukan.

Antara teknik pensampelan yang lazim digunakan termasuklah pensampelan rawak mudah (*simple random sampling*), pensampelan sistematik (*systematic sampling*), pensampelan berstrata (*stratified sampling*), pensampelan berkluster (*cluster sampling*), pensampelan kuota, pensampelan bertujuan (*purposive sampling*), pensampelan mudah (*convenience sampling*) dan pensampelan bola salji (*snowball sampling*).

(b) Kaedah Pengumpulan Data

Huraian mengenai kaedah pengumpulan data yang digunakan untuk mencapai objektif projek/kajian termasuk instrumen kajian perlu dinyatakan dengan jelas. Instrumen kajian merupakan satu alat yang digunakan ketika menjalankan sesuatu kajian untuk memperoleh data bagi tujuan mencapai objektif kajian. Instrumen yang boleh digunakan seperti kaedah soal selidik, kaedah pemerhatian, kaedah temubual dan kaedah-kaedah lain yang berkaitan. Pendekatan kajian/projek yang digunakan untuk memperoleh data terbahagi kepada tiga iaitu: (i) kuantitatif (melalui borang soal selidik), (ii) kualitatif (melalui temubual dan pemerhatian) dan (iii) gabungan kedua-dua pendekatan untuk memperoleh data yang tepat.

Contoh 3.2.1b (SAINS SOSIAL):

Kajian ini dilaksanakan menggunakan kaedah kuatitatif melalui penggunaan kaedah soal selidik. Soal selidik diedarkan kepada responden secara bersemuka. Tempoh pengumpulan data akan berlanjutan selama lima bulan, bermula dari Jun sehingga Oktober 2013.

Instrumen kajian adalah berdasarkan skala yang telah dibangunkan oleh Li et. al (2005) yang telah melalui proses validasi yang teliti. Konstruk (apa yang hendak diukur) yang digunakan telah dikenal pasti dan digunakan oleh Wisner dan Tan (2000) dan Basnet et. al (2003). Antaranya termasuk pemilihan pembekal, pakatan strategik dengan pembekal yang terpilih, hubungan dengan pelanggan dan kualiti perkongsian maklumat. Soal selidik yang digunakan terdiri daripada format jenis Likert 5 skala (1 = sangat tidak bersetuju hingga 5 = sangat bersetuju) yang terbahagi kepada tiga bahagian. Bahagian pertama meninjau amalan Pengurusan Rantaian Bekalan (PRB), bahagian kedua adalah berkaitan persepsi hasil prestasi perniagaan kecil dan sederhana berbanding pesaing sementara bahagian ketiga mengumpul maklumat mengenai latar belakang perniagaan...

Adaptasi petikan dari Nik Mohd Masdek & Othman (2014)

Contoh 3.2.1b (SAINS SOSIAL):

Kajian ini dilaksanakan menggunakan kaedah kualitatif (temu duga). Graduan kolej komuniti yang telah melanjutkan pengajian di peringkat ijazah di universiti tempatan akan ditemu duga. Para responden akan dihubungi menerusi telefon dan e-mel. Mereka akan diberi penerangan tentang tujuan kajian dan hak mereka sebagai responden. Semua perbualan dan perbincangan akan dirakam secara audio dan didokumentasikan.

Adaptasi petikan dari Ahmad et. Al (2014)

(c) Kaedah Analisis Data

Huraian mengenai kaedah yang digunakan untuk menyusun, mengolah dan menganalisis data yang telah dikumpul bagi menjawab persoalan kajian perlu dinyatakan. Selain itu, analisis data juga boleh memberikan maklumat tambahan yang dapat memberi pencerahan kepada objektif kajian yang dikaji. Ianya harus dipersembahkan dalam bentuk yang boleh difahami.

Contoh 3.2.1c (SAINS SOSIAL):

Data yang dikumpul diproses dan dianalisis menggunakan statistik deskriptif dan juga analisis korelasi hasil darab momen Pearson (r), menggunakan SPSS versi terkini pada aras signifikan 5%. Kekuatan korelasi dibaca mengikut kategori yang dikemukakan oleh Dancey dan Reidy (2004).

Adaptasi petikan dari Nik Mohd Masdek & Othman (2014)

3.2.2 *Projek Jenis Nyata*

(a) Kaedah/Proses/Teknik Penghasilan Projek

Segala proses pembuatan atau proses kerja termasuk kaedah/teknik pelaksanaan dalam menyiapkan projek ini perlu dinyatakan secara ringkas dan padat. Dalam menghasilkan reka bentuk sesuatu projek, beberapa perkara perlu dipertimbangkan antaranya dari segi pemilihan bahan, konsep reka bentuk, analisis kejuruteraan, analisis pengukuran, ujian makmal dan lukisan kejuruteraan (mengikut keperluan dan kesesuaian kursus Projek dan program pengajian). Setiap reka bentuk yang dibuat juga perlu mengambil kira beberapa faktor seperti faktor pengguna (mengikut umur, jantina, pengalaman dan sebagainya), persekitaran (cuaca, suhu, lokasi dan sebagainya), ergonomik (keselesaan projek), bahan (mudah dicari dan murah harganya), peralatan (kemudahan perolehan, teknologi dan penyelenggaraan) dan keselamatan (berpandukan Akta Keselamatan dan Kesihatan Pekerjaan 1994, OSHA).

Antara perkara yang boleh dibincangkan:

(i). **proses pembuatan**: proses yang terlibat dalam pembangunan projek bermula dari reka bentuk dan huraian mengenai radas/peralatan, teknik pengukuran termasuk punca kesilapan dan cara untuk mengurangkannya, bahan yang digunakan dan cara penghasilan serta pengujian; dan/atau

(ii). **masalah teori/reka bentuk/penyelesaian masalah**: huraian mengenai kaedah atau teknik yang digunakan termasuk senarai ujian yang telah dilakukan.

Contoh 3.2.2a (TEKNIKAL):

Kajian ini akan dilaksanakan menggunakan kaedah kualitatif. Kaedah yang digunakan adalah ujian makmal yang akan dijalankan terhadap sampel-sampel terpilih. Sampel-sampel akan diuji mengikut prosedur atau spesifikasi yang ditetapkan oleh piawaian X. Hasil dapatan ujian akan direkodkan dan dianalisis.

Adaptasi petikan dari Bolton et al (2014)

(b) Bahan dan Peralatan

Huraian yang jelas mengenai penggunaan bahan dan peralatan untuk penghasilan projek. Senarai bahan dan peralatan yang digunakan perlu dinyatakan sebab pemilihan bahan/peralatan tersebut. Setiap bahan dan peralatan yang disenaraikan perlu dinyatakan fungsi, spesifikasi, ukuran dan kuantiti yang digunakan. Pelajar boleh memasukkan perkara berikut (mengikut keperluan dan kesesuaian kursus Projek dan program pengajian):

(i). lukisan kejuruteraan;

(ii). penerangan mengenai reka bentuk produk dari segi saiz produk, bahan yang digunakan, pecahan komponen/bahagian, konsep yang digunakan dan juga fungsinya;

(iii). kos pembuatan dan cadangan harga jualan (kos bahan, kos penggunaan mesin, peralatan, buruh, elektrik, reka bentuk serta kos keseluruhan projek); dan

(iv). pengiraan kos secara terperinci boleh diletakkan di dalam lampiran.

Contoh 3.2.2b (TEKNIKAL):

BAHAN

Penyediaan Sampel

Kepingan filet ayam akan diambil dari kilang pemprosesan daging ayam serta merta selepas penyejukan untuk kajian intervensi pembekuan. Di dalam makmal, semua filet ayam direndam dalam ampaian Camphylobacter sp selama 15 saat dan dibiarkan pada suhu bilik dalam kabinet aliran laminar selama 30 minit untuk menggalakkan pelekatan bakteria. Filet disimpan dalam peti sejuk beku pada suhu – 20°C. Sampel (3 filet) diambil setiap minggu selama 6 minggu dan bilangan Camphylobacter sp ditentukan dengan kaedah pencairan bersiri.

Ujikaji Pembekuan: Penyediaan bakteria Camphylobacter sp.

Strain Campylobacter diasingkan dari daging ayam dan disimpan pada -80°C atas manik seramik (TC, Heywood, UK) dan dikultur secara pemindahan aseptik satu manik ke 30 ml bubur nutrien. Seterusnya sel Camphylobacter sp. akan dikumpul dengan pengemparan pada 2.665 x g selama 10 minit. Bilangan koloni yang terbentuk per mililiter (colony forming unit per ml) akan ditentukan dengan kaedah pencairan bersiri.

Penilaian Sensori

Penilaian sensori akan dinilai oleh 8 orang panel penilai yang bertauliah. Satu senarai ciri-ciri bagi menerangkan bau, rupa, bau setelah dimasak, perisa dan rasa, dan tekstur akan diedarkan. Ahli panel diminta untuk menilai setiap sampel yang diberikan kod 3 digit.

Adaptasi petikan dari Bolton et al (2014)

(c) Kaedah Analisis Data

Huraian mengenai kaedah yang digunakan untuk menyusun, mengolah dan menganalisis data yang diperoleh daripada eksperimen, ujian makmal, ujian pengukuran dan sebagainya yang berkaitan bagi menjawab persoalan kajian perlu dinyatakan dengan jelas. Selain itu, analisis data juga boleh memberikan maklumat tambahan yang dapat memberi pencerahan kepada objektif kajian yang dikaji. Ianya harus dipersembahkan dalam bentuk yang boleh difahami.

> ***Contoh 3.2.2c (TEKNIKAL):***
>
> Semua penghitungan bakteria dari setiap sampel akan dilaporkan sebagai nilai min dan sisihan piawai. Tiga replikat berasingan akan dilaksanakan ke atas eksperimen sejukbeku, dengan semua analisis dilaksanakan secara duplikat. Untuk eksperimen penilaian deria, setiap atribut akan dianalisis menggunakan one-way analysis of variance (ANOVA, SPSS versi terkini) untuk menentukan sama ada terdapat perbezaan yang ketara di antara filet daging ayam mentah, filet daging ayam sejuk beku dan filet ayam setelah dimasak.
>
> Adaptasi dan terjemahan petikan dari Bolton et al (2014)

3.3 Kajian Rintis *(jika berkaitan)*

Kajian rintis merupakan fasa terakhir tinjauan sebelum pengumpulan data bermula adalah untuk mencari permasalahan dalam kajian, termasuk soalan yang lemah dalam soal selidik, arahan yang tidak lengkap dan instrumen yang mengelirukan. Tujuan kajian rintis dijalankan adalah untuk:

(a) menguji tempoh yang diperlukan untuk mendapatkan maklum balas;
(b) menyemak semua item dan arahan agar jelas; dan
(c) menggugurkan item yang tidak menghasilkan data yang diperlukan untuk mencapai objektif dan menjawab persoalan kajian.

3.4 Rumusan

Rumusan subtajuk yang telah dikemukakan di dalam Bab 3 yang merangkumi jenis projek/kajian, cara pelaksanaan projek/kajian serta kaedah pelaporan data. Selain itu, ia juga mengandungi penerangan dan justifikasi terhadap kaedah kajian/projek yang dipilih tanpa memperkenalkan bahan baharu bagi menunjukkan kesinambungan ke bab seterusnya.

BAB 4: DAPATAN KAJIAN DAN PERBINCANGAN

Bab ini memaparkan data dan analisis kajian. Dapatan keseluruhan dan analisis dibentangkan dalam bentuk jadual, rajah dan pernyataan bagi membolehkan penemuan penting dikemukakan. Bab ini perlu disusun mengikut hierarki persoalan kajian bagi menunjukkan bahawa semua persoalan telah terjawab. Dapatan kajian perlu dibincangkan secara kritikal bagi melambangkan keilmiahan sesuatu kajian/projek yang dijalankan mengikut kesesuaian dan keperluan kursus Projek dan program pengajian.

4.1 Pendahuluan

Pendahuluan bertujuan untuk membawa pemikiran pembaca ke arah gambaran dapatan kajian berdasarkan kepada objektif dan persoalan kajian. Bab ini menerangkan secara keseluruhan tentang kajian yang dilaksanakan.

4.2 Dapatan Kajian/Pengujian

4.2.1 *Projek Jenis Kajian*

Dapatan kajian adalah berkaitan dengan keputusan kajian yang dijalankan. Ia perlu mengandungi keputusan analisis yang perlu dilaporkan secara sistematik, diulas secara jelas dan diinterpretasi dengan baik berdasarkan objektif dan persoalan kajian termasuk kadar respon dan profil demografi responden. Dapatan kajian boleh dilaporkan dalam bentuk jadual, rajah dan interpretasi yang menjawab kepada persoalan kajian. Dapatan-dapatan ini sebaiknya disusuli dengan perbincangan ilmiah.

4.2.2 *Projek Jenis Nyata*

Huraian mengenai hasil pengumpulan dan analisis data merangkumi penilaian berkaitan projek yang dibangunkan termasuk kelebihan, kekurangan atau masalah dalam proses pembangunan projek perlu dinyatakan. Ujikaji-ujikaji yang dijalankan ke atas produk yang telah dihasilkan berserta kaedah pengujian dan peralatan yang diguna pakai juga hendaklah diperjelaskan. Seandainya produk

yang terhasil tidak memenuhi spesifikasi yang ditetapkan, perbincangan kaedah yang boleh digunakan bagi mengatasi masalah tersebut boleh dinyatakan. Antara perkara yang boleh dibincangkan:

(a) senarai alatan pengujian;
(b) kaedah pengujian dan kalibrasi;
(c) keselamatan dalam pengujian/langkah berjaga-jaga;
(d) peringkat pertama keputusan pengujian dan kalibrasi;
(e) peringkat akhir keputusan pengujian; dan
(f) membaikpulih dan penyelenggaraan

Hasil keputusan adalah bergantung kepada berapa banyak maklumat yang hendak dipersembahkan contohnya dari segi kos, masa operasi, produktiviti dan lain-lain. Keputusan lazimnya diringkaskan dalam bentuk jadual, rajah dan gambar. Data keputusan ujikaji yang terperinci boleh dilampirkan berasingan di dalam lampiran.

Contoh 4.2 (TEKNIKAL):

A set of experiments was carried out to study the effect of reaction temperature, reaction pressure and molar ratio of methanol to triglycerides in the methyl esters formation. The results revealed that the supercritical treatment of 350oC, 30 MPa and 240 sec with molar ratio of 42 in methanol is the best condition for transesterification of rapeseed oil to biodiesel fuel. In addition, the methyl esters produced are similar to those by the common catalyzed process as it shown in Figure 1.

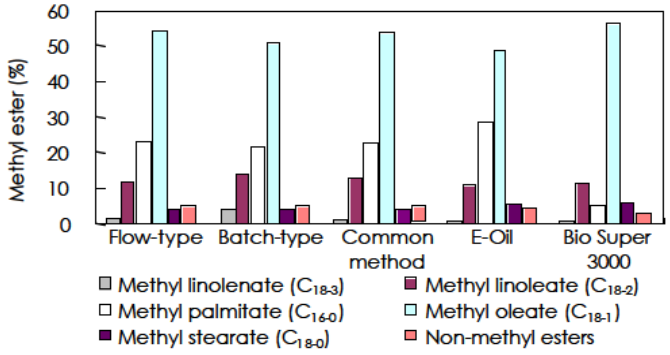


Figure 1. Methyl esters composition of biodiesel fuels prepared by supercritical methanol and those of commercial biodiesel fuels

Adaptasi petikan dari Zieba, Pacula & Drelinkiewicz (2009)

Contoh 4.2 (SAINS SOSIAL):

Jadual 1 ini menunjukkan negara asal responden yang melancong ke Melaka. Berdasarkan dapatan kajian, pelancong yang berasal dari Melaka merupakan pelancong yang paling ramai berbanding pelancong dari negara lain. Peratusan pelancong yang berasal dari Melaka adalah sebanyak 32.1 peratus. Daripada jadual ini juga, pelancong yang datang ke Melaka boleh dipecahkan kepada dua iaitu pelancong dalam negara dan pelancong luar negara. Pelancong dalam negara yang jumlahnya 93.6 peratus adalah pelancong yang datang dari negeri yang ada di dalam Malaysia. Manakala pelancong luar negara yang jumlahnya hanya 6.4 peratus adalah pelancong yang datang dari luar Malaysia.

Jadual 1. Negara/negeri asal pelancong yang datang ke Melaka

Negara asal	Kekerapan	Peratus
Dalam Negara		
Johor	9	6.4
Kedah	6	4.3
Kelantan	2	1.4
Kuala Lumpur	7	5.0
Melaka	45	32.1
Negeri Sembilan	7	5.0
Pahang	14	10.0
Perak	8	5.7
Pulau Pinang	1	0.7
Sabah	3	2.1
Sarawak	2	1.4
Selangor	11	7.9
Terengganu	12	8.6
Malaysia	4	2.9
Luar Negara		
Australia	1	0.7
Netherland	2	1.4
Singapura	6	4.3
Jumlah	140	100.0

Sumber: Data Kajian Lapangan, 2011.

Adaptasi petikan dari Zaimah, Ah, Sum & Ahmad (2015)

4.3 Perbincangan

Huraian yang jelas dan padat mengenai bagaimana dapatan kajian menyokong dapatan kajian lepas, teori atau model yang berkaitan (jika berkaitan). Perbincangan persoalan kajian secara kritis satu persatu berpandukan dapatan kajian dan kajian literatur perlu dikemukakan.

Contoh 4.3 (TEKNIKAL):

Using P. fluorescens, the spread of bacterial contamination from poultry to hands, the chopping board, knife handle, knife blade, dishcloth, fridge handle, microwave handle, microwave buttons, press handle, oven handle, plate, tinfoil and the draining board was readily demonstrated in this study. Gorman et al. (2002) have previously demonstrated cross-contamination of hands, oven handles, counter tops and draining boards with bacteria from poultry and secondary spread in the home. Other studies have also demonstrated the transfer of Campylobacter from poultry to hands, kitchen utensils and ready-to-eat foods directly or via the cutting board (Luber et al. 2006; van Asselt et al. 2008; Fravalo et al. 2009; Tang et al. 2011). Indeed, Luber (2009) concluded that cross-contamination events during food preparation presented a greater risk of illness than the risk associated with undercooking poultry meat.

Adaptasi petikan dari Mohamed-Noor, Shuaib & Abdalla (2012)

Contoh 4.3 (SAINS SOSIAL):

Berdasarkan bukti di atas, dapat dikatakan bahawa kemudahan di homestay ini telah memenuhi permintaan pelancong domestik dan hasil kajian ini selari dengan kajian oleh Kozak, (2001) dan Salleh, et al. (2011). Bagaimanapun kajian oleh Adrianna, et al. (2007) dan Jamaluddin, et al. (2012) cenderung untuk tidak menyokong dapatan kajian ini kerana dalam kajian mereka kemudahan seperti tandas tidak memberi kepuasan kepada pelancong sekaligus menimbulkan masalah kepada mereka. Ini boleh memberi kesan kepada keputusan pelancong untuk datang kembali ke destinasi yang sama. Kajian lepas juga menunjukkan bahawa apabila para pelancong melalui pengalaman yang baik di sesebuah destinasi pelancongan, mereka akan melakukan lawatan semula pada masa hadapan ke kawasan tersebut (Ross, 1993; Kozak & Rimmington, 2000; Hui, Wan & Ho, 2007). Di samping itu, mereka juga akan menceritakan pengalaman baik tersebut dan mencadangkan kepada orang lain supaya mengunjungi destinasi yang mereka telah lawati (Yoon & Uysal, 2005; Salleh, et al. 2007).

Adaptasi petikan dari Zaimah, Ah, Sum & Ahmad (2015)

4.4 Rumusan

Rumusan bab bermaksud merumuskan kata kunci terpenting daripada dapatan kajian. Ia juga perlu menunjukkan kesinambungan ke bab seterusnya.

BAB 5: KESIMPULAN DAN CADANGAN

Bab ini membincangkan dapatan kajian dengan mengaitkan teori-teori (jika berkaitan) dan kajian lampau yang dibincangkan dalam bab kajian literatur. Sebaiknya, perbincangan dapatan kajian ditulis mengikut susunan objektif/soalan/kajian/hipotesis. Penemuan kajian dirumuskan selari dengan objektif/persoalan/hipotesis kajian. Kajian juga boleh mencadangkan sesuatu inovasi atau idea baharu berdasarkan dapatan kajian. Signifikan kajian dan implikasi terhadap bidang kajian perlu dinyatakan. Cadangan kajian penambahbaikan/lanjutan untuk masa hadapan juga boleh dimasukkan dalam bab ini.

5.1 Pendahuluan

Pendahuluan bab ini bertujuan untuk memperihalkan tentang kandungan bab secara keseluruhan.

5.2 Kesimpulan

Kesimpulan kajian mengemukakan rumusan secara keseluruhan kajian/projek yang dilaksanakan, hasil dan pencapaian kajian/projek sama ada mencapai objektif atau sebaliknya, serta perancangan dan harapan untuk kajian/projek akan datang. Kelemahan dan kelebihan perlu dinyatakan dengan ringkas dan tepat. Berikut adalah antara perkara yang boleh disimpulkan, namun ianya bergantung sebahagian besarnya kepada jenis kajian/projek yang dilaksanakan yang memerlukan huraian terperinci:

(a) penilaian;
(b) analisis;
(c) tafsiran;
(d) kajian perbandingan;
(e) ulasan;
(f) pertimbangan; dan
(g) kesimpulan

Penemuan kajian/projek perlu disimpulkan selari dengan dengan objektif dan persoalan kajian/projek.

Contoh 5.2 (TEKNIKAL):

In conclusion, the study demonstrated the dissemination of bacteria from contaminated poultry to hands and food contact surfaces and showed how cook-in-the-bag methods could reduce cross-contamination. It also suggested that although freezing does not completely eliminate Campylobacter, the most significant human pathogen associated with poultry, significant reductions can be obtained. Either or these approaches alone or in combination with improved consumer knowledge of effective hygiene procedures in the kitchen will reduce campylobacteriosis in the future.

Adaptasi petikan dari Mohamed-Noor, Shuaib & Abdalla (2012)

Contoh 5.2 (SAINS SOSIAL):

Hakikatnya pada masa kini, pembangunan pelancongan penyelaman skuba ini telah memberikan satu dimensi baru kepada komuniti pulau. Pembaharuan dalam aspek sosioekonomi penduduk dapat dilihat dengan jelas dan ketara. Namun dalam memperoleh kelebihan dalam sektor pelancongan penyelaman skuba ini, aspek kelestarian mesti diterapkan bagi mengurangkan kesan kepada alam sekitarnya. Kepesatan dalam pembangunan pelancongan ini perlu diselitkan dengan elemen dan program yang boleh memberikan situasi menang-menang kepada semua pihak. Pihak-pihak berkepentingan perlu memberikan lebih peluang kepada 'anak jati' untuk memperoleh manfaat daripada apa yang wujud di kawasan mereka. Penduduk tempatan juga harus pandai mengambil peluang yang ada bagi menjauhkan pengaruh atau eksploitasi pihak luar dalam pembangunan pelancongan penyelaman skuba di kawasan mereka.

Adaptasi petikan dari Mapjabil, Yusoh, Zainol & Marzuki (2015)

5.3 Cadangan

Cadangan kajian ialah penyenaraian idea baharu atau cadangan beberapa kajian lanjutan untuk memantapkan lagi dapatan kajian dalam bidang yang dikaji. Dengan kata lain, harus dikemukakan cadangan baharu yang terhasil daripada penemuan kajian.

Contoh 5.3 (TEKNIKAL):

Finally, Bethea et al. (2016) recently described an approach and associated tool to perform online verification that a sequence of inputs received at the server could have been generated by an honest client. Like MAX, their tool combines the results of symbolic execution with state information derived from concrete execution. However, their tool cannot be used to detect manipulation attacks, because the sequence of inputs generated by an adversarial client may be perfectly valid under the right network conditions..

Adaptasi petikan dari Pagliari, Daghero & Poncino (2020)

Contoh 5.3 (SAINS SOSIAL):

Secara keseluruhan program homestay di Kampung Mesilou boleh dianggap contoh kepada program homestay yang lain di Malaysia kerana kecekapan dan keprihatinan pihak pengurusan homestay ini menjadikan pelancong mendapat kepuasan dalam aspek kemudahan, keselamatan dan perkhidmatan. Usaha mempromosikan program homestay Kampung Mesilou melalui kerjasama antara syarikat swasta dan pihak kerajaan, iaitu *Sabah Tourism Board,* wajar dilakukan. Hal ini kerana, program homestay di Kampung Mesilou mempunyai potensi untuk dikembangkan dan pihak-pihak berkepentingan perlu memaksimumkan manfaat ini. Selain itu, aspek kemudahan dan kualiti perkhidmatan boleh dipertingkatkan lagi melalui kursus-kursus berkaitan dengan industri pelancongan seperti *housekeeping* dan pengurusan yang berterusan melalui kerjasama ahli jawatankuasa dan peserta program homestay Kampung Mesilou serta Jabatan Pelancongan Budaya dan Alam Sekitar Negeri Sabah. Hal ini dianggap penting kerana tanpa kerjasama pihak-pihak ini program homestay di Kampung Mesilou tidak dapat dijayakan. Penglibatan komuniti Kampung Mesilou dalam CBT dan aktiviti industri kecil seperti projek ladang sayur dan ladang ternak susu lembu juga perlu dilakukan secara menyeluruh supaya dapat diketahui tahap penglibatan dan kesan sosio ekonomi.

Adaptasi petikan dari Hussin & Kunjuraman (2015)

5.4 Limitasi Projek

Limitasi projek/kajian dan implikasi terhadap bidang kajian boleh dikemukakan.

5.5 Rumusan

Ringkasan tentang apa yang telah dibentangkan dalam bab ini.

RUJUKAN

Rujukan merupakan sumber dan bahan yang dirujuk dalam pelaksanaan projek/kajian. Setiap bahan yang dirujuk perlu disenaraikan mengikut susunan keutamaan bahan berkenaan pada halaman rujukan. Senarai rujukan harus mengikut format atau kaedah sitasi yang digunakan (rujuk Jadual 7.1: Penulisan Sitasi & Senarai Rujukan dan Bahagian II: Format Penulisan Laporan).

LAMPIRAN

Lampiran merupakan bahan tambahan yang penting dalam menghasilkan projek/kajian seperti data kajian uji kaji projek/kajian, maklumat peralatan, atur cara komputer, contoh soal selidik, peta, gambar dan sebagainya yang terlalu panjang untuk dimasukkan dalam laporan utama. Ianya perlu disenaraikan mengikut kumpulan maklumat berkaitan dan perlu dilabelkan secara berasingan seperti contoh di bawah:

Contoh Lampiran:

Lampiran A: Soal Selidik
Lampiran B: Senarai Responden
Lampiran C: Surat Kebenaran Menjalankan Penyelidikan
Lampiran D: Lukisan dan Reka Bentuk
Lampiran E: Dapatan Analisis Data
Lampiran F: Kos Projek
Lampiran G: Senarai Komponen Hasil Projek

CARTA GANTT

Perancangan aktiviti melibatkan garis masa yang dirancang secara mingguan untuk pembangunan projek/kajian berdasarkan carta alir metodologi (rujuk Rajah 4.4 dan LAMPIRAN B: CARTA GANTT PROJEK PELAJAR). Perancangan aktiviti kerja perlu disediakan dalam bentuk carta perbatuan atau Carta Gantt dengan memperincikan pengagihan tugas di antara ahli kumpulan (jika berkaitan) dan sasaran masa bagi setiap tugasan. Perancangan atau skop kerja mestilah merujuk kepada tugasan sebenar untuk membangunkan projek/kajian berkenaan. Untuk tujuan perancangan kerja, pelajar boleh mengaplikasikan konsep *Plan-Do-Check-Action* (PDCA) di dalam merancang perlaksanaan projek. Penyediaan carta Gantt hendaklah dijelaskan dalam dua proses iaitu (i) perancangan; dan (ii) pelaksanaan.

KOS PROJEK/KAJIAN

Huraian ringkas dan padat mengenai kos yang digunakan untuk melaksanakan projek/kajian.

BAHAGIAN II:
FORMAT PENULISAN LAPORAN

Berikut adalah format untuk menyediakan Kertas Cadangan dan Laporan Akhir Projek. Kesesuaian penulisan projek perlu dirujuk kepada Penyelia Projek yang berkenaan. Maklumat lanjut dalam bentuk ilustrasi seperti di LAMPIRAN H: FORMAT UMUM LAPORAN AKHIR PROJEK.

1. Kertas dan Saiz

Gunakan kertas yang berwarna putih saiz A4 (210 mm x 297 mm) yang bermutu tinggi (80 gram).

2. Jidar *(Margin)*

Pada amnya jidar adalah sama bagi setiap muka surat dan ukurannya seperti yang berikut:

(a) Bahagian atas : 2.5 cm
(b) Bahagian bawah : 2.5 cm
(c) Bahagian kiri : 3.8 cm
(d) Bahagian kanan : 2.5 cm

3. Penomboran Halaman

Setiap halaman dalam “bahagian permulaan” seperti penghargaan, senarai kandungan, senarai jadual dan sebagainya perlu dinomborkan dengan angka kecil Roman (i, ii, iii, iv dan lain-lain) kecuali pada halaman tajuk nombor Roman (i) perlu dihilangkan.

4. Penomboran Bab dan Bahagian Dalam Bab

Bab dan bahagian dalam bab perlu dinomborkan. Struktur penomboran bahagian dalam bab boleh disusun mengikut urutan tahap subtajuk dan tidak melebihi tiga lapisan (rujuk Lampiran H-11 Format Penulisan Pada Awal Bab).

5. Jadual dalam Bahagian Laporan

Semua jadual mestilah menggunakan *Arabic Numeric*. Tajuk jadual perlu diletakkan di atas jadual. Sekiranya tajuk itu hanya satu (1) baris, ia perlu '***center'.*** Sekiranya tajuk jadual melebihi satu (1) baris, ia perlu '*align'* ke sebelah kiri. Jadual mesti diberi nombor berdasarkan bab. Contoh, Jadual 1.1 merupakan jadual pertama yang terdapat dalam Bab 1 (rujuk Lampiran H-12 Format Penomboran Jadual dan Rajah).

6. Rajah dalam Bahagian Laporan

Bahan ilustrasi contohnya peta, carta, lukisan, graf, gambarajah dan fotograf disebut "Rajah". Semua rajah mestilah menggunakan *Arabic numeric*. Tajuk rajah perlu diletakkan di bawah rajah. Sekiranya tajuk itu hanya SATU (1) baris, ia perlu '***center'.*** Sekiranya tajuk rajah melebihi SATU (1) baris, ia perlu di *allign* ke sebelah kiri. Rajah mesti diberi nombor berdasarkan bab. Contoh, Rajah 1.2 merupakan rajah kedua yang terdapat dalam Bab 1 (rujuk Lampiran H-12 Format Penomboran Jadual Dan Rajah).

7. Penulisan

Format tulisan adalah seperti berikut:

(a) tulisan ditaip dengan menggunakan aksara (*font*) "**Times New Roman**" sahaja. Saiz aksara yang digunakan dalam teks hendaklah bersaiz 12 sahaja. Gunakan format "***Justified***" bagi semua teks.

(b) jarak di antara baris dalam teks *(line spacing*) ialah 1.5 langkau *(1.5 spacing*).

(c) gunakan huruf besar untuk menulis setiap permulaan nombor Bab dan tajuk Bab.

(d) nombor Bab dan tajuk Bab dengan menggunakan "**Bold**", dengan menggunakan aksara (*font*) bersaiz 14 dan '***center***'.

(e) guna muka surat baru bagi setiap permulaan BAB (Contoh: BAB 2).

(f) jarak di antara nombor bab dengan tajuk bab adalah 1.5 langkau *(1.5 spacing*).

(g) jarak di antara tajuk bab dengan baris pertama teks/subtajuk adalah dua langkau *(2 x 1.5 spacing)*.

(h) jarak antara subtajuk dengan baris pertama teks selepasnya ialah 1.5 langkau *(1.5 spacing*).

(i) jarak di antara perenggan adalah 1.5 langkau *(1.5 spacing).*

(j) mulakan subtajuk berserta nombornya dari jidar kiri.

(k) mulakan baris pertama (*first line*) perenggan ke dua dengan ensotan (*indent*) 0.5".

(l) gunakan jenis "*Italic*" bagi semua istilah selain daripada bahasa penulisan laporan.

(m) penulisan Kertas Cadangan dan Laporan Akhir Projek ditulis dalam Bahasa Malaysia atau Bahasa Inggeris (keseluruhannya). Jika terdapat perkataan yang tidak boleh diterjemah di dalam Bahasa Inggeris maka ia boleh ditulis dalam tulisan jenis '*Italic*'.

8. Had Laporan

Panjang Laporan Akhir Projek hendaklah di antara 50 hingga 100 muka surat sahaja. Had ini hanyalah untuk teks sahaja tidak termasuk bahagian hadapan rujukan dan lampiran.

9. Muka Hadapan

Muka hadapan laporan adalah bersaiz 12 *Times New Roman* (rujuk Lampiran H-1: Halaman Muka Hadapan).

10. Halaman Tajuk

Rujuk Lampiran H-2: Halaman Tajuk.

11. Akuan Keaslian dan Hak Milik

Halaman ini menyatakan akuan keaslian dan hak pemilikan hasil kajian/projek (rujuk Lampiran H-3: Halaman Perakuan Keaslian).

12. Penghargaan

Halaman ini hendaklah ditulis satu muka surat sahaja. Penghargaan dirakamkan kepada orang perseorangan atau organisasi yang telah memberikan sebarang bantuan dalam penyediaan projek (rujuk Lampiran H-4: Halaman Penghargaan).

13. Abstrak

Sekiranya penulisan laporan penuh ditulis dalam Bahasa Inggeris maka, abstrak perlu ditulis dalam Bahasa Inggeris dan diikuti dengan terjemahannya dalam Bahasa Melayu. Sebaliknya, jika penulisan laporan penuh adalah dalam Bahasa Malaysia, abstrak perlu ditulis dalam Bahasa Malaysia dan diikuti pula dengan terjemahannya dalam Bahasa Inggeris di muka surat yang berikutnya. Abstrak mestilah ringkas, ditulis **satu langkau dalam satu perenggan (*single spacing*), tidak melebihi 250 patah perkataan dalam satu muka surat sahaja**. Abstrak tidak sama dengan sinopsis atau ringkasan projek (rujuk Lampiran H-5: Halaman Abstrak).

14. Halaman Senarai Kandungan

Halaman kandungan perlu dimulakan pada halaman baru dan mengandungi senarai perkara yang terdapat dalam projek iaitu, Bahagian, Bab dan pecahan-pecahan utama daripada bab-bab berkenaan. Tajuk-tajuk berkenaan hendaklah sama seperti yang terdapat dalam laporan projek (rujuk Lampiran H-6: Halaman Senarai Kandungan).

15. Halaman Senarai Jadual

Senarai jadual perlu mengandungi semua tajuk, subtajuk, nombor jadual dan nombor muka surat jadual yang terdapat dalam laporan projek. Urutan nombor jadual perlu dibuat mengikut bab (rujuk Lampiran H-7: Halaman Senarai Jadual).

16. Halaman Senarai Rajah

Rajah merangkumi gambar rajah, fotograf, lukisan, graf, carta dan peta. Senarai rajah, nombor muka surat dan tempat rajah diletakkan hendaklah dicatatkan dalam senarai

rajah. Urutan nombor rajah hendak dibuat mengikut bab (rujuk Lampiran H-8: Halaman Senarai Rajah).

17. Halaman Senarai Simbol dan Singkatan

Halaman ini menyenaraikan simbol dan singkatan yang terdapat dalam teks (rujuk Lampiran H-9: Halaman Senarai Simbol dan H-10: Halaman Senarai Singkatan).

18. Rujukan

Rujukan merupakan bahan yang dirujuk semasa menyediakan kertas cadangan dan laporan projek. Pelajar diingatkan supaya menyenaraikan bahan yang dirujuk dalam halaman rujukan. Kaedah yang digunakan ialah format APA (*American Psychological Association*) atau format IEEE (*Institute of Electrical and Electronics Engineers*). Berikut adalah senarai kaedah penulisan rujukan dalam teks:

18.1 Format APA

Rujukan disusun mengikut abjad	
(a)	**Buku**
	Nama penulis iaitu nama keluarga dan singkatan yang digunakan. (Tahun terbitan), Judul Buku, Tempat terbitan: Penerbit, m.s **Contoh:** Hibbeler, R.C. (2015). *Engineering Mechanics: Statics* (14th ed.). N Y: Prentice Hall.
(b)	**Bab dalam buku yang disunting**
	Nama Penulis, Nama Keluarga atau Singkatan (tahun terbitan). Judul Artikel. *Judul Buku* (mukasurat). Tempat Terbitan: Penerbit. **Contoh:** Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

Rujukan disusun mengikut abjad	
(c)	**Jurnal**
	Nama Penulis 1 iaitu nama keluarga dan singkatan dan Nama Penulis 2 iaitu nama keluarga dan singkatan. (Tahun terbitan). Judul Artikel: *Judul Jurnal*, *volume*, muka surat. **Contoh:** Abdul Rahim and A. H. dan Bachan, S. (2008). Causes of accidents at construction sites. *Malaysian Journal of Engineering, 20(2):* 242 - 259. Penulis jurnal melebih 2 orang, istilah "et al." diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Abdul Rahim, A. H. et al. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259.
(d)	**Prosiding Persidangan**
	Nama Penulis 1 iaitu nama keluarga dan singkatan dan Nama Penulis 2 iaitu nama keluarga dan singkatan. (Tahun terbitan). Judul Artikel: *Nama Persidangan*, *lokasi*, tarikh, muka surat. **Contoh:** Awang. M and Abdullah S.I. (2011). Facilities Management Competency Imperatives. *International Conference Management - ICM 2011, Penang, Malaysia,* 13-14 Jun 2011. m/s 480 – 496. Penulis artikel prosiding persidangan yang melebihi 2 orang, istilah "et al." diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Awang. M et al. (2011). Facilities Management Competency Imperatives. *International Conference Management - ICM 2011, Penang, Malaysia,* 13-14 Jun 2011. m/s 480 – 496.
(e)	**Majalah**
	Nama Penulis 1 iaitu nama keluarga dan singkatan dan Nama Penulis 2 iaitu nama keluarga dan singkatan. (Tahun terbitan). Judul Artikel: *Judul Majalah*, *volume*, muka surat. **Contoh:** Mathews, J. and Berrett, D. (2005). Other winning equations. *Newsweek, 145(20),* 58-59. 16th May, 2016.

Rujukan disusun mengikut abjad	
	Penulis artikel majalah yang melebihi 2 orang, istilah “et al.” diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Mathews, J et al. (2005). Other winning equations. *Newsweek, 145(20),* 58-59. 16th May, 2016.
(f)	**Terbitan Kerajaan**
	Nama Penulis, (tahun). *Judul*. Tempat Terbitan, Penerbit. **Contoh:** Department of Finance and Administration. (2006). *Delivering Australian Government services: Managing multiple channels*. Canberra, Australia.
(g)	**Surat Khabar**
	Nama Surat Khabar. (Tahun). Judul artikel. *Judul suratkhabar*, muka surat. **Contoh:** The Canberra Times. (2007). Internet pioneer to oversee network redesign. *The Canberra Times*, p. 15. 28th May, 2007.
(h)	**Laman Sesawang**
	Nama Penulis iaitu nama keluarga dan singkatan. (Tahun terbitan). *Judul*. Diambil daripada alamat web. Tarikh di akses. **Contoh:** Abdul Rahim, A. H. and Bachan, S. (2008). Causes of accidents at construction sites*. Malaysian Journal of Civil Engineering, 20(2):* 242 - 259. Retrieved from http://www.researchgate.net/profile/links/ 53e979a10c f.pdf. on the 2nd. October, 2012. Bagi penulis artikel laman sesawang melebihi 2 orang, istilah “et al.” diletak selepas nama penulis pertama dan nama-nama penulis tidak perlu disebut. **Contoh:** Abdul Rahim, A. H. et al. (2008). Causes of accidents at construction sites*. Malaysian Journal of Civil Engineering, 20(2):* 242 - 259. Retrieved from http://www.researchgate.net/profile/links/ 53e979a10c f2fb1b9b6753e979a10cf2fb1b9b671357.pdf. on the 2nd. October, 2012.

18.2 Format IEEE:

Rujukan perlu diberi nombor dan disusun dalam susunan yang terpapar di dalam teks.	
(a)	**Buku**
	Nama penulis. *Tajuk Buku*. Lokasi: nama syarikat yang menerbit, tahun, mukasurat. **Contoh:** W.K. Chen. *Linear Networks Systems*. Belmont, CA: Wadsworth, 1993, pp. 123-35.
(b)	**Artikel dalam jurnal**
	Nama penulis. "Tajuk artikel".*Tajuk jurnal*, vol., mukasurat, tarikh. **Contoh:** G.Pevere. "Infrared Nation." *The International Journal of Infrared Design*, vol. 33, pp.56-99, Jan.1979.
(c)	**Artikel daripada prosiding persidangan (yang diterbitkan)**
	Nama penulis. "Tajuk artikel." *Prosiding persidangan*, tahun, muka surat. **Contoh:** D.B. Payne and H.G. Gunhold. "Digital sundials and broadband technology," in *Proc.IOOC-ECOC,* 1986, pp. 557-998.
(d)	**Internet**
	Nama penulis. "Tajuk." Internet: alamat URL, tarikh kemaskini [tarikh akses]. **Contoh:** M. Duncan. "Engineeering Concepts on Ice." Internet: www.iceengg.edu/staff. html, Oct. 25, 2000 [Nov. 29, 2003].
(e)	**Surat Khabar**
	Nama penulis. "Tajuk artikel." Newspaper (bulan, tahun), seksyen, muka surat. **Contoh:** *B. Bart. "Going Faster." Globe and Mail (Oct. 14, 2002), sec. A p.1.* *"Telehealth in Alberta." Toronto Star (Nov. 12, 2003), sec. G* pp. 1-3.

18.3 Kaedah Menulis Rujukan dalam Halaman Rujukan

Penulisan teks rujukan adalah disusun mengikut abjad seperti contoh berikut:

18.3.1 Format APA

Penulisan teks rujukan adalah disusun mengikut abjad seperti contoh berikut:

Rujukan disusun mengikut abjad

Abdul Rahim, A. H. et al. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259.

Department of Finance and Administration. (2006). *Delivering Australian Government services: Managing multiple channels*. Canberra, Australia: Author.

Hibbeler, R.C. (2015). *Engineering Mechanics: Statics* (14th ed.). N Y: Prentice Hall.

The Canberra Times. (2007). Internet pioneer to oversee network redesign. *The Canberra Times*, p. 15. 28th May, 2007.

Mathews, J. and Berrett, D. (2005). Other winning equations. *Newsweek, 145(20),* 58-59. 16th May, 2005.

Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

18.3.2 Format IEEE

Dalam menulis menggunakan format IEEE, rujukan perlu diberi nombor dan disusun dalam susunan yang terpapar dalam teks. Apabila merujuk kepada rujukan dalam teks, perlu meletakkan bilangan rujukan dalam kurungan berbentuk segi empat.

Rujukan disusun mengikut nombor

[1] S.K. Kenue, “Limited angle multifrequency deffiaction tomography,” *IEEE Trans. Sonic Ultrason*, vol. SU-29, no. 6, pp. 213-217, July 1982.

[2] P.M. Morse and H. Feshback, *Methods of Theoretical Physic*. New York: McGraw Hill, 1953.

[3] P.S. Meszaros, S.Lee and A. Laughlin, “Information processing and information technology career interest and choice amoung high school students,” *Reconfiguring the Firewall*, Wellesley: A K Peters, 2007, 77-86.

[5] R. Frinkel, R. Taylor, R. Bolles, R. Paul, “An overview of AL, programming system for automation,” *in Proc. Fourth Int. Join Conf Artif.Intel*., pp. 758-765, Sept. 3-7, 2006.

[13] B. Paynter, “Robodinos: what could possibly go wrong?”, *Wired*, 20 Juli 2009, [Online]. Tersedia: http://www.wired.com/entertainment/magazine/17-08/st_robotdinos [Diakses: 25 Juli 2010].

[15] S.K. Kenue, “Limited angle multifrequency deffiaction tomography,” *IEEE Trans. Sonic Ultrason*, vol. SU-29, no. 6, pp. 213-217, July 1982.

19. Halaman Senarai Lampiran

Halaman ini adalah sebagai pilihan bergantung kepada kandungan laporan. Ia mengandungi bahan-bahan ilustrasi tambahan atau data asal atau petikan yang terlalu panjang untuk dimasukkan di dalam teks laporan dan dapat memberi penerangan tambahan kepada teks dengan tidak menganggu tumpuan pembaca. Lampiran perlu dilabelkan mengikut abjad, seperti Lampiran A, Lampiran B dan seterusnya.

PENUTUP

Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, Kementerian Pengajian Tinggi (KPT) dihasilkan dengan kandungannya disusun secara ringkas dan komprehensif bagi memastikan ianya mudah difahami oleh semua pihak yang terlibat. Dengan adanya buku panduan ini, pengurusan dan pelaksanaan kursus Projek dapat dilaksanakan dengan baik, seragam dan terancang. Penggunaan buku panduan ini perlu disesuaikan mengikut keperluan sesuatu program pengajian dan situasi di politeknik.

Adalah diharapkan agar buku panduan ini dapat membantu semua pihak terutamanya pensyarah dan pelajar dalam melaksanakan kursus Projek yang berupaya mencapai hasil pembelajaran yang ditetapkan dan tahap penghasilan projek yang membanggakan dan berkualiti. Susunan bab dalam buku ini diolah sedemikian rupa bagi memudahkan pihak yang terlibat memahami peranan dan tanggungjawab masing-masing sebagai pelaksana, penyelaras dan pengurus. Aktiviti penghasilan projek berupaya memupuk pembinaan budaya ilmu melalui perkongsian maklumat secara pintar antara pelajar dengan pelajar dan/atau pelajar dengan pensyarah/masyarakat/industri melalui aktiviti berkenaan. Pelaksanaan Projek turut diharapkan dapat menyemai usaha penjanaan ilmu dalam kalangan pelajar bagi menyediakan bakal graduan yang berilmu, kreatif dan inovatif. Namun, perkara yang digariskan dalam buku panduan ini memerlukan sokongan, permahaman dan penghayatan untuk memastikan pelaksanaan Projek pelajar dan hasilnya memenuhi objektifnya serta dimanfaatkan sebaik mungkin sekaligus dapat meningkatkan kecekapan pengurusan dan kualiti pengajaran dan pembelajaran (PdP) di Politeknik Malaysia.

PENYATAAN KUAT KUASA

Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia, Edisi 2021, Kementerian Pengajian Tinggi (KPT) ini berkuat kuasa kepada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi dan institusi di bawah kawalannya mulai Sesi Disember 2020.

RUJUKAN

Abdul-Manaf, M.A. (2009). Analisis *kejadian kegagalan struktur pada bangunan awam di Johor*. Universiti Teknologi Malaysia: Laporan Projek Sarjana Muda.

Agensi Kelayakan Malaysia. (2007). *Kerangka Kelayakan Malaysia*.

Angterian, M.H., Mat-Ali, M.A. & Mat-Yasin, M.H. (2014). Lubricating Oil Cooling System. *Prosiding National Innovation and Invention Competition Through Exhibition 2014*.

Bolton, D., Meredith, H., Walsh, D & McDowell, D. (2014). Poultry Food Safety Control Interventions in the Domestic Kithen. *Journal of Food Safety*. 34:34 – 41.

Er, A. C. (2013). Pembangunan pelancongan lestari di Melaka: Perspektif Pelancong. *Malaysia Journal of Society and Space*. 9(3):12 – 23.

Kerzner. H. (2009). *Project Management: A System Approach to Planning, Scheduling and Controlling 10th Edition*.

Hussin, R. & Kunjuraman, V. (2014). Pelancongan Mapan Berasaskan Komuniti (CBT) Melalui Program *Homestay* di Sabah, Malaysia. *Malaysia Journal of Society and Space*. 10(3):160 – 174.

Jabatan Pendidikan Politeknik Kementerian Pendidikan Tinggi. (2015). Blueprint POLYGreen.

Jabatan Pengajian Politeknik Kementerian Pendidikan Tinggi. (2015). Buku Panduan Perancangan dan Pengurusan Harta Intelek (IP) dan Pengkomersialan Produk Inovasi Politeknik Malaysia.

Jabatan Pendidikan Politeknik Kementerian Pendidikan Tinggi. (2015). *Garis Panduan Dana Pembudayaan Penyelidikan – RAGS*.

Jabatan Pengajian Politeknik. (2014). *Arahan-Arahan Peperiksaan dan Kaedah Penilaian*.

Jabatan Pengajian Politeknik. (2014). *Dasar dan Prinsip Perancangan dan Penyampaian Kurikulum Program Pengajian.*

Jabatan Pengajian Politeknik. (2014). *Dokumen Kurikulum Program Pengajian Politeknik Kementerian Pendidikan Tinggi*.

Jabatan Pengajian Politeknik. (2012). *Garis Panduan Projek Pelajar Politeknik KPM Edisi 2012*.

Jabatan Pengajian Politeknik. (2011). *A Guide to Academic Writing Research and Innovation Jabatan Pengajian Politeknik*.

Kothari, N. et al., (2011). Finding Protocol Manipulation Attacks. *ACM SIGCOMM Computer Communication Review - SIGCOMM '11*. 41(4): 26 -37.

Mahmood, A. et al., (2012). Galactagogue Effects of *Musa x Paradisiaca* Flower Extract on Lactating Rats. *Advances in Bioresearch.* 3(4): 46 – 53.

Mansor, N. (2012). Keberkesanan Perkhidmatan Unit Psikologi, Kaunseling dan Kerjaya dalam Membantu Kerjaya Pelajar Politeknik. *Universiti Tun Hussein Onn Malaysia: Tesis Sarjana.*

Mapjabil, J. et al., (2012). Implikasi Sosioenomi Pembangunan Pelancongan Penyelaman Scuba Terhadap Komuniti Pulau di Malaysia: Satu Tinjauan Awal. *Malaysia Journal of Society and Space*. 8(5): 26 – 38.

Mohammad, N. (2012). Mengkaji Terma dan Sifat-Sifat Mekanikal Siling Berpenebat Fiber Sabut Kelapa. *Universiti Tun Hussein Onn Malaysia: Tesis Sarjana.*

Mustafa, A. & Ghazali, M. (2009). *House Buyers' Satisfaction Of Housing Projects*.

Nawi, M. N. M. et al., (2011). *Barriers to Implementation of the Industrialised Building System (IBS) in Malaysia*.

Masdek, N. R & Othman, M. F. (2014). Supply Chain Management Practices As A Source of Competitive Advantage for Food Processing SMEs in Peninsular Malaysia. *Economic and Technology Review*. 9(a): 19 -28.

Politeknik Kota Kinabalu. (2014). *Buku Log dan Garis Panduan Projek Pelajar Politeknik Kota Kinabalu Edisi 2014*.

Saka, S. & Kusdiana, D. (2001). Biodiesel Fuel From Rapeseed Oil As Prepared in Supercritical Methanol. *Fuel*. 80(2): 225 – 231.

Ulaganathen, K. et al., (2013). Rain Attenuation Prediction Using Frequency Scaling Technique at Tropical Region for Terrestrial Link. *Progress In Electromagnetics Research Symposium Proceedings*. Taipei, March 25 – 28, 2013: 191 – 194.

Universiti Kebangsaan Malaysia. (2010). *Dasar Harta Intelek Universiti Kebangsaan Malaysia*.

LAMPIRAN

LAMPIRAN A : BORANG PENDAFTARAN PROJEK

LAMPIRAN B : CARTA GANTT PROJEK PELAJAR

LAMPIRAN C : BORANG PERMOHONAN PERTUKARAN TAJUK PROJEK

LAMPIRAN D : BORANG PERMOHONAN MENGGUNAKAN KEMUDAHAN MAKMAL/ BENGKEL

LAMPIRAN E : CONTOH SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI

LAMPIRAN F : CONTOH RUBRIK PENILAIAN

LAMPIRAN G : BUKU LOG

- Lampiran G-1 : Buku Log Projek
- Lampiran G-2 : Laporan Kemajuan Projek Pelajar *(Projek di Industri WBL)*

LAMPIRAN H : FORMAT UMUM LAPORAN AKHIR

- Lampiran H-1 : Halaman Muka Hadapan
- Lampiran H-2 : Halaman Tajuk
- Lampiran H-3 : Halaman Perakuan Keaslian
- Lampiran H-4 : Halaman Penghargaan
- Lampiran H-5 : Halaman Abstrak
- Lampiran H-6 : Halaman Senarai Kandungan
- Lampiran H-7 : Halaman Senarai Jadual
- Lampiran H-8 : Halaman Senarai Rajah
- Lampiran H-9 : Halaman Senarai Simbol
- Lampiran H-10 : Halaman Senarai Singkatan
- Lampiran H-11 : Format Penulisan Pada Awal Bab
- Lampiran H-12 : Format Penomboran Jadual dan Rajah
- Lampiran H-13 : Format Halaman Rujukan
- Lampiran H-14 : Halaman Lampiran

LAMPIRAN I : AKUAN KEASLIAN DAN HAK MILIK

LAMPIRAN J : BORANG INVENTORI PROJEK PELAJAR

LAMPIRAN K : TEMPLAT POSTER PERTANDINGAN INOVASI PROJEK PELAJAR

LAMPIRAN L : PANDUAN PENGENDALIAN PEMANTAUAN DAN PENILAIAN PROJEK SECARA DALAM TALIAN

LAMPIRAN A

BORANG PENDAFTARAN PROJEK

LAMPIRAN A

BORANG PENDAFTARAN PROJEK

AHLI KUMPULAN			
Nama	**No. Pendaftaran**	**Kelas**	**No. Tel.**
1.			
2.			
3.			
4.			

MAKLUMAT PROJEK		
A. CADANGAN TAJUK		
B. KETERANGAN PROJEK	**1**	**Pernyataan Masalah:** (i). (ii). (iii).
	2	**Objektif Projek/Kajian:** (i). (ii). (iii).
	3	**Skop Projek/Kajian:**
	4	**Lampiran Lakaran Projek dan Carta Alir Pelaksanaan Projek *(jika perlu)***
NAMA PENYELIA PROJEK		
TANDATANGAN PENYELIA PROJEK		
TARIKH		

LAMPIRAN B

CARTA GANTT
PROJEK PELAJAR

LAMPIRAN B

CARTA GANTT PROJEK PELAJAR

SESI :
JABATAN :
KURSUS/ KOD :

MINGGU/ AKTIVITI PROJEK	STATUS	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16
	R																
	L																
	R																
	L																
	R																
	L																
	R																
	L																
	R																
	L																

Nota:
R: Tarikh rancang
L: Tarikh laksana

* Minggu Aktiviti Carta Gantt perlu disesuaikan mengikut kursus Projek dan program pengajian

LAMPIRAN C

BORANG PERMOHONAN PERTUKARAN TAJUK PROJEK

LAMPIRAN C

BORANG PERMOHONAN PERTUKARAN TAJUK PROJEK

AHLI KUMPULAN				
Bil	**Nama Pelajar**	**No. Pendaftaran**	**No. Telefon**	**Kelas**
1				
2				
3				
4				

Tajuk Asal	
Tajuk Baharu	
Sebab Pertukaran Tajuk	

Tarikh: ……..

(Tandatangan Pelajar)

Nama :

Sokongan Penyelia Projek:

Saya (menyokong / tidak menyokong)* permohonan pertukaran tajuk projek pelajar diatas.

Ulasan :

.....

.....

Tarikh: ……..

(Tandatangan Penyelia)

Nama:

Cop:

Kelulusan Penyelaras Kursus Projek:

Permohonan pertukaran tajuk projek ini (diluluskan / tidak diluluskan). Ulasan :

.....

.....

Tarikh: ……..

(Tandatangan Penyelaras)

Nama:

Cop:

LAMPIRAN D

BORANG PERMOHONAN PENGGUNAAN KEMUDAHAN MAKMAL/BENGKEL

LAMPIRAN D

BORANG PERMOHONAN
PENGGUNAAN KEMUDAHAN MAKMAL/BENGKEL

Makmal / Bengkel: ……
(Selain Bengkel Projek)

Bil	Nama Pelajar	No. Pendaftaran	Tarikh	Masa
1				
2				
3				
4				

SENARAI PERALATAN/BAHAN YANG DIPERLUKAN

Bil	Item	Unit	Tandatangan Penerima	Tandatangan Pemulangan	Catatan

Sokongan Penyelia Projek

Saya dengan ini mengesahkan bahawa permohonan ini disokong dan keselamatan pelajar di makmal/bengkel adalah di bawah tanggungjawab saya.

.....
(Tandatangan Penyelia)
Nama :
Tarikh :

Ulasan Penyelaras Makmal/Bengkel

Permohonan ini diluluskan/tidak diluluskan.

.....
(Tandatangan Penyelaras Makmal/Bengkel)
Nama :
Tarikh :

LAMPIRAN E

CONTOH SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI

LAMPIRAN E

CONTOH SURAT MOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI

Rujukan kami:
Tarikh:

NAMA SYARIKAT/ ORGANISASI

Tuan,

MEMOHON KHIDMAT KEPAKARAN DAN KERJASAMA INDUSTRI BAGI PROJEK PELAJAR SEMESTER ..... (KURSUS ..... , PROGRAM ……)

Adalah dimaklumkan bahawa pelajar-pelajar berkenaan adalah pelajar yang berdaftar di Jabatan ……....., Politeknik.....

Nama	No. Pendaftaran	No. KP	No. Telefon	E-Mel
1.				
2.				
3.				
4.				

2. Bagi memenuhi syarat penganugerahan Diploma....., pelajar hendaklah melaksanakan kajian dan menghasilkan projek selari dengan keperluan kursus .....

3. Sehubungan dengan itu, saya mewakili pihak politeknik ingin memohon kepakaran dan kerjasama daripada pihak tuan dalam membantu pelajar menyiapkan projek ini. Untuk sebarang pertanyaan, pihak tuan boleh menghubungi Penyelia Projek yang bertanggungjawab iaitu ..... di talian .....

4. Kerjasama dan sokongan yang diberikan oleh pihak tuan didahului dengan ucapan ribuan terima kasih.

Sekian.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,

……
Ketua Jabatan
Jabatan .....
b.p Pengarah
Politeknik ……..

LAMPIRAN F

CONTOH
RUBRIK PENILAIAN

LAMPIRAN F

Rubric for Involvement Evaluation

Use the following criteria as the basis for evaluating involvement of the student in implementing the project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Attendance	Student unattendance is<10%				/ 5
Involvement	Student is involved in 90% of project activities	Student is involved < 40% of project activities.	Student is involved < 90% of project activities.	Student is involved > 90% of project activities.	/ 5
	Effort	Did little, almost no work or did all the work. Did not support team members.	Did average amount of work, but could have done more. Support team members, but could helped others more.	Did fair share of work. Supported others in their share.	/ 5
	Contribution to Discussions and Decision	Make little contribution to team discussions and decision. Contribution was of poor quality.	Make average contributions to team discussions and decision. Contribution was of average quality.	Contribution beyond average to the team discussions and decision. Contribution was of high quality.	/ 5
	Team Spirit	Removed from commitment to the team effort, or over bearing and inconsiderate of team members.	Respected team members, considerate and cooperative, more than half of the time.	Exceptionally helpful, respectful and considerate of other team members.	/ 5
	Dependability	Unreliable, skipped many meeting or arrived late. Generally poor prepared.	Dependable, attended most team meeting, generally punctual prepared more than half of the time.	Exceptionally dependable, always attended meeting on time. Fully prepared.	/ 5

CONTOH

LAMPIRAN F

Rubric for Log Book Evaluation

Use the following criteria as the basis for evaluating Log Book of student's project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Log Book	Project Activity Plan/ *Gantt* Chart	Did not perform project activity plan.	Perform planning for project activities using the *Gantt* Chart.	Did not perform project activity plan.	/ 5
	Weekly notes on project activities	Did not record all weekly project's activities in logbook	Record all weekly project's activities in logbook.	Record completely all weekly project's activities in logbook.	/ 5
	Continuous improvement based on feedback by project supervisor	Did not perform continuous improvement based on feedback by project supervisor.	Perform continuous improvement based on feedback by project supervisor.	Perform continuous improvement based on feedback by project supervisor, complete with a comprehensive result and report.	/ 5
	Verification by project supervisor every 2weeks	Students did not showed logbook for verification as scheduled.	Students showed logbook for verification not as scheduled.	Students showed logbook for verification as scheduled.	/ 5

CONTOH

LAMPIRAN F

Rubric for Presentation Evaluation

Use the following criteria as the basis for evaluating student's project presentation.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Presentation	Content related to implemented project	• Presentation contained little to no valuable material and not related to implemented project.	• Presentation had a good amount of material, benefited and related to implemented project	• Presentation had an exceptional amount of valuable material and was extremely beneficial and related to implemented project.	/ 5
	Use of visual aids	• Student uses superfluous visual aids or no visual aids.	• Student occasionally uses visual aids that rarely support the presentation.	• Student's visual aids explain and reinforce the presentation.	/ 5
	Communication skill	• No effort to make eye contact with audience, merely reads notes. • No enthusiasm. • Audience cannot follow presentation.	• Occasional but unsustained eye contact with audience. • Monotonous tone and/or low volume disengages audience.	• Presenter does not merely reads, but presents making constant eye contact with the audience. • Body language reflects comfort and enthusiasm interacting with audience. • Appropriate volume of voice. • Audience can follow easily.	/ 5
	Teamwork	• Removed from commitment to the team effort, or over bearing and inconsiderate of team members. • Only one of the members takes over and leads the group. There is no coordination among team member.	• Respected team members, considerate and cooperative, more than half of the time. • There is good balance in the amount of time and content covered by each member. But still have some problems of coordination.	• Exceptionally helpful, respectful and considerate of other team members. • There is good balance in the amount of time and content covered by each member. It is evident that members have rehearsed or at least are coordinated in the delivery.	/ 5

LAMPIRAN F

Rubric for Final Report Evaluation

Use the following criteria as the basis for evaluating Final Report of student's project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Final Report	Follow standard format (table of contents)	• Work fails to follow required report format. • Sequence of information is difficult to follow. No apparent structure or continuity. • Lack of appropriate sections or many items are in the wrong section.	• Report format is generally consistent. • Information is presented in a logical manner, which is easily followed. • Some information is in the wrong section.	• Report format is consistent throughout including heading styles, fonts, margins, white space, etc. • Information is presented in a logical, interesting way, which is easy to follow. • All information is located in the appropriate section.	/ 5
	Abstract/ introduction/ acknowledgement	• Abstract is somewhat vague and/or wordy. • It is somewhat difficult to determine the objective, approach, key results and/or conclusions. • Introduction is vague. It does not support the research and is irrelevant to the area studied. • Acknowledgements and bibliography are inaccurate and incomplete.	• Abstract contains statements of objective, approach, key results, and conclusions. • Introduction is fairly thorough. It somewhat supports the research and is somewhat relevant to the area studied. • Acknowledgements and bibliography are generally thorough. But some minor omissions are noted.	• Abstract consists of concise statements of objective, approach, key results and conclusions. • Introduction is detailed and thorough. It clearly supports the project and is clearly relevant to the area studied. • Acknowledgements and bibliography are thorough and complete.	/ 5

CONTOH

LAMPIRAN F

Aspects	Keypoints	Scaling			Score
		1-2 (Poor)	3-4 (Moderate)	5 (Excellent)	
Final Report	Include graphics/ tables/ diagrams	• Graphics, tables, charts, diagrams, pictures, and/or models are unrelated or offer little support of the work.	• Graphics, tables, charts, diagrams, pictures, and/or models are related. • There is some mislabeling of graphics or design mistakes (e.g., a picture is confusing because it doesn't have a caption).	• The work is well supported by carefully illustrated and useful tables, charts, diagrams, pictures, and/or a model-all properly labeled and captioned.	/ 5
	Clear explanation/ description of the contents	• Explanation and description are incorrect and/or irrelevant; based on minimal research. • Content is minimal OR there are several factual error.	• Explanation and description are complete, accurate, and relevant information; based on adequate research. • Includes essential knowledge about the topic. Knowledge of the text appears to be good.	• Explanation and description are complete, accurate, and relevant information; based firmly on extensive and careful research. • Covers topic indepth with details and examples. Knowledge of the text is excellent.	/ 5
	Include costing/ bill of materials	• Total cost from bill of materials has not been listed and calculated.	• Total cost from bill of materials has been listed and calculated. Item description, quantity, price per unit, and total price have been specified.	• Total cost from bill of materials has been listed and calculated. • Item description, quantity, price per unit, total price, and vendor name have all been specified.	/ 5
	Conclusion/ Impact of Project/ Project further work	• Concluding paragraph and discussion is not apparent.	• Conclusion is partially clear, effective and enhances the impact of the report. • Reflective thinking gives a good overall picture of the project.	• Conclusion is clear, effective and enhances the impact of the report. • Includes suggestions for how the project could be improved and has ideas for further study.	/ 5

CONTOH

LAMPIRAN F

Rubric for Model Evaluation

Use the following criteria as the basis for evaluating model for student's project.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Content and Concept	The project offers a solution to a problem.	• The project does not offer a solution to a problem.	• The project offers a solution to a problem.	• The project offers the ultimate/ final solution to a problem and improve the efficiency.	/ 5
	The project sources are cited, reliable and replicable.	• The project sources are not cited, reliable and replicable.	• The project sources are cited at least 4 scholarly sources in the field; sources cited were authoritative and relevant to the project.	• The project sources are cited at least more than 4 scholarly sources in the field; sources cited were authoritative and relevant to the project.	/ 5
	The project aligns with the curriculum & standards.	• The project does not align with the curriculum & standards. • The project did not challenge the students to perform much research.	• The project aligns with the curriculum & standards. • The project contains some research but mostly involves technical information taught within the scope of the curriculum.	• The project fulfills the requirement of with the curriculum &meets standards. • A significant portion of the project involves technical information outside the scope of the curriculum.	/ 5
Casing and Layout	The model size is appropriate.	• The model size is inappropriate.	• The model size is appropriate and meets a few criteria of design specification.	• The model size is appropriate and meets the original design specification.	/ 5
	Attractive control panel layout and labeling.	• Unattractive control panel layout and labeling.	• Attractive control panel layout and labeling.	• Control panel has an attractive and creative design, including layout and labeling which makes it easy for handling and operating.	/ 5

CONTOH

LAMPIRAN F

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Casing and Layout	Use good quality material.	• Do not use good quality material.	• Use good quality material.	• Use good quality material. • The material is at economical cost but it still offer high reliability.	/ 5
	Neat wiring layout and finishes.	• Wiring layout and finishing are disorder and messy.	• The wiring layout and finishing looks neat and organized.	• Using proper system, specific tool or component to make wiring and layout looks neat and organized. • The arrangement will make the future task such as troubleshooting easier.	/ 5
Functional	The project works well.	• The project does not working at all.	• The project works well but not fully hundred percent as expected. • There is some problem with reliability.	• The project works well, hundred percent as expected. • Fulfill the design specification. • The project is reliability.	/ 5
	Good safety elements and procedure.	• No safety consideration in the design. • There is an evident showing the project is not safe.	• Consider safety aspect in the project design. • The project is safe.	• The project is proven to be safe and meets requirement of safety standard such as electrical safety standard.	/ 5
	Clear operating instruction manual.	• No operating instruction manual.	• Clear operating instruction manual. • The instruction is easy to understand and follow.	• Attractive, creative and clear operating instruction manual. • The operating instruction manual looks created by profesional designer.	/ 5

CONTOH

LAMPIRAN F

Rubric for Innovation and Creativity Evaluation

Use the following criteria as the basis for evaluating student's project presentation.

Aspects	Keypoints	Scaling			Score
		1 - 2 (Poor)	3 - 4 (Moderate)	5 (Excellent)	
Innovation/ Creativity	Originality	Project contained little to no valuable originality.	Project had a good valuable originality.	Project had an exceptional amount of valuable originality and extremely beneficial.	/ 5
	Adaptation/Enhancement/ modification	Creativity of project is not apparent.	Creativity of project is partially clear, effective and enhances the impact.	Creativity of project is clear, effective and enhances the impact.	/ 5
	Efficiency	No efficiency in term of time, cost, productivity, application and replicability.	Partially efficiency in term of time, cost, productivity, application and replicability.	Efficiency is clear in term of time, cost, productivity, application and replicability.	/ 5

CONTOH

LAMPIRAN G

BUKU LOG PROJEK

POLITEKNIK .....

BUKU LOG PROJEK

PROGRAM: _____

NAMA PELAJAR:	
NO. PENDAFTARAN:	
SESI:	

NOTA:

- Dokumen ini merupakan cadangan Buku Log yang boleh diguna pakai oleh program pengajian di politeknik.
- Namun, ia bergantung kepada keperluan kurikulum program pengajian yang berkenaaan dan boleh diubahsuai mengikut kesesuaian yang diperlukan.

< NAMA JABATAN >
< KURSUS >
< SESI >

BUKU LOG PROJEK

MAKLUMAT PELAJAR			
Nama			
No. Pendaftaran			
No. Telefon		**E-Mel**	
Alamat Semasa			

AHLI KUMPULAN	
Nama	**No. Pendaftaran**
1.	1.
2.	2.
3.	3.
4.	4.

MAKLUMAT PROJEK	
Tajuk Projek/Kajian:	
Penyelia Projek:	

KANDUNGAN

Bil.	Tajuk	Muka Surat
1.	Pengenalan	x
2.	Panduan Penggunaan Buku Log	x
3.	Borang Pendaftaran Projek (Lampiran A)	x
4.	Muka Hadapan Buku Log Projek	x
5	Isi Kandungan Buku Log Projek	x
6	Laporan Aktiviti Mingguan	x
7	Carta Gantt Projek (Lampiran B) *(nyatakan aktiviti secara terperinci)*	x

PANDUAN PENGGUNAAN BUKU LOG

Arahan dalam penggunaan Buku Log:

(1). Buku Log perlu diserahkan kepada Penyelia Projek untuk dinilai dan disahkan **sekurang-kurangnya seminggu sekali;**

(2). Buku Log perlu dibawa bersama setiap kali mengadakan perjumpaan dan perbincangan bersama Penyelia Projek untuk tujuan pengesahan; dan

(3). Buku Log perlu diserahkan kepada Penyelia Projek bersama Laporan Akhir Projek untuk penilaian.

FORMAT BUKU LOG

Maklumat yang perlu dimasukkan di dalam Buku Log aktiviti pelaksanaan projek pelajar:

(1). Pelajar perlu mencatat aktiviti dan tugasan sepanjang minggu;

(2). Pelajar perlu memperincikan segala perancangan di ruangan Laporan Kemajuan Projek agar selari dengan perancangan yang telah dinyatakan di dalam carta Gantt;

(3). Pelajar perlu menyatakan pencapaian sebenar atau status projek terkini pada ruangan yang disediakan;

(4). Bahagian Cadangan Tugasan perlu diisi oleh pelajar dengan menyatakan cadangan yang berkaitan sebagai langkah penambahbaikan kepada projek; dan

(5). Penyelia Projek perlu memberi komen atau maklum balas pada setiap tugasan yang telah dijalankan oleh pelajar.

LAMPIRAN G-1

LAPORAN AKTIVITI MINGGUAN

Minggu:	**Tarikh:**	**Masa:**
Pelajar perlu kemaskini laporan setiap minggu dan sertakan lampiran berkaitan sebagai sokongan.		
Laporan Kemajuan Projek		
Cadangan Tugasan (pertemuan seterusnya)		
Maklum Balas Penyelia Projek: **Disahkan oleh:** **……** (Tandatangan Penyelia Projek) Tarikh:		

REKOD KEHADIRAN SESI PEMANTAUAN
MINGGU 1 – MINGGU 4

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 1				Minggu 2				Minggu 3				Minggu 4			
Tandatangan Penyelia Projek																		

REKOD KEHADIRAN SESI PENYELIAAN
MINGGU 5 – MINGGU 8

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 5				Minggu 6				Minggu 7				Minggu 8			
Tandatangan Penyelia																		

REKOD KEHADIRAN SESI PENYELIAAN
MINGGU 9 – MINGGU 12

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 9				Minggu 10				Minggu 11				Minggu 12			
Tandatangan Penyelia																		

REKOD KEHADIRAN SESI PENYELIAAN
MINGGU 13 – MINGGU 16

Politeknik : _____
Program : _____
Kursus : _____
Kelas : _____
Penyelia Projek : _____
Pensyarah Kursus : _____

Bil	No. Pendaftaran	Nama	Minggu 13				Minggu 14				Minggu 15				Minggu 16			
Tandatangan Penyelia																		

LAMPIRAN G-2

FORMAT LAPORAN KEMAJUAN PROJEK PELAJAR

LAPORAN KEMAJUAN PROJEK PELAJAR

Untuk membolehkan pelaksanaan pemantauan secara berkala terhadap kemajuan pelajar dalam menjalankan **Projek** semasa latihan WBL, pelajar **MESTI** mengemukakan:

Carta Perancangan Projek kepada penyelia masing-masing di politeknik selewat-lewatnya pada minggu ke-2 semester; dan

Laporan Pemantauan Kemajuan ini perlu dimuat naik ke *Google Drive* dll sekurang-kurangnya pada setiap **DUA (2)** minggu. Penyelia pelajar dikehendaki untuk melengkapkan dan memberi maklum balas sebagai tujuan perekodan pelaksanaan pemantauan kemajuan setiap pelajar dibawah penyeliaan masing-masing (Bahagian II).

To enable better/periodic monitoring of students' progress in carrying out their final year projects, students MUST submit:

*(i). a **Project Planning Chart** to their supervisor at polytechnic by Week 2 of semester, and*

*(ii). a **Progress Report** uploaded eg: (Google Drive etc.) to supervisor at least every two (2) weeks. Student's supervisor is required to complete a report and provide feedbacks for his/her student progress (Part II).*

BAHAGIAN I: (Untuk dilengkapkan oleh PELAJAR dan dihantar kepada Penyelia Projek Akhir pelajar)
PART I:** **(To be completed by the STUDENT and submittted to the supervisor)

Nama Pelajar *(Name of Student):* _____ No. Pendaftaran *(Student ID):* _____

Kod Projek *(Project Code):* _____

Tajuk Projek *(Project Title):* _____

Nama Penyelia *(Name of Supervisor):* _____

Bilangan Perjumpaan (kali ke berapa dalam semester): 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 *(potong yang tidak berkaitan)* dan tempoh Laporan Kemajuan: dari _____ hingga _____.

This report is the 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, or 9th (delete where appropriate) student progress report and covers the reporting period from: _____ to _____.

Page: 1/3

LAPORAN KEMAJUAN PROJEK PELAJAR

Garis Kasar Kemajuan Projek

Bab yang telah siap dan Kemajuan ***(lampirkan Rancangan Kerja Asal)***
Proportion of original work plan completed (please attach the original work plan)

_____
_____
_____
_____
_____
_____
_____

Kekangan/Permasalahan ***(jika ada)*** **dan Cadangan yang bekaitan**
Constraints/Problems/Advantages/Benefits (if any) and Suggestions

_____
_____
_____
_____
_____
_____

Rancangan Kerja Seterusnya ***(lampirkan Rancangan Kerja yang dirancang)***
Work Plan for the next ***(attach the work plan)***

_____
_____
_____
_____
_____
_____

Tandatangan Pelajar **Tarikh:**
Signature of student: _____ *Date:* _____

Page: 2/3

LAPORAN KEMAJUAN PROJEK PELAJAR

BAHAGIAN II: (Untuk dilengkapkan oleh PENYELIA PROJEK pelajar)
***PART II:** (To be completed by Student's Supervisor)*

Nama Penyelia:
Supervisor's Name: _____

Maklum Balas (Komen)
Feedback (Comments):

_____
_____
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_____

Tarikh
Date: _____

Tandatangan (Penyelia)
Signature (Supervisor): _____

Page: 3/3

LAMPIRAN H

FORMAT UMUM
LAPORAN AKHIR PROJEK

Lampiran H-1
FORMAT HALAMAN MUKA HADAPAN

2.5 cm

5 cm dari atas

POLITEKNIK UNGKU OMAR

3 cm

(18 point, bold, uppercase)

KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

3.8 cm

2.5 cm

(18 point, bold, uppercase, single spacing)

ALI BIN ABU SHAH

(18 point, bold, 1.5 spacing)

(01DKA17F1016)

JABATAN KEJURUTERAAN AWAM

(18 point, bold)

3 cm

JUN 2020

(18 point, bold, uppercase. Bulan adalah mengikut bulan kelulusan *binding)*

5 cm dari bawah

2.5 cm

Lampiran H-2
FORMAT HALAMAN TAJUK

2.5 cm

5 cm dari atas

POLITEKNIK UNGKU OMAR

(18 point, bold, uppercase)

3 cm

KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

(18 point, uppercase, single spacing)

(14 point, bold, 1.5 spacing)

ALI BIN ABU SHAH
(01DKA17F1016)

3.8 cm

2.5 cm

Laporan ini dikemukakan kepada Jabatan Kejuruteraan Awam sebagai memenuhi sebahagian syarat penganugerahan Diploma Kejuruteraan Awam

(14 point, single Spacing)

2 cm

JABATAN KEJURUTERAAN AWAM

(18 point, bold)

2 cm

JUN 2020 ← *(18 point, bold, uppercase.* Bulan adalah mengikut bulan kelulusan *binding)*

5 cm dari bawah

2.5 cm

2.5 cm

Lampiran H-3
FORMAT HALAMAN PERAKUAN KEASLIAN

2.5 cm

AKUAN KEASLIAN DAN HAK MILIK ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

1. Saya, **ALI BIN ABU SHAH (NO KP: 991010-10-1001)** adalah pelajar **Diploma Kejuruteraan Awam, Politeknik Ungku Omar**, yang beralamat di **Jalan Raja Musa Mahadi, 31400 Ipoh, Perak**.
   (Selepas ini dirujuk sebagai 'Politeknik tersebut').

3.8 cm

2.5 cm

2. Saya mengakui bahawa 'Projek tersebut di atas' dan harta intelek yang ada di dalamnya adalah hasil karya/ reka cipta asli saya tanpa mengambil atau meniru mana-mana harta intelek daripada pihak-pihak lain.

3. Saya bersetuju melepaskan pemilikan harta intelek 'Projek tersebut' kepada 'Politeknik tersebut' bagi memenuhi keperluan untuk penanugerahan **Diploma Kejuruteraan Awam** kepada saya.

Diperbuat dan dengan sebenar-benarnya diakui)
oleh yang tersebut;)
ALI BIN ABU SHAH) …….…….
(No. Kad Pengenalan: 991010-10-1001)) ALI BIN ABU SHAH

Di hadapan saya, ARIF BIN BIDIN (730820-09-5313)) ……..……..…….
sebagai Penyelia Projek pada tarikh: ……..…….) ARIF BIN BIDIN

2.5 cm

Lampiran H-4
FORMAT HALAMAN PENGHARGAAN

2.5 cm

2.5 cm

PENGHARGAAN ← (*14 point, bold, uppercase)*

2 x 1.5 *spacing*

Penulis ingin merakamkan penghargaan ikhlas kepada penyelia projek, diatas bimbingan dan perbincangan yang diberikan sepanjang tempoh projek ini dilaksanakan.

Penghargaan ini juga diberikan kepada sesiapa sahaja yang samaada secara langsung atau tidak langsung membantu dalam penghasilan projek ini.

3.8 cm

2.5 cm

Nota:
Hanya satu muka surat sahaja

2.5 cm

2.5 cm

Lampiran H-5
FORMAT HALAMAN ABSTRAK

2.5 cm

ABSTRAK ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

Projek ini diaplikasikan daripada pemerhatian berdasarkan cara manual yang digunakan sekarang iaitu mencucuk pelbagai makanan. Objektif projek ini dihasilkan adalah untuk merekabentuk sebuah alat yang berupaya mencucuk makanan untuk kegunaan industri kecil atau desa dalam sektor makanan. Tambahan lagi, terdapat beberapa skop kajian yang telah ditetapkan dalam projek ini iaitu, menghasilkan 10 cucuk makanan pada satu masa, mereka alat yang berfungsi tanpa sumber kuasa dan mereka alat yang mampu menyaingi teknik manual sedia ada. Kesemua ini ditetapkan bagi menyelesaikan beberapa masalah yang timbul dengan penggunaan kaedah sedia ada antaranya, kesukaran untuk mencucuk makanan yang licin dan banyak menggunakan tangan dan faktor keselamatan kurang kerana kecederaan boleh diakibatkan oleh mata lidi pencucuk. Bahan bagi projek ini juga perlu mempunyai ciri - ciri khas iaitu tidak berkarat dan tidak menjejaskan makanan, berdasarkan kajian literatur yang dijalankan derlin dan aluminium adalah yang paling sesuai untuk projek ini. Manakala bagi proses pembentukkan komponen, kajian metodologi digunakan bagi merancang proses penghasilan projek dengan menggunakan carta alir sebagai panduan untuk perancangan penghasilan dan pengujian projek. Hasilnya keseluruhan projek ini berjaya dihasilkan dengan kadar purata penjimatan masa berbanding kaedah tradisional sebanyak 36.67%. Berdasarkan keputusan ini, hasil analisa dan perbincangan yang telah dijalankan, dapat dirumuskan bahawa Alat Pencucuk Makanan ini telah mencapai objektif yang telah dibincangkan. Selain itu, alat ini juga terbukti mampu menjimatkan masa berbanding cara tradisional.

(satu perenggan sahaja;12 point, Times New Roman)

3.8 cm

2.5 cm

(12 point, Times New Roman, 1 spacing)

2.5 cm

Lampiran H-6
FORMAT HALAMAN SENARAI KANDUNGAN

2.5 cm

2.5 cm

SENARAI KANDUNGAN ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

BAB	PERKARA	MUKA SURAT
	AKUAN KEASLIAN DAN HAK MILIK	ii
	PENGHARGAAN	iii
	ABSTRAK	iv
	ABSTRACT	v
	KANDUNGAN	vi
	SENARAI JADUAL	vii
	SENARAI RAJAH	viii
	SENARAI SIMBOL	x
	SENARAI SINGKATAN	xi
1	PENGENALAN	
	1.1 Pendahuluan	1
	1.2 Latar Belakang Kajian	1
	1.3 Penyataan Masalah	2
	1.4 Objektif Kajian	2
	1.5 Persoalan Kajian	2
	1.6 Skop Kajian	3
	1.7 Kepentingan Kajian	3
	1.8 Definisi Operasi/Istilah	3
	1.9 Rumusan	4
2	KAJIAN LITERATUR / LAPANGAN	
	2.1 Pendahuluan	5
	2.2 Kajian Terdahulu / Ulasan / Siasatan	7
	2.3 Rumusan	14
3	METODOLOGI / REKA BENTUK	
	3.1 Pendahuluan	15
	3.2 Rekabentuk Kajian/Projek	16
	3.2.1 Pensampelan/Kaedah/Prosedur/Teknik Penghasilan Projek	18
	3.2.2 Kaedah Pengumpulan Data / Bahan dan Peralatan	21
	3.2.3 Kaedah Analisis Data	23
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4	DAPATAN KAJIAN DAN PERBINCANGAN	
	4.1 Pendahuluan	25
	4.2 Dapatan Kajian	26
	4.3 Perbincangan	31
	4.4 Rumusan	32
5	KESIMPULAN DAN CADANGAN	
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	5.2 Kesimpulan	34
	5.3 Cadangan	35
	5.4 Limitasi Kajian	36
	5.5 Rumusan	37
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	LAMPIRAN	43

(12 point, bold, uppercase)

2 x 1.5 *spacing*

(12 point, bold, uppercase)

(Capitalise each word)

3.8 cm

2.5 cm

2.5 cm

2.5 cm

Lampiran H-7
FORMAT HALAMAN SENARAI JADUAL

2.5 cm

SENARAI JADUAL ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

NO. JADUAL	TAJUK	MUKA SURAT
3.1	Menunjukkan jadual matrik pemilihan rekabentuk	26
4.1	Keputusan Ujian	35

3.8 cm

2.5 cm

Nota:

- Line spacing 1.5
- Left Justify
- No.Jadual mengikut BAB

2.5 cm

2.5 cm

Lampiran H-8
FORMAT HALAMAN SENARAI RAJAH

2.5 cm

SENARAI RAJAH ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

NO. RAJAH	TAJUK	MUKA SURAT
2.1	Gambar acuan yang digunakan pada mesin KSE-ST28, buatan Singapura	9
2.2	Gambar rekabentuk alat pencucuk makanan	13
3.1	Tiang penyokong – L	27
3.2	Kerja pemasangan penekan	37

3.8 cm

2.5 cm

Nota:

- No Rajah mengikut BAB

2.5 cm

Lampiran H-9
FORMAT HALAMAN SENARAI SIMBOL

2.5 cm

2.5 cm

SENARAI SIMBOL ← *(14 point, bold, uppercase)*

2 x 1.5 *spacing*

Simbol	
f	Frekuensi
m	Jisim
P	Tekanan
r	Jejari

3.8 cm

2.5 cm

Nota:

- Susun simbol mengikut susunan huruf/alphabet

2.5 cm

Lampiran H-10
FORMAT HALAMAN SENARAI SINGKATAN

2.5 cm

2.5 cm

SENARAI SINGKATAN

2 x 1.5 *spacing*

MPOB	Malaysian Palm Oil Board
FAMA	The Federal Agriculture Marketing Authority

3.8 cm

2.5 cm

Nota:

- Susun singkatan berdasarkan susunan huruf/alphabet

2.5 cm

Lampiran H-11
FORMAT PENULISAN PADA AWAL BAB

2.5 cm

2.5 cm

BAB 1

PENGENALAN

(Chapter Heading Center, bold, upper case, 14 point, 1.5 spacing)

(Numbering start at 1.1 and not 1.0)

2 x 1.5 *spacing*

1.1 PENDAHULUAN ← *(Main Heading: flushed left, bold, upper case, 12 point)*

1 x 1.5 *spacing*

(Indent first line for each paragraph -0.5")

Motor arus terus telah menjadi satu komponen yang penting untuk aplikasi dalam julat kuasa dan kelajuan yang tinggi. Kawalan motor arus terus yang mudah dan prestasi yang baik akan menjamin motor arus terus untuk digunakan secara meluas pada masa depan. Projek ini tertumpu kepada rekaaan satu sistem kawalan kelajuan motor arus terus dengan menggunakan pengawal mikro PIC 16F877A.

3.8 cm

2.5 cm

1 x 1.5 *spacing*

1.2 PEMODULATAN LEBAR DENYUT (PWM)

1 x 1.5 spacing

Teknik *Pulse Width Modulation (PWM)* digunakan di mana isyarat ini dibekal oleh mikro pengawal. Pengawal mikro berperanan sebagai pengawal gandaan,

2.5 cm

2.5 cm

Lampiran H-12
FORMAT PENOMBORAN JADUAL DAN RAJAH

2.5 cm

1.2.1 Pemodulatan Lebar Denyut (Pwm)

(Sub Heading Flushed left, bold, capitalise each word, 12 point)

1 x 1.5 *spacing*

Teknik *Pulse Width Modulation (PWM)* digunakan di mana isyarat ini dibekal oleh mikro pengawal. Pengawal mikro berperanan sebagai pengawal gandaan, *P* di dalam projek ini. Isyarat *PWM* di tunjukkan seperti rajah 1.2 di bawah.

1 x 1.5spacing

(Indent first line for each paragraph -0.5")

Rajah 1.2: Pemodulatan Lebar Denyut

(11 point, single spacing)

1 x 1.5 *spacing*

1.2.2 Kelajuan Motor

1 x 1.5 *spacing*

Keputusan menunjukkan bahawa bacaan daripada pengekod optik yang dibina adalah boleh dipercayai seperti Jadual 1.1 berikut.

3.8 cm

2.5 cm

Jadual 1.1: Keputusan Bacaan Pengkod Optik

Sumber:

All table hide left and right line

Font size- minimum 9 point)

2.5 cm

2.5 cm

Lampiran H-13
FORMAT HALAMAN RUJUKAN (APA 5TH EDITION FORMAT)

2.5 cm

RUJUKAN ← *(Left align, bold, upper case, font 14)*

1 x 1.5 *spacing*

Abdul Rahim, A. H., Muhd Zaimi, A. M., Bachan, S. (2008). Causes of accidents at construction sites. *Malaysian Journal of Civil Engineering, 20(2):* 242 - 259.

Department of Finance and Administration. (2006). *Delivering Australian Government services: Managing multiple channels*. Canberra, Australia: Author.

Hibbeler, R.C. (2015). *Engineering Mechanics: Statics* (14th ed.). N Y: Prentice Hall.

Internet pioneer to oversee network redesign. (2007, May 28). *The Canberra Times*, p. 15.

Mathews, J., Berrett, D., Brillman, D. (2005, May 16). Other winning equations. *Newsweek, 145(20)*, 58-59.

Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

(Hanging Indent. Use a hanging indent for the entries longer than one line. Indent 1/2'' from the set margins, after the first line of each entry.)

(12 point, Times New Roman, and 1.5 spacing)

3.8 cm

2.5 cm

2.5 cm

Lampiran H-14
FORMAT HALAMAN LAMPIRAN

2.5 cm

2.5 cm

LAMPIRAN ← *(Uppercase, center, bold, font 14, single spacing)*

1 x 1.5 *spacing*

LAMPIRAN A	Soal Selidik
LAMPIRAN B	Senarai Responden
LAMPIRAN C	Surat Kebenaran Menjalankan Penyelidikan

(Capitalise each letter, bold, font 12)

3.8 cm

2.5 cm

2.5 cm

LAMPIRAN I

PERAKUAN KEASLIAN DAN HAK MILIK

LAMPIRAN I

AKUAN KEASLIAN DAN HAK MILIK

AKUAN KEASLIAN DAN HAK MILIK

TAJUK PROJEK:
KAJIAN REKABENTUK TEMPAT DUDUK KENDERAAN YANG MELIBATKAN FAKTOR-FAKTOR ERGONOMIK

1. Saya, **ALI BIN ABU SHAH (NO KP: 991010-10-1001)** adalah pelajar **Diploma Kejuruteraan Awam, Politeknik Ungku Omar**, yang beralamat di **Jalan Raja Musa Mahadi, 31400 Ipoh, Perak**. (Selepas ini dirujuk sebagai 'Politeknik tersebut').

2. Saya mengakui bahawa 'Projek tersebut di atas' dan harta intelek yang ada di dalamnya adalah hasil karya/ reka cipta asli saya tanpa mengambil atau meniru mana-mana harta intelek daripada pihak-pihak lain.

3. Saya bersetuju melepaskan pemilikan harta intelek 'Projek tersebut' kepada 'Politeknik tersebut' bagi memenuhi keperluan untuk penganugerahan **Diploma Kejuruteraan Awam** kepada saya.

Diperbuat dan dengan sebenar-benarnya diakui)
oleh yang tersebut;)
ALI BIN ABU SHAH) …….
(No. Kad Pengenalan: 991010-10-1001)) ALI BIN ABU SHAH

Di hadapan saya, ARIF BIN BIDIN (730820-09-5313)) …….
sebagai Penyelia Projek pada tarikh: ……..…….) ARIF BIN BIDIN

LAMPIRAN J

BORANG INVENTORI PROJEK PELAJAR

LAMPIRAN J

BORANG INVENTORI PROJEK PELAJAR

<table>
<tr><th>PERKARA</th><th>MAKLUMAT</th></tr>
<tr><td>Program:</td><td></td></tr>
<tr><td>Jabatan:</td><td></td></tr>
<tr><td>Semester/ Tahun:</td><td></td></tr>
<tr><td>Tajuk Kajian/Projek:</td><td></td></tr>
<tr><td>Jenis Kajian/Projek:</td><td></td></tr>
<tr><td>Kategori Kluster Penyelidikan:</td><td>Tanda “ / ” pada yang berkenaan:
<table>
<tr><td></td><td>Sains Tulen</td><td></td><td>Sains Sosial</td></tr>
<tr><td></td><td>Sains Gunaan</td><td></td><td>Sastera & Sastera Ikhtisas</td></tr>
<tr><td></td><td>Teknologi & Kejuruteraan</td><td></td><td>Warisan Alam & Budaya</td></tr>
<tr><td></td><td>Sains Kesihatan & Klinikal</td><td></td><td>ICT</td></tr>
</table></td></tr>
<tr><td>Ahli Kumpulan:</td><td>1. Nama:
No. Pendaftaran Pelajar:
2. Nama:
No. Pendaftaran Pelajar:
3. Nama:
No. Pendaftaran Pelajar:</td></tr>
<tr><td>Penyelia:</td><td>Nama:
No. Kad Pengenalan:</td></tr>
<tr><td>Penyelia Bersama:</td><td>1. Nama:
No. Kad Pengenalan:
2. Nama:
No. Kad Pengenalan:</td></tr>
<tr><td>Multi-Disiplin:</td><td></td></tr>
<tr><td>Kolaborasi: (Industri/Komuniti)</td><td>Nyatakan maklumat lengkap industri/komuniti yang terlibat dalam pembangunan projek berserta peranan dan sumbangan pihak industri.</td></tr>
<tr><td>Objektif Kajian/Projek:</td><td></td></tr>
</table>

PERKARA	MAKLUMAT
Skop Kajian/Projek:	
Penglibatan Pelajar: (merujuk kepada skop kajian/projek)	
Abstrak Kajian/Projek:	
Infografik Kajian/Projek:	*(Tampalkan gambar projek yang dihasilkan)*
Peringkat: *(sekiranya ada menyertai pertandingan)*	Jabatan/ Politeknik/ JPPKK/ Kebangsaan/ Antarabangsa
No. Pendaftaran Harta Intelek (*jika ada*)	

Disemak oleh: _____ Tandatangan Penyelaras Kursus Projek Nama dan Cop:	Disahkan oleh: _____ Tandatangan Penyelaras Projek Pelajar Jabatan Nama dan Cop:

Nota: *Borang ini perlu diisi oleh pelajar dan dihantar kepada Penyelaras Kursus Projek/Jabatan dalam bentuk salinan keras (hardcopy) dan salinan lembut (softcopy) (Borang LAMPIRAN J dan gambar hasil projek dalam format jpeg/bitmap) bersama Laporan Akhir dan hasil projek.*

LAMPIRAN K

TEMPLAT POSTER PERTANDINGAN INOVASI PROJEK PELAJAR

LAMPIRAN K

TEMPLAT POSTER PERTANDINGAN INOVASI PROJEK PELAJAR

INNOPLEN 2019

(Innovation, Product Launching & Entrepreneurship)

TAJUK INOVASI: REMPAH LARUT

INSTITUSI: POLITEKNIK SULTAN ABDUL HALIM MU'ADZAM SHAH, JITRA KEDAH

PESERTA	NO. KAD PENGENALAN
1. NOR HIZWANA BT MISROM	970921106246
2. NURUL MASTURA BT ABDUL GHANI	981118026224
3. NURUL ATHIRAH ANATI BT ZAKARIA	980911025724
4. NURUL BASYIRAH BT KAMARUZZAMAN	980616085548
5. NOR ARNI ASYIKIN BT MOHD ROHIMI	981108025762

Abstrak

Tapiocca Group Enterprise ini dihasilkan adalah untuk memperlihatkan secara menyeluruh dan terperinci berkenaan produk baru yang dikeluarkan oleh syarikat untuk mencapai matlamat penyediaan makanan yang lengkap dengan nutrisi dan kalori serta dalam masa yang sama dapat memelihara alam sekitar bagi memenuhi keperluan pelanggan dan masyarakat untuk menjimatkan masa apabila menggunakan produk ini.

Syarikat Tapiocca Group Enterprise mengeluarkan produk makanan yang dapat menjimatkan dan memudahkan pelanggan atau lebih dikenali sebagai 'Rempah Larut'. Idea pembuatan produk ini mula dicetuskan apabila mendapat persetujuan bersama dengan melihat adanya peluang untuk menembusi pasaran rempah yang wujud di Malaysia ini dan juga setelah mengetahui masalah pelanggan iaitu kekangan masa untuk memasak dengan bahan yang melambatkan masa mereka bagi melakukan sesuatu pekerjaan yang lain.

Penyataan Masalah

- Pelanggan yang kekangan masa untuk memasak dengan bahan yang melambatkan masa mereka untuk melakukan sesuatu pekerjaan yang lain.
- Kurang Keyakinan oleh pengguna dalam pengeluaran produk baru
- Sukar untuk mendapatkan bahan secara berkala
- Memudaratkan kesihatan pengguna sekiranya menggunakan plastik yang mempunyai bahan kimia

Objektif

1. Menjadi pengeluar perencah makanan yang menggunakan bahan semula jadi pertama di Malaysia.
2. Mensasarkan keuntungan sebanyak 80% dalam masa 3 tahun pertama
3. Mencapai unit jualan sebanyak 100 000 dalam masa setahun
4. Memberi kesedaran tentang alternatif baru terhadap pembungkusan makanan kepada pelanggan.
5. Menawarkan rempah yang boleh dimasak dengan mudah, cepat, dan selamat dengan kelebihan istimewa iaitu pembungkusan utama yang dapat melarutkan terus dalam masakan.

Kepentingan Inovasi

- Menjadi lebih mudah serta menjimatkan masa dengan penggunaan produk ini
- Dapat memudahkan pengguna membawa kemana-mana
- Dapat memelihara alam sekitar
- Menjamin atau meningkatkan kualiti produk yang bagus untuk pengguna
- Dapat memelihara kesihatan pengguna dengan produk rempah larut yang terhindar daripada bahan terlarang.

Perincian Inovasi

Tapiocca Group Enterprise mengeluarkan produk berasaskan rempah jenama 'Rempah Larut' yang menggunakan pembungkusan daripada alam semula jadi iaitu tepung ubi kayu yang lain daripada produk sedia ada sekarang. Syarikat juga mengeluarkan pembungkusan itu sendiri selain daripada rempah jenama sendiri. Produk ini mempunyai kualiti dan manfaat yang baik kepada pengguna. Menjadi pengeluar pertama mengeluarkan produk makanan yang mempunyai pembungkusan yang dapat memelihara alam sekitar.

Produk yang ringan dan kecil ini juga mudah dibawa kemana-mana sahaja jika hendak melancong kerana ia amat mudah untuk digunakan di dalam masakan dan tidak memerlukan masa yang lama untuk menyediakan makanan. Ia sangat sesuai untuk orang yang sibuk dan yang suka melancong. Oleh itu, syarikat dapat menggantikan plastik untuk pembungkusan yang tidak pernah digunakan oleh produk-produk lain. Kos pengeluaran produk dari segi bahan mentah adalah rendah. Ia dapat menyokong pemasaran hijau(alam sekitar).

Tapiocca Group Enterprise yakin bahawa produk rempah berasaskan pembungkusan daripada alam semula jadi yang dapat dilarutkan terus ke dalam makanan ini dapat memberi kemudahan yang dijamin selamat kepada pelanggan yang memerlukan produk ini.

Potensi Pasaran dan Keusahawanan

- Dapat mencapai jualan yang tinggi pada setiap tahun
- Dapat meningkatkan pelanggan yang setia pada produk syarikat
- Dapat memasuki pasaran tempatan dengan cepat
- Dapat bekerjasama dengan pasaran luar
- Pasaran berkembang dengan maju apabila pelanggan sudah mengetahui tentang kewujudan produk syarikat.
- Meningkatkan keuntungan yang ditetapkan oleh syarikat dari semasa ke semasa.

Gambar / Lukisan Inovasi

LAMPIRAN L

PANDUAN PENGENDALIAN PEMANTAUAN DAN PENILAIAN PROJEK SECARA DALAM TALIAN

LAMPIRAN L

PANDUAN PENGENDALIAN PEMANTAUAN DAN PENILAIAN PROJEK SECARA DALAM TALIAN

(A). Panduan Pemantauan Penyelia Projek Pelajar:

Bil.	Proses Penyeliaan/Aktiviti Penyeliaan
1.	Penyelia menyediakan satu folder khas melalui aplikasi *Google Drive* dan sebarang aplikasi yang berkaitan yang mengandungi fail-fail/folder berikut: (a) menyediakan folder yang berasingan untuk setiap kumpulan yang diselia; (b) menyediakan sub-folder untuk setiap individu pelajar dalam folder kumpulan yang diselia dan dinamakan dengan nama pelajar tersebut.
2.	Berdasarkan panduan pada perkara 1, setiap folder pelajar harus mengandungi: (a) Buku Log dan Laporan yang lengkap dengan Borang Rubrik yang dihantar pada penghujung semester; (b) Draf Laporan Akhir Projek yang lengkap termasuk Rujukan dan Lampiran; (c) setiap draf bab mengandungi komen/cadangan daripada penyelia. (d) sebarang bukti perbincangan mengenai penulisan laporan antara penyelia bersama pelajar melalui aplikasi *WhatsApp/e-mel* dan sebarang aplikasi yang bekaitan harus disimpan (dalam bentuk *screenshot* di dalam folder pelajar).
3.	Setiap perjumpaan/perbincangan dengan pelajar harus dilaksanakan secara dalam talian dan dirakam (sekurang-kurangnya lima rakaman perjumpaan/perbincangan dalam talian perlu dilaksanakan). Setiap rakaman video harus dinamakan mengikut tarikh perbincangan/ mesyuarat dalam talian, dan disimpan di dalam folder kumpulan projek masing-masing secara dalam talian.
4.	Untuk proses pembangunan produk, setiap pelajar dalam kumpulan perlu menunjukkan /mendemonstrasikan/menggambarkan proses kerja yang digunakan sewaktu Fasa Rekabentuk Produk, Fasa Pembangunan Produk dan Fasa Ujian/Validasi Produk yang bersesuaian dalam urutan yang betul secara bertulis dan melalui rakaman video.

(B). Panduan Sesi Penilaian Pembentangan Projek Pelajar:

Bil.	Proses Penyeliaan/Aktiviti Penyeliaan
1.	Penyelaras Kursus Projek menyediakan Jadual Pembentangan Kursus Projek yang akan dijalankan secara dalam talian dan pemakluman mengenainya kepada pensyarah dan pelajar yang terlibat termasuk Panel Penilai luar *(jika berkaitan).*
2.	Sesi pembentangan secara dalam talian boleh dijalankan dengan menggunakan platform Google Meet/MS Teams/Zoom dan sebagainya yang bekaitan.
3.	Sesi pembentangan pelajar sebaik-baiknya dirakam dari mula hingga tamat keseluruhan sesi tersebut sebagai pembuktian pelaksanaan.
4.	Video rakaman sesi pembentangan projek pelajar boleh dimuat naik ke dalam *Google Drive* dan sebarang aplikasi yang berkaitan bagi tujuan perekodan dan rujukan.

***Nota*:** Panduan yang digariskan ini boleh diubah dan disesuaikan mengikut keperluan kursus, program pengajian dan politeknik masing-masing.

AHLI JAWATANKUASA PENULISAN

Penaung:

Dr. Mohd Rashahidi @ Rusdi bin Mohamood
Pengarah Kanan (Akademik)
Jabatan Pendidikan Politeknik dan Kolej Komuniti

Penasihat:

En. Noor Azizan bin Itam
Pengarah
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Pengerusi:

Dr. Siti Noridah binti Ali
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Timbalan Pengerusi:

En. Ahmad Syaffiq bin Md Baharudin
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Penyunting:

Dr. Siti Noridah binti Ali
En. Ahmad Syaffiq bin Md Baharudin
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Pereka Kulit Buku:

Pn. Nurul Fadzillah binti Abdul Wahab
Politeknik Muadzam Shah (PMS)

Penulis:

BAHAGIAN I

Bab 1: Pengenalan
Ts. Anuar bin Abdul Wahab (PSIS)
Hj. Rohimi bin Yusof (PBD)

Bab 2: Peranan dan Tanggungjawab
En. Mohd Hanapi bin Jusoh (PSMZA)
Pn. Norhayati binti Yusof (PTSB)

Bab 3: Perancangan Projek
En. Ahmad Kamil bin Kamarudin (PJK)
Pn. Siti Nor A'khidah binti Samsudin (POLIMAS)

Bab 4: Pelaksanaan Projek
Ts. Dr. Sunitha V. Doraisamy (PUO)
En. Shahrom Nurrizam Romli (BPN)

Bab 5: Harta Intelek Projek
Pn. Zunaidah binti Razali (PPI)
Pn. Suhaila Azura binti Abd Salam (PSMZA)

Bab 6: Buku Log
En. Ilmi bin Mohd Ariffin (BK)
Pn. Salmiyah binti Che Ahmad (POLIMAS)

Bab 7: Penulisan Laporan
Dr. Siti Noridah Ali (BIPD)
En. Annas bin Alamshah (KK Ampang)

BAHAGIAN II

Format Penulisan Laporan
En. Ahmad Syaffiq bin Md Baharudin (BIPD)
Dr. Siti Noridah binti Ali (BIPD)

Terima kasih atas sumbangan

En. Hainol Akbar bin Zaman, Pn. Damaisari binti Mohd. Nani, Pn. Zarith Sofia binti Abu Zahri, En. Haspirudin bin Basiron, Pn. Azrinawati bt Samaon, Pn. Siti Zalina binti Mokhtar, Dr. Umawathy a/p Techanamurthy dan Pn. Nurul Damia' binti Abdul Ghafur

Sekalung Penghargaan

Ucapan setinggi-tinggi penghargaan kepada semua pihak yang terlibat secara langsung serta semua pihak yang telah bekerjasama dalam pemurnian Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021, KPT dan Pasukan Penulis Buku Panduan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2016, Kementerian Pendidikan Tinggi dan Edisi 2012, Jabatan Pendidikan Politeknik.

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POLITEKNIK

31 MAR 2021

PEJABAT PENGARAH
○TINDAKAN ○MAKLUMAN ○EDARAN ○FAIL

Ruj. Kami : JPPKK.BIPD.800-6/1/1 (97)
Tarikh : 30 Mac 2021

PENGARAH POLITEKNIK
KEMENTERIAN PENGAJIAN TINGG

YBrs. Dr./Tuan/Puan,

PENGUATKUASAAN PENGGUNAAN BUKU PANDUAN PELAKSANAAN PROJEK PELAJAR (PROGRAM DIPLOMA) POLITEKNIK MALAYSIA EDISI 2021

Dengan segala hormatnya, perkara di atas adalah dirujuk.

2. Sukacitanya dimaklumkan bahawa Bahagian Instruksional dan Pembelajaran Digital (BIPD), Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) telah menerbitkan Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021. Buku panduan ini adalah sebagai rujukan dan panduan umum kepada pensyarah dan pelajar dalam pengurusan dan pelaksanaan projek akhir pelajar bagi kursus Projek berdasarkan kepada keperluan serta kesesuaian kursus, program pengajian, jabatan dan politeknik ke arah penghasilan projek yang kreatif dan inovatif.

3. Sehubungan dengan itu, bersama-sama surat ini disertakan sejumlah naskhah buku panduan berkenaan **(Lampiran 1)** untuk perhatian pihak YBrs. Dr./tuan/puan. Penggunaan buku panduan ini berkuat kuasa mulai **SESI DISEMBER 2020** di semua Politeknik Malaysia bagi menggantikan penggunaan Buku Panduan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2016. Dokumen ini juga telah dimuat naik di laman sesawang http://www.mypolycc.edu.my untuk capaian pihak politeknik.

4. Pihak YBrs. Dr./tuan/puan dimohon untuk melengkapkan Borang Pengesahan Penerimaan seperti di **Lampiran 2** dan mengembalikannya semula melalui e-mel kepada ahmad.syaffiq@mohe.gov.my bagi tujuan perekodan pihak BIPD.

5. Sekiranya terdapat sebarang pertanyaan berkaitan perkara ini, sila hubungi **En. Ahmad Syaffiq bin Md Baharudin** di talian **03-88882820**. Kerjasama dan tindakan YBrs. Dr./tuan/puan amat dihargai dan didahulukan dengan ucapan terima kasih.

Sekian.

"PRIHATIN RAKYAT: DARURAT MEMERANGI COVID-19"

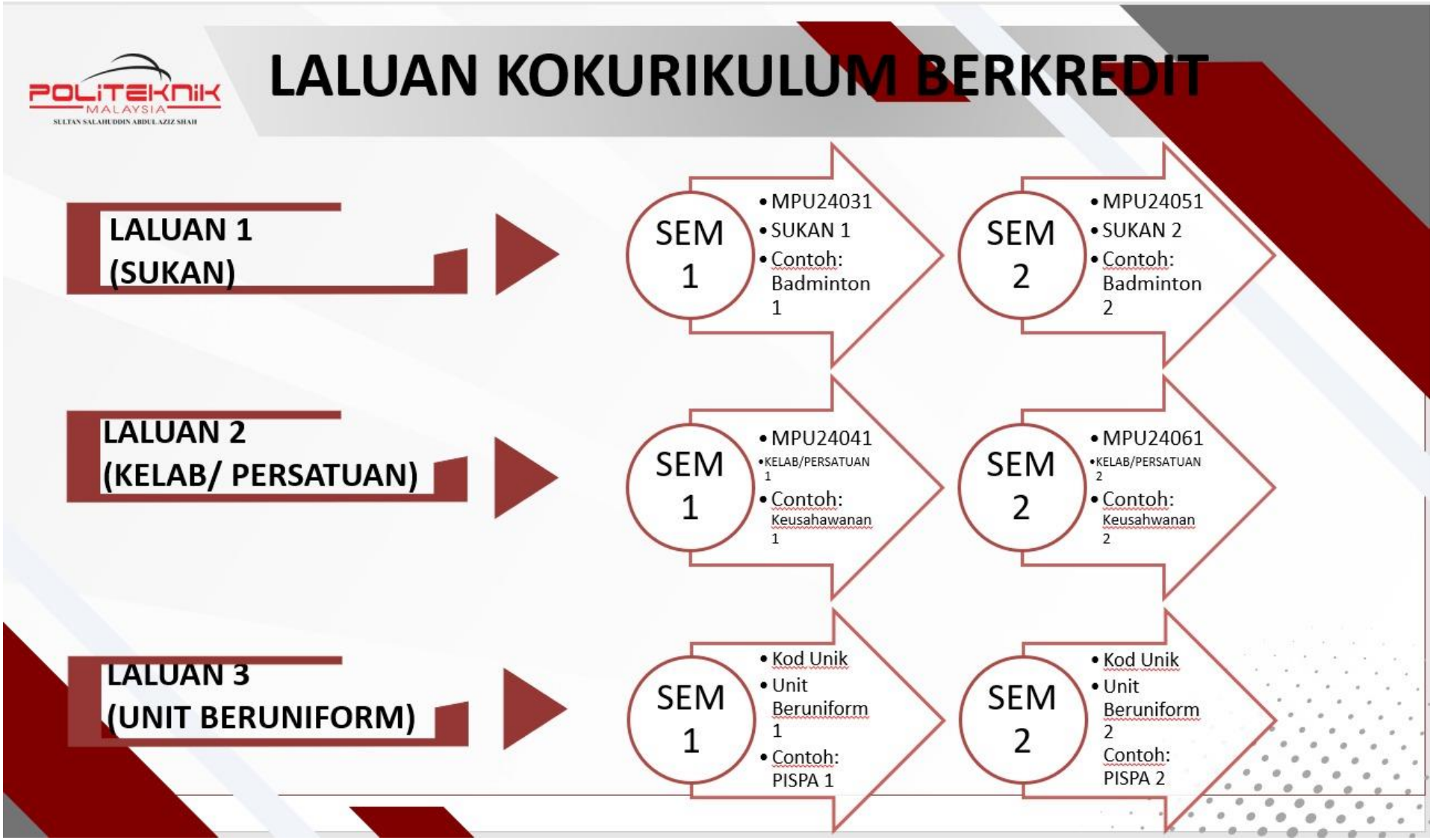
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(NOOR AZIZAN BIN ITAM)
Pengarah
Bahagian Instruksional dan Pembelajaran Digital
Jabatan Pendidikan Politeknik dan Kolej Komuniti

s.k.:

1. Pengarah Bahagian Kurikulum (BK)
2. Pengarah Bahagian Peperiksaan dan Penilaian (BPN)
3. Pengarah Bahagian Kompetensi dan Peningkatan Kerjaya (BKPK)
4. Pengarah Bahagian Ambilan dan Pembangunan Pelajar (BAPP)
5. Pengarah Bahagian Kolaborasi Industri dan Komuniti (BKIK)
6. Pengarah Bahagian Governan dan Kecemerlangan (BGK)
7. Pengarah Bahagian Perancangan Program dan Institusi (BPPI)
8. Pengarah Bahagian Koordinasi TVET (BKTVET)
9. Pengarah Pusat Penyelidikan dan Inovasi (PPI)


POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH
LALUAN KOKURIKULUM BERKREDIT
LALUAN 1 (SUKAN)
SEM 1
• MPU24031
• SUKAN 1
• Contoh: Badminton 1
SEM 2
• MPU24051
• SUKAN 2
• Contoh: Badminton 2
LALUAN 2 (KELAB/ PERSATUAN)
SEM 1
• MPU24041
• KELAB/PERSATUAN 1
• Contoh: Keusahawanan 1
SEM 2
• MPU24061
• KELAB/PERSATUAN 2
• Contoh: Keusahawanan 2
LALUAN 3 (UNIT BERUNIFORM)
SEM 1
• Kod Unik
• Unit Beruniform 1
• Contoh: PISPA 1
SEM 2
• Kod Unik
• Unit Beruniform 2
Contoh: PISPA 2

SENARAI PELAJAR JKM TERLIBAT SUKAN 2025

BIL	NAMA	NO. PENDAFTARAN	KEJOHANAN	TARIKH	SUKAN
1	Wong Li Ching	08DKM25F1197	Sukan Institusi Pendidikan Malaysia (SIPMA)	1-8 September 2025	Badminton
2	Muhammad Hareez bin Nur Anas	08DKM24F1291	Kursus Asas Pengenalan Paramotor Siri 2 2025	20 -22 Ogos 2025	Paramotor
3	Auni Batrisyia binti Mohd Firdaus	08DKM24F1279			
4	Tengku Aisyah Rohani binti Tengku Jamal Abdul Nassier	08DKM24F1277	Kejohanan Memanah Kebangsaan Siri 3 Tahun 2025	27-31 Ogos 2025	Memanah
			Sukan Institusi Pendidikan Malaysia (SIPMA)	1-7 September 2025	
5	Muhammad Irfan Darwisy bin Azmi	08DKM25F1106	Kejohanan TNB Liga Hoki Remaja Malaysia (MJHL) 2025	23 Julai – 10 Ogos 2025	Hoki
6	Muhammad Jawad Al Hamid bin Hasan	08DKM24F1160	Majlis Selangkah Mencipta Gemilang – Misi Emas SUKMA XXII Selangor 2025	13-14 Ogos 2025	Taekwando
			Kem Pengukuhan Minda Atlet (Sukan Taekwando)	5-8 September 2025	

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
SELANGOR DARUL EHSAN
MALAYSIA

Tel.: 603-51634000
Faksimili: 603-55691903
Laman Web: www.psa.edu.my
Facebook : pssaas

MEMO
JABATAN SUKAN, KOKURIKULUM DAN KEBUDAYAAN

Rujukan kami: PSA.600-6/1/10 Jld 4 (68)	Tarikh: 18 OGOS 2025

Perkara	**PELEPASAN PELAJAR MEWAKILI PASUKAN BADMINTON MSP KE SESI LATIHAN PUSAT DAN KEJOHANAN SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025**
Kepada	**KJPG, KJKA**
Daripada	**KETUA JABATAN SUKAN, KO-KURIKULUM DAN KEBUDAYAAN**
Salinan	**FAIL JSKK**

Dengan segala hormatnya saya merujuk perkara di atas.

2. Untuk makluman tuan/puan, dua (2) orang pelajar Politeknik ini seperti di Lampiran A telah dipilih untuk menyertai latihan pusat pasukan badminton MSP dan seterusnya mewakili pasukan MSP ke Kejohanan Sukan Institusi Pendidikan Malaysia (SIPMA) 2025 yang akan diadakan pada ketetapan yang berikut:

Latihan pusat
Tarikh : 16 – 31 Ogos 2025
Tempat : PSA

Kejohanan
Tarikh : 1 – 8 September 2025
Tempat : Daiman Sports, Johor

3. Sehubungan itu, mohon kerjasama tuan/puan untuk memberikan pelepasan kuliah kepada pelajar tersebut pada tarikh seperti di atas. Perhatian dan kerjasama pihak tuan/puan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian, terima kasih.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JULIA BINTI MARJUKI)
Ketua Jabatan Sukan, Ko-Kurikulum & Kebudayaan

LAMPIRAN A

SENARAI NAMA PELAJAR YANG MENYERTAI SESI LATIHAN PUSAN PASUKAN BADMINTON MSP DAN KEJOHANAN SIPMA 2025

BIL	NAMA	NO. KAD PELAJAR	JABATAN
1.	Christine Lam Mei He	08DPM25F1247	Jabatan Perdagangan
2.	Muhammad Emiel Isykandar bin Madzlan	08DKA25F1300	Jabatan Kejuruteraan Awam

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
Persiaran Usahawan, Seksyen U1,
40150 Shah Alam
SELANGOR, MALAYSIA

Tel. : 603-51634000
Faks : 603-55691903
Web : psa.mypolycc.edu.my
Facebook : pssaas

Ruj. Kami : PSA.100-12/1/1 ( )
Tarikh : 6 Ogos 2025

SEPERTI SENARAI EDARAN

YBrs. Ts./Dr./Tuan/Puan,

LANTIKAN SEBAGAI PEGAWAI DAN ATLET PASUKAN BADMINTON POLITEKNIK MALAYSIA KE KEJOHANAN SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan, Politeknik Sultan Salahuddin Abdul Aziz Shah telah dilantik sebagai Pusat Kecemerlangan Atlet Badminton Politeknik Malaysia. Pasukan ini akan menyertai Kejohanan Sukan Institusi Pendidikan Malaysia (SIPMA) 2025 yang akan berlangsung pada 1 hingga 7 September 2025 di Universiti Teknologi Malaysia, Skudai, Johor.

3. Sehubungan itu, para pegawai dan atlet dari institusi YBrs. Ts./Dr./Tuan/Puan seperti di Lampiran 1 adalah dilantik sebagai pegawai pasukan dan atlet bagi mewakili Pasukan Badminton Politeknik Malaysia ke kejohanan tersebut.

4. Untuk makluman pihak YBrs. Ts./Dr./Tuan/Puan juga, para pegawai dan atlet yang dilantik akan terlibat dengan sesi latihan pusat kontinjen dan seterusnya menyertai kejohanan yang akan diadakan seperti jadual di Lampiran 2. Kos penginapan & makan minum bagi para atlet akan ditanggung sepenuhnya oleh pihak Majlis Sukan Politeknik Malaysia manakala bagi para pegawai, segala tuntutan adalah di bawah tanggungan institusi masing-masing mengikut pekeliling perbendaharaan yang sedang berkuat kuasa.

5. Semoga dengan pelantikan ini, para pegawai dan pelajar institusi YBrs. Ts./Dr./Tuan/Puan dapat memberikan komitmen sepenuhnya bagi membantu kejayaan pasukan badminton Politeknik Malaysia.

6. Perhatian dan kerjasama YBrs. Ts./Dr./Tuan/Puan dalam perkara ini amat dihargai dan didahului dengan ribuan terima kasih. Sebarang pertanyaan, pihak YBrs. Ts./Dr./Tuan/Puan boleh menghubungi pengurus pasukan badminton Politeknik Malaysia, En Mohd Hariz Bin Samian di talian 013-7747766.

Sekian, terima kasih.

"MALAYSIA MADANI"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(ZAINAH BINTI RUJIHAN)
Pengarah
Politeknik Sultan Salahuddin Abdul Aziz Shah

SENARAI EDARAN

1. Pengarah
   Politeknik Ungku Omar

2. Pengarah
   Politeknik Sultan Abdul Halim Muadzam Shah

3. Pengarah
   Politeknik Kuching Sarawak

4. Pengarah
   Politeknik Kota Kinabalu Sabah

5. Pengarah
   Politeknik Merlimau Melaka

6. Pengarah
   Politeknik Tunku Syed Sirajuddin

7. Pengarah
   Politeknik Nilai Negeri Sembilan

8. Pengarah
   Politeknik Sandakan Sabah

9. Pengarah
   Politeknik Metro Betong Sarawak

Lampiran 1

SENARAI NAMA PEGAWAI DAN ATLET
PASUKAN BADMINTON POLITEKNIK MALAYSIA
KEJOHANAN SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025

BIL	NAMA PEGAWAI	INSTITUSI	JAWATAN
1.	Mohd Hariz Bin Samian	PSA	Pengurus
2.	Mohd Zakry Bin Ab Latif	Zakry Academy	Ketua Jurulatih
3.	Raby Bin Mohamad	PKS	Jurulatih Lelaki
4.	Fatin Affiqah Binti Mat Jah	PSA	Jurulatih Wanita

BIL	NAMA PEMAIN	NO. KAD PELAJAR	INSTITUSI
1.	Tharrsyan Arumugam	01DKM23F1155	PUO
2.	Lim Qian Thong	03DAT23F1056	POLIMAS
3.	Nurisa Fatihah Binti Mohamad Osman	05DDT23F1995	PKS
4.	Nurin Izzah Qistina Binti Norman	05DPE25F1103	PKS
5.	Mohamad Iqhwan Haqeem Bin Mamud	07DKM25F1144	PKK
6.	Christine Lam Mei He	08DPM25F1247	PSA
7.	Wong Ling Ching	08DKM25F1197	PSA
8.	Muhammad Emiel Isykandar Bin Madzlan	08DKA25F1300	PSA
9.	Syed Haritz Bin Sayed Muzir	14DEP23F1800	PMM
10.	Dhashaayanee Shanmuganathan	18DIT24F1055	PTSS
11.	Muhammad Zulhairi Bin Sahimi	23DHL23F2058	PNS
12.	Ainnur Ellysya binti Rashidi	23FTV25F1027	PNS
13.	Mirza Nazran Bin Muhammad Sam	23DHL25F1046	PNS
14.	Muhammad Jazlie Bin Ims Jenner	27DAG24F2006	PSS
15.	Muhammad Izzuddin Bin Abdullah Sepawi	31DUP23F1021	PMBS

Lampiran 2

JADUAL LATIHAN PUSAT & KEJOHANAN SIPMA 2025
PASUKAN BADMINTON POLITEKNIK MALAYSIA

TARIKH	MASA	PROGRAM	TEMPAT
16 – 30 Ogos 2025	8.00 pg – 6.00 ptg	Latihan Pusat	PSA
31 Ogos 2025	10.00 pg – 4.00 ptg	Pergerakan ke UTM skudai	
1-7 September 2025	8.00 pg – 9.00 mlm	Kejohanan Berlangsung	Daiman Sports, Johor
8 September 2025	8.00 pg – 10.00 mlm	Pergerakan Pulang	

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
Persiaran Usahawan
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40150 Shah Alam
SELANGOR DARUL EHSAN
MALAYSIA

Tel.: 603-51634000
Faksimili: 603-55691903
Laman Web: www.psa.edu.my
Facebook : pssaas

MEMO
JABATAN SUKAN, KOKURIKULUM DAN KEBUDAYAAN

Rujukan kami: PSA.600-6/1/10 Jld 4 (47)	Tarikh: 5 OGOS 2025

Perkara	**PELEPASAN PELAJAR MENYERTAI KURSUS ASAS PENGENALAN PARAMOTOR SIRI 2 2025**
Kepada	**KJKE, KJKM, KJKA**
Daripada	**KETUA JABATAN SUKAN, KO-KURIKULUM DAN KEBUDAYAAN**
Salinan	**FAIL JSKK**

Dengan segala hormatnya saya merujuk perkara di atas.

2. Untuk makluman tuan, lima (5) orang pelajar Politeknik ini seperti di Lampiran A akan menjalani menyertai Kursus Asas Pengenalan Paramotor Siri 2 2025 pada ketetapan yang berikut:

Tarikh : 20 Ogos – 22 Ogos 2025
Tempat : Pulau Indah, Selangor

3. Sehubungan itu, mohon kerjasama tuan untuk memberikan pelepasan kuliah kepada pelajar tersebut pada tarikh seperti di atas. Perhatian dan kerjasama pihak tuan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian, terima kasih.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JULIA BINTI MARJUKI)
Ketua Jabatan Sukan, Ko-Kurikulum & Kebudayaan

LAMPIRAN A

SENARAI NAMA PELAJAR YANG MENYERTAI KURSUS ASAS PENGENALAN PARAMOTOR SIRI 2 2025

BIL	NAMA	NO. KAD PELAJAR	JABATAN
1.	Muhammad Alif bin Ali	08DEU24F1021	Jabatan Kejuruteraan Elektrik
2.	Muqri bin Ab Rahman	08DKA22F1151	Jabatan Kejuruteraan Awam
3.	Damia Qaisara binti Mahadi	08DKA24F1129	Jabatan Kejuruteraan Awam
4.	Muhammad Hareez bin Nur Anas	08DKM24F1291	Jabatan Kejuruteraan Mekanikal
5.	Auni Batrisyia binti Mohd Firdaus	08DKM24F1279	Jabatan Kejuruteraan Mekanikal

JABATAN BELIA DAN SUKAN NEGARA
NATIONAL YOUTH AND SPORTS DEPARTMENT
Aras 13, Menara KBS
No. 27, Persiaran Perdana, Presint 4
Pusat Pentadbiran Kerajaan Persekutuan
62570 PUTRAJAYA
MALAYSIA

1MOCC: +603-8000 8000
Faks (Fax): +603-8881 0092 (P&K)
+603-8888 8761 (Belia)
+603-8888 8759 (Sukan)
+603-8888 8780 (Rakan Muda)
Laman Web (Web): www.kbs.gov.my

TERIMA
04 AUG 2025
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

Ruj. Kami : JBSN (PS) 500/5/4/1 (75)
Tarikh : 1 Ogos 2025

SEPERTI SENARAI EDARAN

Tuan/ Puan,

JEMPUTAN MENGHADIRI KURSUS ASAS PENGENALAN PARAMOTOR SIRI 2

Dengan segala hormatnya saya merujuk kepada perkara di atas.

2. Adalah dimaklumkan bahawa Kementerian Belia dan Sukan (KBS) menerusi Jabatan Belia dan Sukan Negara (JBSN) akan menganjurkan Kursus Asas Pengenalan Paragliding Siri 2 seperti ketetapan berikut:

Tarikh	:	**20 - 22 Ogos 2025**
Tempat	:	**Pulau Indah, Selangor**

3. Sehubungan itu, sukacita dimaklumkan yang Tuan/ Puan (senarai nama seperti di Lampiran) telah terpilih untuk menyertai kursus ini dan dikehendaki melapor diri mengikut jadual yang disertakan bersama.

4. Sekiranya memerlukan maklumat lanjut, pihak Tuan/ Puan boleh berhubung dengan pegawai bertanggungjawab, Encik Mohd Azzam Azmi di talian 012 329 0529 atau e-mel azzam@kbs.gov.my.

Segala kerjasama dan perhatian Tuan/ Puan berhubung perkara ini adalah amat dihargai dan didahului dengan ucapan terima kasih.

Pn. Shalida
Mohon sediakan surat pelepasan pelajar
5/8

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

KJ SKAC

(ABD AZIZ BIN ABD RAHMAN)
Timbalan Ketua Pengarah (Pembangunan Sukan)
Jabatan Belia dan Sukan Negara

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH			
	TINDAKAN	/	CATATAN
	URUSKAN		
	PERTIMBANGKAN		
	KIV		
	CADANGAN		
	SILA HADIR		
	SELARASKAN		
	MAKLUM BALAS		
	MAKLUMAN		
	FAIL		
	BINCANGKAN		
	EDARAN		

4/8

Sekiranya melibatkan TnT sta lomeng dgn TPSA

JADUAL AKTIVITI
KURSUS ASAS PENGENALAN PARAMOTOR

TARIKH	MASA	PERKARA
20 Ogos Rabu	9.30 am	Pendaftaran peserta di tapak latihan (Jomfly Paramotor Training Center, Pulau Indah, Klang)
	10.00 am	Minum pagi
	10.15 am	Taklimat kursus
	10.30 am	Modul 1: Pengenalan peralatan & fungsi
	11.30 am	Modul 2: Teknik mengembangkan glider
	1.00 pm	Rehat
	2.30 pm	Modul 3: Teknik kawalan glider
	4.00 pm	Minum petang
	4.30 pm	Modul 3: Teknik kawalan glider
	5.30 pm	Bersurai
21 Ogos Khamis	9.00 am	Sarapan pagi
	9.30 am	Modul 3: Teknik kawalan glider
	10.30 am	Minum pagi
	11.00 am	Modul 4: Teknik penerbangan (take off)
	12.30 pm	Modul 5: Teknik pendaratan (landing)
	1.00 pm	Rehat
	2.30 pm	Modul 6: Langkah keselamatan & pendaratan cemas
	4.00pm	Minum petang
	4.30 pm	Modul 7: Simulasi penerbangan
	6.00 pm	Bersurai
22 Ogos Jumaat	9.00 am	Sarapan pagi
	9.30 am	Modul 7: Simulasi penerbangan
	10.30 am	Modul 8: Peraturan penerbangan & lesen
	11.00 am	Majlis penutup
	12.00 pm	Bersurai

Nota: Segala aktiviti adalah mengikut cuaca dan keadaan semasa hari aktiviti. Segala perubahan akan dimaklumkan dengan kadar segera.

SENARAI EDARAN LUAR

1. Encik Muhammad Alif Bin Ali
   Jabatan Kejuruteraan Elektrik
   Politeknik Sultan Salahuddin Abdul Aziz Shah
   Persiaran Usahawan Seksyen u1
   40150 Shah Alam Selangor Darul Ehsan

2. Encik Muqri Bin Ab Rahman
   Jabatan Kejuruteraan Awam
   Politeknik Sultan Salahuddin Abdul Aziz Shah
   Persiaran Usahawan Seksyen u1
   40150 Shah Alam Selangor Darul Ehsan

3. Encik Ishak Bin Hasan
   Jabatan Sukan Kokurikulum Dan Kebudayaan
   Politeknik Sultan Salahuddin Abdul Aziz Shah
   Persiaran Usahawan Seksyen u1
   40150 Shah Alam Selangor Darul Ehsan

4. Cik Damia Qaisara Binti Mahadi
   Jabatan Kejuruteraan Awam
   Politeknik Sultan Salahuddin Abdul Aziz Shah
   Persiaran Usahawan Seksyen u1
   40150 Shah Alam Selangor Darul Ehsan

5. Encik Muhammad Hareez Nur Anas
   Jabatan Kejuruteraan Mekanikal
   Politeknik Sultan Salahuddin Abdul Aziz Shah
   Persiaran Usahawan Seksyen u1
   40150 Shah Alam Selangor Darul Ehsan

6. Cik Auni Batrisyia Binti Mohd Firdaus
   Jabatan Kejuruteraan Mekanikal
   Politeknik Sultan Salahuddin Abdul Aziz Shah
   Persiaran Usahawan Seksyen u1
   40150 Shah Alam Selangor Darul Ehsan

SENARAI EDARAN LUAR

1. Encik Mohd Nurul Zaiman bin Mansor
   Guru
   SMK Yoke Kuan Sekinchan
   820611-10-5527
   017-6654178

2. Encik Mohd Azlanshah bin Ismail
   Guru
   Tenby International School
   890425-05-5363
   0122517185

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
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Laman Web: www.psa.edu.my
Facebook : pssaas

MEMO
JABATAN SUKAN, KOKURIKULUM DAN KEBUDAYAAN

Rujukan kami: PSA.600-6/1/10 Jld 4 (83)	Tarikh: 22 OGOS 2025

Perkara	**PELEPASAN PELAJAR MENYERTAI KEJOHANAN MEMANAH KEBANGSAAN SIRI 3 TAHUN 2025**
Kepada	**KJKE, KJKM, KJKA**
Daripada	**KETUA JABATAN SUKAN, KO-KURIKULUM DAN KEBUDAYAAN**
Salinan	**FAIL JSKK**

Dengan segala hormatnya saya merujuk perkara di atas.

2. Untuk makluman tuan, tiga (3) orang pelajar Politeknik ini seperti di Lampiran A telah terpilih untuk menyertai Kejohanan Memanah Kebangsaan Siri 3 Tahun 2025 yang akan diadakan pada ketetapan yang berikut:

Latihan pusat
Tarikh : 23 – 26 Ogos 2025
Tempat : Pusat latihan Memanah Daerah Hulu Langat, Selangor

Kejohanan
Tarikh : 27 – 31 Ogos 2025
Tempat : Lapang Sasar Memanah Taman Mutiara Rini, Johor

3. Sehubungan itu, mohon kerjasama tuan untuk memberikan pelepasan kuliah kepada pelajar tersebut pada tarikh seperti di atas. Perhatian dan kerjasama pihak tuan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian, terima kasih.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JULIA BINTI MARJUKI)
Ketua Jabatan Sukan, Ko-Kurikulum & Kebudayaan

LAMPIRAN A

SENARAI NAMA PELAJAR YANG MENYERTAI KEJOHANAN MEMANAH KEBANGSAAN SIRI 3 TAHUN 2025

BIL	NAMA	NO. KAD PELAJAR	JABATAN
1.	Ahmad Nabil bin Mohd Nazri	08DJK23F1080	Jabatan Kejuruteraan Elektrik
2.	Tengku Aisyah Rohani binti Tengku Jamal Abdul Nassier	08DKM24F1277	Jabatan Kejuruteraan Mekanikal
3.	Diana Syahmina binti Hairi	08DPB25F1070	Jabatan Kejuruteraan Awam

PERSATUAN MEMANAH SELANGOR
No 2-59, Kajang Perdana Avenue
Jalan Kajang Perdana 3A, Kajang Perdana
43000 Kajang, Selangor Darul Ehsan

SELAR PERSATUAN MEMANAH SELANGOR

Rujuk : SELAR-25/177

Tarikh : 15 Ogos 2025

TERIMA
20 AUG 2025
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

Seperti senarai agihan.

Tuan,

PERMOHONAN PELEPASAN PELAJAR UNTUK MENYERTAI KEJOHANAN MEMANAH KEBANGSAAN SIRI 3 TAHUN 2025

Dengan segala hormatnya, perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan Persatuan Memanah Selangor (SELAR) telah menerima jemputan dari Persatuan Memanah Negeri Johor (PMNJ) untuk menyertai Kejohanan Memanah Kebangsaan Siri 3/2025, yang akan diadakan mengikut butiran seperti berikut:

a. Tarikh : 27 Ogos hingga 30 Ogos 2025.
b. Lokasi : Lapang Sasar Memanah Taman Mutiara Rini, Skudai, Johor.

3. Untuk makluman, pelajar tuan seperti di Lampiran A, telah terpilih untuk mewakili Negeri Selangor di kejohanan peringkat Kebangsaan ini.

4. Sehubungan dengan ini, pihak Persatuan memohon pelepasan pelajar berkenaan mulai 23 hingga 31 Ogos 2025 mengikut perancangan seperti berikut:

a. 23 hingga 25 Ogos 2025 : Latihan pusat di Pusat Latihan Memanah Daerah Hulu Langat, Taman Sepakat Indah, Kajang.
b. 26 Ogos 2025 : Pergerakan ke Johor.
c. 27 hingga 30 Ogos 2025 : Hari kejohanan.
d. 31 Ogos 2025 : Pergerakan balik ke Selangor.

5. Besar harapan kami agar pihak tuan dapat meluluskan permohonan ini. Kerjasama dan sokongan pihak tuan amat kami hargai dan didahului dengan ucapan terima kasih.

Yang menjalankan amanah,

Pn. Shahida
Pohon sediakan surat pelepasan kutah pelajar
KJSK
21/8

MUHAMAD AFFENDY BIN JAMALUDIN
Setiausaha Kehormat
Persatuan Memanah Selangor (SELAR)

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PIC	TINDAKAN	/	CATATAN
	URUSKAN		
	PERTIMBANGKAN		
	KIV		
	CADANGAN		
	SILA HADIR		
	SELARASKAN		
	MAKLUM BALAS		
	MAKLUMAN		
	FAIL		
	BINDANGKAN		
	SIARAN		

20/8

SELAR SELANGOR ARCHERY

Senarai agihan :

1. **UNIVERSITI TEKNOLOGI MARA (UiTM)**
   Fakulti Sains Sukan Dan Rekreasi
   40450 Shah Alam, Selangor

2. **UNIVERSITI SAINS ISLAM MALAYSIA**
   Institut Fatwa Dan Halal
   71800 Nilai, Negeri Sembilan

3. **UNIVERSITI PERTAHANAN NASIONAL MALAYSIA**
   Akademi Kecergasan Pertahanan
   Kem Sungai Besi
   57000, Kuala Lumpur

4. **UNIVERSITY KUALA LUMPUR**
   Malaysia Institute Of Aviation Technology (UniKL MIAT)
   Lot 2891, Jalan Jenderam Hulu
   Kampung Jenderam Hulu
   43900 Dengkil, Selangor

5. **POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH**
   Jabatan Kejuruteraan Elektrik
   Persiaran Usahawan
   40150 Shah Alam, Selangor

6. **POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH**
   Jabatan Kejuruteraan Mekanikal
   Persiaran Usahawan
   40150 Shah Alam, Selangor

7. **POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH**
   Jabatan Kejuruteraan Awam
   Persiaran Usahawan
   40150 Shah Alam, Selangor

8. **KPTM BANGI**
   AA101- Diploma In Accounting
   Seksyen 14, Jalan Teras Jernang
   43650 Bandar Baru Bangi, Selangor

9. **KOLEJ KOMUNITI HULU LANGAT**
   Sijil Teknologi Penyejukan dan Penyamanan Udara
   Jalan Prima Saujana 2/G
   Taman Prima Saujana
   43000 Kajang, Selangor.

LAMPIRAN A

SENARAI NAMA ATLET MEMANAH NEGERI SELANGOR
KEJOHANAN MEMANAH KEBANGSAAN SIRI 03, 2025

TARIKH PERMOHONAN PELEPASAN : 23 OGOS hingga 31 OGOS 2025

BIL	NAMA PELAJAR	NAMA INSTITUSI
1.	NUR ALYAA NAZURAH BT FADZIL FAIRUZ No KP : 050111101134 No Pelajar : 2024924373	UNIVERSITI TEKNOLOGI MARA (UITM) Fakulti Sains Sukan Dan Rekreasi
2.	SAHIL FAHMI BIN MOHAMAD SYAKIR No KP : 050726-10-0701 No Pelajar : 2023861328	UNIVERSITI SAINS ISLAM MALAYSIA Institut Fatwa Dan Halal
3.	SAHIL AWNI BIN MOHAMAD SYAKIR No KP : 030311101501 No Pelajar : 2240978	UNIVERSITI PERTAHANAN NASIONAL MALAYSIA Akademi Kecergasan Pertahanan
4.	MUHAMMAD NOR ARASH BIN MOHD NOR @ AZAM No KP : 050425141315 No Pelajar : 53106323210	UNIVERSITY KUALA LUMPUR Malaysia Institute Of Aviation Technology (UniKL MIAT)
5.	AHMAD NABIL BIN MOHD NAZRI No KP : 050519100805 No Pelajar : 08DJK23F1080	POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH Jabatan Kejuruteraan Elektrik
6.	TENGKU AISYAH ROHANI BINTI TENGKU JAMAL ABDUL NASSIER No KP : 060203-14-0842 No Pelajar : 08DKM24F1277	POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH Jabatan Kejuruteraan Mekanikal
7.	DIANA SYAHMINA BINTI HAIRI No KP : 070908101498 No Pelajar : 08DPB25F1070	POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH Jabatan Kejuruteraan Awam
8.	MUHAMMAD IRFAN HILMI BIN MOHD KHUSYAIRI No KP : 060429140669 No Pelajar : BGN240111195	KPTM BANGI AA101- Diploma in Accounting
9.	MUHAMMAD A'RIF A'FIQ BIN SUHAIMI No KP : 060526030429 No Pelajar : B04SPU24F513	KOLEJ KOMUNITI HULU LANGAT Sijil Teknologi Penyejukan dan Penyamanan Udara

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
SELANGOR DARUL EHSAN
MALAYSIA

Tel.: 603-51634000
Faksimili: 603-55691903
Laman Web: www.psa.edu.my
Facebook : pssaas

MEMO
JABATAN SUKAN, KOKURIKULUM DAN KEBUDAYAAN

Rujukan kami: PSA.600-6/1/10 Jld 4 (88)	Tarikh: 27 OGOS 2025

Perkara	**PELEPASAN PELAJAR BAGI MENYERTAI KEJOHANAN SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025**
Kepada	**KJKA, KJKE, KJKM, KJPG**
Daripada	**KETUA JABATAN SUKAN, KO-KURIKULUM DAN KEBUDAYAAN**
Salinan	**FAIL JSKK**

Dengan segala hormatnya saya merujuk perkara di atas.

2. Untuk makluman tuan/puan, seramai 16 orang pelajar Politeknik ini seperti di Lampiran A telah dipilih untuk menyertai Kejohanan Sukan Institusi Pendidikan Malaysia (SIPMA) 2025 pada ketetapan yang berikut:

Tarikh : 31 Ogos – 8 September 2025
Tempat : Universiti Teknologi Malaysia, Skudai, Johor

3. Sehubungan itu, mohon kerjasama tuan/puan untuk memberikan pelepasan kuliah kepada pelajar- pelajar tersebut pada tarikh seperti di atas. Perhatian dan kerjasama pihak tuan/puan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian, terima kasih.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JULIA BINTI MARJUKI)
Ketua Jabatan Sukan, Ko-Kurikulum & Kebudayaan

LAMPIRAN A

SENARAI NAMA PELAJAR YANG MENYERTAI KEJOHANAN SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025

BIL	NAMA	NO. KAD PELAJAR	JABATAN
1.	Ahmad Nabil bin Mohd Nazri	08DJK23F1080	Jabatan Kejuruteraan Elektrik
2.	Evan Rich Chong Qi Wei	08DPI24F1149	Jabatan Perdagangan
3.	Tengku Aisyah Rohani binti Tengku Jamal Abul Nassier	08DKM24F1277	Jabatan Kejuruteraan Mekanikal
4.	Nur Ieka Hariesya binti Zainal Habsahli	08DPR24F1149	Jabatan Perdagangan
5.	Diana Syahmina binti Hairi	08DPB25F1070	Jabatan Perdagangan
6.	Muhammad Emiel Isykandar bin Madzlan	08DKA25F1300	Jabatan Kejuruteraan Awam
7.	Christine Lam Mei He	08DPM25F1247	Jabatan Perdagangan
8.	Wong Ling Ching	08DKM25F1197	Jabatan Kejuruteraan Mekanikal
9.	Harith Danial bin Azhar	08DKA23F1069	Jabatan Kejuruteraan Awam
10.	Amirul Zaim bin Ahmad Zahir	08DPM25F1220	Jabatan Perdagangan
11.	Arif Ikhwan bin Ahmad Zahir	08DPM25F1231	Jabatan Perdagangan
12.	Gadees Nurbatrisyia Arafat binti Khairil Arafat	08DKA24F1398	Jabatan Kejuruteraan Awam
13.	Nur Alieya Natasya binti Mohd Zamri	08DEU24F1105	Jabatan Kejuruteraan Elektrik
14.	Muhammad Amir Zakwan bin Ahmad Zahrul	08DPB24F2014	Jabatan Kejuruteraan Awam
15.	Damiea Zulaikha binti Abdul Samad	08DPM24F1004	Jabatan Perdagangan
16.	Muhammad Taufiq bin Kamaruzaman	08DBK24F1080	Jabatan Kejuruteraan Awam

TERIMA
19 AUG 2025
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

BAHAGIAN AMBILAN DAN PEMBANGUNAN PELAJAR
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI
KEMENTERIAN PENDIDIKAN TINGGI
Galeria PjH, Aras 6, Jalan P4W
Persiaran Perdana, Presint 4
62100 W.P. PUTRAJAYA
Tel: 03-8888 3837
Faks: 03-8888 2111

Ruj Kami : JPKK.BAPP.600-3/1/3 (18)
Tarikh : Ogos 2025

SENARAI SEPERTI EDARAN

YBrs. Ts./Dr./Tuan/Puan,

PELEPASAN PELAJAR POLITEKNIK MALAYSIA KE KEJOHANAN SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan pelajar Politeknik Malaysia akan menyertai kejohanan **SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025** yang akan berlangsung pada 1 hingga 7 September 2025 di Universiti Teknologi Malaysia (UTM) Skudai, Johor.

3. Sehubungan dengan itu, dimohon jasa baik YBrs. Ts/ Dr./tuan/puan, untuk memberikan pelepasan kepada pelajar seperti di lampiran selaku atlet Politeknik Malaysia ke SIPMA 2025 pada ketetapan berikut:

i) **PERSEDIAAN MAJLIS (REHEARSAL)**
Tarikh : 31 Ogos 2025
Tempat : Politeknik Ibrahim Sultan (PIS)
Masa : 10.00 Pagi

ii) **MAJLIS PENYERAHAN BENDERA**
Tarikh : 31 Ogos 2025
Tempat : Politeknik Ibrahim Sultan (PIS)
Masa : 2.00 Petang

iii) **KEJOHANAN SIPMA 2025**
Tarikh : 1 – 7 September 2025
Tempat : Universiti Teknologi Malaysia (UTM)
Penganjur : Kementerian Pendidikan Tinggi (KPT)

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PIC	TINDAKAN	/	CATATAN
	URUSKAN		
	PERTIMBANGKAN		
	KIV		
	CADANGAN		
	SILA HADIR		
	SELARASKAN		
	MAKLUM BALAS		
	MAKLUMAN		
	FAIL		
	BINCANGKAN		
	EDARAN		

19/8

Pn. Shalida
Pohon sediakan
~~Surat~~ memo pelepasan
kuliah pelajar.
20/8

4. Tuan/Puan boleh berhubung dengan pegawai berikut untuk sebarang pertanyaan lanjut:

i) En. Shamsanirul Nizam bin Ismail (BAPP)
No. Tel : 012-2138845

ii) En. Mohd Fauzi bin Derani (Politeknik)
No. Tel : 019-2283181

Kerjasama, perhatian dan pertimbangan YBrs. Ts./ Dr./tuan/puan berhubung perkara ini amat dihargai dan didahulukan dengan ucapan setinggi-tinggi penghargaan dan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(HAJI AZIRIN BIN ABDUL AZIZ)
Pengarah
Bahagian Ambilan dan Pembangunan Pelajar
Jabatan Pendidikan Politeknik dan Kolej Komuniti

SENARAI EDARAN

SENARAI NAMA PELAJAR POLITEKNIK YANG AKAN MENYERTAI SUKAN INSTITUSI PENDIDIKAN MALAYSIA (SIPMA) 2025, 1 – 7 SEPTEMBER 2025

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
1	AHMAD NABIL BIN MOHD NAZRI	08DJK23F1080	PSA	MEMANAH
2	EVAN RICH CHONG QI WEI	08DPI24F1149	PSA	MEMANAH
3	TENGKU AISYAH ROHANI BINTI TENGKU JAMAL ABDUL NASSIER	08DKM24F1277	PSA	MEMANAH
4	NUR IEKA HARIESYA BINTI ZAINAL HABSAHLI	08DPR24F1149	PSA	MEMANAH
5	DIANA SYAHMINA BINTI HAIRI	08DPB25F1070	PSA	MEMANAH
6	NADIA BINTI KHALID	03DPR25F1152	POLIMAS	MEMANAH
7	AQIL AIMAN BIN AZIAN	02DTM25F1082	POLISAS	MEMANAH
8	QAYYUM ZAKWAN NAIM BIN MOHD ZIRAHIM	02DKM25F1117	POLISAS	MEMANAH
9	NUR DAMIA IMANINA BINTI AZIAN	02DBS22F1013	POLISAS	MEMANAH
10	AISHAH UMAIRAH BINTI ROSLAN	02DSK25F1054	POLISAS	MEMANAH
11	AMNI NADZIRAH BINTI RIZAL	02DLS25F1055	POLISAS	MEMANAH
12	MUHAMMAD FIRDAUS BIN JAMAL	02DBS21F2047	POLISAS	MEMANAH
13	MUHAMMAD AFFIQ SYAZWAN BIN AZLAN	10DKM25F1080	PSP	MEMANAH
14	NUR AIN SYAFIQAH BINTI KAMARUDIN	10DEE25F1054	PSP	MEMANAH
15	AHMAD NAJWAN BIN MOHD NAZRI	01DPU24F2013	PUO	MEMANAH
16	MUHAMMAD HASIF BIN MUHAMAD NAZRI	16DEM25F1036	PTSB	MEMANAH
17	FAIQ NASIHIN BIN MOHD MAHFUZ	06DEG25F1031	PPD	MEMANAH
18	MIRZA NAZRAN BIN MOHD SAM	23DHL25F1046	PNS	BADMINTON

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
19	MUHAMMAD ZULHAIRI BIN MUHAMMAD SAM	23DHL23F2058	PNS	BADMINTON
20	AINNUR ELLYSYA	23FTV25F1027	PNS	BADMINTON
21	MUHAMMAD EMIEL ISYKANDAR BIN MADZLAN	08DKA25F1300	PSA	BADMINTON
22	CHRISTINE LAM MEI HE	08DPM25F1247	PSA	BADMINTON
23	WONG LING CHING	08DKM25F1197	PSA	BADMINTON
24	NURISA FATIHAH BT MOHAMAD OSMAN	05DDT23F1995	PKS	BADMINTON
25	NURIN IZZAH QISTINA BT NORMAN	05DPE25F1103	PKS	BADMINTON
26	MUHAMMAD IZZUDDIN BIN SEPAWI	31DUP23F1021	PMBS	BADMINTON
27	SYED HARITZ BIN SAYED MUZIR	14DEP23F1800	PMM	BADMINTON
28	MOHAMAD IQHWAN HAQEEM BIN MAMUD	07DKM25F1144	PKK	BADMINTON
29	THARRSYAN ARUMUGAM	01DKM23F1155	PUO	BADMINTON
30	MUHAMMAD JAZLIE BIN IMS JENNER	27DAG24F2006	PSS	BADMINTON
31	DHASHAAYANEE SHANMUGAM	18DIT24F1055	PTSS	BADMINTON
32	LIM QIAN THONG	03DAT23F1056	POLIMAS	BADMINTON
33	MIMI NABILAH BINTI NORANUAR	01DTK23F1039	PUO	BOLA JARING
34	NADIAH AFIQAH BINTI MUHD ZASTRI	01DRM22F2024	PUO	BOLA JARING
35	NUR IZZATI SYAFIQAH BINTI JAMALUDDIN	01DDT23F1083	PUO	BOLA JARING
36	NURFASYA BINTI MOHAMED DAUD	16DPM23F2006	PTSB	BOLA JARING
37	QASEH AIN BATRISYA BINTI MOHD ROFISON	16DAC25F1086	PTSB	BOLA JARING
38	SITI NURBAIYAH BINTI ABDULLAH	10DIB22F2072	PSP	BOLA JARING
39	NURUL 'ULYA BINTI BADRUL	10DAT24F1072	PSP	BOLA JARING
40	ALEXANRA CAROLLISA BINTI EDWIN	07DHM24F1047	PKK	BOLA JARING
41	NURUL AMIRA SYAHIRAH BINTI SYARIFUDDIN	07DHR24F1055	PKK	BOLA JARING
42	FIZA AZARINA BINTI YUSMADI	18DUP22F2023	PTSS	BOLA JARING

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
43	SITI NURAINA NATASHA BINTI MAZLAN	18DUP22F2026	PTSS	BOLA JARING
44	NUR FATIN ALIEYA BINTI ZAMRI	03DKA24F1114	POLIMAS	BOLA JARING
45	MUHAMMAD IZZ IRFAN BIN AZRUL RIDZUAN	01DKA25F1168	PUO	HOKI (L)
46	FIRAS AMIR NABHAN BIN ZULFAKHRI	01DKM25F1087	PUO	HOKI (L)
47	AHMAD AMIRUL AKMAL BIN MAT	01DKM25F1087	PUO	HOKI (L)
48	MUHAMMAD SYAZMIN HUZMI BIN MOHTAR	01DKA25F1108	PUO	HOKI (L)
49	MUHAMMAD NASRULLAH BIN DARULNEZAM	01DIF23F2025	PUO	HOKI (L)
50	AMIRUL MUKMININ BIN JUWANDYAKBAR	01DEM24F1022	PUO	HOKI (L)
51	HARITH DANIAL BIN AZHAR	08DKA23F1069	PSA	HOKI (L)
52	AMIRUL ZAIM BIN AHMAD ZAHIR	08DPM25F1220	PSA	HOKI (L)
53	ARIF IKHWAN BIN AHMAD ZAHIR	08DPM25F1231	PSA	HOKI (L)
54	MOHAMAD IRFAN NAZMI BIN IBRAHIM	02DTM24F1110	POLISAS	HOKI (L)
55	MUHAMMAD HAKEEM DANISH BIN FADHLUR RAHMAN	02DMH24F2034	POLISAS	HOKI (L)
56	FARRIS AZWAR AMIR BIN MOHD FAISSAL	10DEE23F1085	PSP	HOKI (L)
57	KUGIENTIREN A/L SOMASUNTAR	10DLS25F1099	PSP	HOKI (L)
58	KALVINDERJIT SINGH A/L HARCHARANJIT SINGH	10DEE23F1087	PSP	HOKI (L)
59	MUHAMMAD NIFAIL ARFAN BIN SAMSUL	23DLH23F1063	PNS	HOKI (L)
60	ILHAM HADIFF BIN NAZARUDIN	23DBT23F1073	PNS	HOKI (L)
61	MUHAMMAD MOSLEEM BIN MUHAMMAD FADHIL	19DMC23F1017	PMS	HOKI (L)
62	MUHAMMAD FADIL IMAN BIN ZAUFIT	14DEV23F1023	PMM	HOKI (L)
63	NURSYAZA ZULAIKHA BINTI SHUKUR	09DEP24F1005	PIS	HOKI (W)

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
64	INTAN NABIHAH BINTI ABDUR RAHMAN	09DEV24F1062	PIS	HOKI (W)
65	NURUL AYUNATASHA BINTI ABDULLAH	09DEV24F1064	PIS	HOKI (W)
66	ZAHRAH ZUYYIN BINTI EFFARIZAL	09DMB24F1008	PIS	HOKI (W)
67	MAIZURA IZATY BINTI MUHAIDI	09DEV22F2021	PIS	HOKI (W)
68	SITI NUR FATEHAH BINTI AHMAD MOHAINI	14DKA25F1149	PMM	HOKI (W)
69	NUR SAFFA KHALIESAH BINTI AZIZI	14DPR24F2031	PMM	HOKI (W)
70	NOR ELISHA BINTI MOHD FAIRUS	14DKM25F1127	PMM	HOKI (W)
71	NORSHAFIQHA BINTI ISHAK	14DTP222003	PMM	HOKI (W)
72	NURALYA AMANI BT MUHAMMAD FARIF	23DBT24F1044	PNS	HOKI (W)
73	IRDINA MADIHAH BINTI AZMI	23DIF24F2020	PNS	HOKI (W)
74	NUR SYASYA ASYURA BINTI FIRDAUS	23DIF24F1040	PNS	HOKI (W)
75	GADEES NURBATRISYIA ARAFAT BINTI KHAIRIL ARAFAT	08DKA24F1398	PSA	HOKI (W)
76	NUR ALIEYA NATASYA BINTI MOHD ZAMRI	08DEU24F1105	PSA	HOKI (W)
77	NUR AINA LIYANA BINTI ZULKIFLI	01DPM23F1075	PUO	HOKI (W)
78	NURNAJIHAH BINTI MOHD SUKRI	19DRT23F1024	PMS	HOKI (W)
79	NUR NADHIRAH BINTI MOHD SUKRI	13DEP22F1014	PSMZA	HOKI (W)
80	AFRINA BINTI MOHD NASIR	18DEV24F1999	PTSS	HOKI (W)
81	MUHAMMAD IQBAL BIN ZULKOFLI	04DPR23F2015	PKB	BOLA TAMPAR (L)
82	MUHAMMAD IMRAN IHTISYAM BIN CHE ABD HAMID	04DET24F1105	PKB	BOLA TAMPAR (L)
83	MUHAMMAD SYAKIR BIN MOHAMAD NOOR	04DPR24F1058	PKB	BOLA TAMPAR (L)
84	MUHAMMAD SYAHRIN BIN MOHD ZUKIFLI	04DPR25F1108	PKB	BOLA TAMPAR (L)

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
85	WAN MUHAMMAD IZZHAM BIN IBRAHIM	04DET23F2012	PKB	BOLA TAMPAR (L)
86	MOHAMAD SHAKIR ADZIM BIN MOHD ABDUL	04DPR24F1102	PKB	BOLA TAMPAR (L)
87	MUHAMMAD SYAHID BIN MOHD ZUKIFLI	04DKA23F1056	PKB	BOLA TAMPAR (L)
88	KELVIN ADEN ANDREW KANTOD	07DBK24F2040	PKK	BOLA TAMPAR (L)
89	MUHAMMAD AMIRUL HAIQAL BIN RUDIANSYAH	07DTP23F1008	PKK	BOLA TAMPAR (L)
90	MUHAMMAD SYARIF BIN MASJAN	07DBK24F2001	PKK	BOLA TAMPAR (L)
91	MUHAMMAD AMIR ZAKWAN BIN AHMAD ZAHRUL	08DPB24F2014	PSA	BOLA TAMPAR (L)
92	MUHAMMAD AMIRUL ASYRAF BIN MOHD JAMLI	02DEE23F1027	POLISAS	BOLA TAMPAR (L)
93	SHAFIK WONG ZHENG WEN	27DAQ23F1057	PSS	BOLA TAMPAR (L)
94	LUQMALUL HAKIM BIN ZAHARI	06DPR24F2026	PPD	BOLA TAMPAR (L)
95	NURUL AMANI BINTI ABDUL HAMID	04DUB23F1062	PKB	BOLA TAMPAR (W)
96	SITI AISHAH BINTI HAMZAH	04DPT23F1043	PKB	BOLA TAMPAR (W)
97	CRYSTAL LEAN PEI NIE	04DPT23F1027	PKB	BOLA TAMPAR (W)
98	FATIN AFIQAH BINTI MUHAMMAD FATHIL	04DPM23F1131	PKB	BOLA TAMPAR (W)
99	NORAISAH BINTI AJLAN	07DAT23F1051	PKK	BOLA TAMPAR (W)
100	AINUL WADINA BINTI ZULKIFLI	07DHR24F2054	PKK	BOLA TAMPAR (W)
101	ROZATUL AINOL AMIRAH BINTI AMIR	07DLS22F1061	PKK	BOLA TAMPAR (W)
102	NURUL NAJWA BINTI NOOR AZMAN	06DSK23F1076	PPD	BOLA TAMPAR (W)
103	SITI NADZRIAH BINTI DZABUR	06DPR22F1098	PPD	BOLA TAMPAR (W)
104	NUR HALIDA BINTI RAZALI	06DPR23F1115	PPD	BOLA TAMPAR (W)
105	NUREEN HANIS NABIHAH BINTI MUSLIM	14DCC24F2003	PMM	BOLA TAMPAR (W)

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
106	HAFIZZAHNUR FASIHA BINTI HAMZAH	14DPR25F1081	PMM	BOLA TAMPAR (W)
107	NUR FARISHA ANIS BINTI FAHMI	33DTM25F1026	PTSN	BOLA TAMPAR (W)
108	DAMIEA ZULAIKHA BT ABDUL SAMAD	08DPM24F1004	PSA	TENPIN BOLING
109	MOHAMAD DANISH IRFAN BIN MOHD ZULKHAIRI	26DRT23F1041	PHT	TENPIN BOLING
110	AHMAD DANIAL BIN MOHD ZAMRI	09DKM23F1005	PIS	TENPIN BOLING
111	ADRIANA QISTINA BINTI MOHD NARAZI	01DFI24F2005	PUO	TENPIN BOLING
112	NUR WARDINA BINTI POLINU	07DAT24F1034	PKK	TENPIN BOLING
113	NURMAN HAKIMIE BIN MOHD HUSSIN	28DIT24F2030	PMKL	TENPIN BOLING
114	PUTRA DANIAEL AQIF BIN NORADZMI	17DKA23F1078	PSIS	TENPIN BOLING
115	SHARIFAH NUR SYARAFINA BT SYED PUTERA	18DHR23F1011	PTSS	TENPIN BOLING
116	MOHAMMAD HAIKAL HIDAYAT	33DPC23F1104	PTSN	BOLA SEPAK
117	MUHAMMAD AQIL HAIKAL BIN MOHD NIZAM	33FTV24F1072	PTSN	BOLA SEPAK
118	MOHAMAD FIRDAUS BIN AB AZIZ	13DIT23F2013	PSMZA	BOLA SEPAK
119	MUHAMMAD HARIEZ BIN MOHD KHAIROL	13DAD24F1019	PSMZA	BOLA SEPAK
120	MUHAMMAD NUQMAN AFFAN BIN MUSTAFFA	13DKA24F1025	PSMZA	BOLA SEPAK
121	MUHAMMAD DANIAL HAIKAL BIN NORIZAN	22DAG24F2056	PJK	BOLA SEPAK
122	NUZUL SYUKRIN BIN MD ARMANZAIRI	22DAG24F1112	PJK	BOLA SEPAK
123	IRSYAD DANIAL BIN IRWAN	26DRT24F2040	PHT	BOLA SEPAK
124	MUHAMMAD ARMAN BIN CHE MOHAMMED NASIR	26DUP23F1078	PHT	BOLA SEPAK
125	WAN NORHAFIZAN BIN CHE WAN NOR	26DRT24F1050	PHT	BOLA SEPAK
126	NUR AIERIL HAIMI BIN HUSSIEN	09DEV23F1049	PIS	BOLA SEPAK

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
127	MUHAMMAD IZZAT HAZIQ BIN ZAINAL	09DUP24F2016	PIS	BOLA SEPAK
128	MUHAMMAD AZUDEEN SHAHEEQ BIN ZAIDI	12DEE23F1026	PKT	BOLA SEPAK
129	MUHAMMAD NUR HAQIMI BIN HARUN	12DEE23F2004	PKT	BOLA SEPAK
130	MUHAMMAD ZARUL AIMAN BIN MOHD ZULKARNAIN	04DET24F1108	PKB	BOLA SEPAK
131	MUHAMMAD AZIM ISKANDAR BIN ZURAIMIE	23DKM22F2004	PNS	BOLA SEPAK
132	MUHAMMAD FITRI IKHWAN BIN ZALI	19DRA24F1051	PMS	BOLA SEPAK
133	EMIR EL' IMAN BIN AHMAD ZUKRI	06DTP22F1033	PPD	BOLA SEPAK
134	MUHAMMAD ZUL ALI BIN MOHD BADROL	28DHM24F1032	PMKL	BOLA SEPAK
135	MUHAMMAD HAIKAL BIN MAHZAN	25DEE23F1027	PMJ	BOLA SEPAK
136	UMAR BIN OSMAN	09DRI22F2010	PIS	OLAHRAGA
137	MUHAMMAD YAFIK HAKIMI Bin AZMIR ESMAD	09DUP24F1055	PIS	OLAHRAGA
138	IZZATUL NABILA BINTI JAAFAR	09DEV24F2029	PIS	OLAHRAGA
139	NOR MALISYA BINTI MOHD ISHAK	09DRI25F1058	PIS	OLAHRAGA
140	MAIZURAH BINTI SAFREE	09DRI25F1060	PIS	OLAHRAGA
141	ASHERINA KUJA ANAK UJUH	09DTP25F1034	PIS	OLAHRAGA
142	SAMUEL RAJ A/L DANIEL	01DPM24F2034	PUO	OLAHRAGA
143	TARSHAN A/L RAMESHWARAN	01DEP25F1016	PUO	OLAHRAGA
144	DAVIDSON A/L DANIEL	01DPM25F1041	PUO	OLAHRAGA
145	SHREE RAM A/L RAMESH	01DRM24F2037	PUO	OLAHRAGA
146	IAN JOVIC SUAN	07DLS24F2040	PKK	OLAHRAGA
147	BIBI HALINA BINTI ALOYSIUS	07DLS24F2029	PKK	OLAHRAGA
148	NIA JOVIC SUAN	07DPR24F2031	PKK	OLAHRAGA
149	PRASANAKUMARAN MURUGAN	35DSC24F1045	PBD	OLAHRAGA
150	MUHAMMAD AIDID SYAHZWAN BIN MOHD ISA	15DPR25F1056	PSAS	SEPAK TAKRAW

BIL	NAMA	NO.MATRIK	POLITEKNIK	SUKAN
151	KHAWARIZMI BIN ROZALI	15DAT22F1035	PSAS	SEPAK TAKRAW
152	MUHAMMAD AMZAR HAKIMI BIN MOHD NAZIR	15DEM25F1019	PSAS	SEPAK TAKRAW
153	SYAFIQ MUSTAKIM BIN MD SAAD	15DPM22F1034	PSAS	SEPAK TAKRAW
154	PUTRA AIEDIL SHAH A/K ZAINAL	15DRM25F1016	PSAS	SEPAK TAKRAW
155	MUHAMMAD ADY SHAH PUTRA BIN MOHAMAD RIDZUAN	15DKA24F1016	PSAS	SEPAK TAKRAW
156	MUHAMMAD ZAFRAN BIN HAMIDDI	15DET24F1082	PSAS	SEPAK TAKRAW
157	MUHAMMAD ASHRAFF IQWAN BIN NOOR NAWAWI	15DPM25F1051	PSAS	SEPAK TAKRAW
158	MUHAMMAD AZIM BIN AZIZUL	15DET23F1090	PSAS	SEPAK TAKRAW
159	MUHAMMAD HUZIR MUHAIMIN BIN SHAIFUL RIZAL	15DAD25F1067	PSAS	SEPAK TAKRAW
160	MUHAMMAD SYAHIR IZZRAN BIN MUZAMMIR RIZAL	15DPM22F1030	PSAS	SEPAK TAKRAW
161	MUHAMAD HAFIDZ BIN ZAIDI	21DRG25F1070	PBU	SEPAK TAKRAW
162	MUHAMMAD BANIE SALLADINASH BIN OSMAN	21DRG25F1070	PBU	SEPAK TAKRAW
163	MUHAMMAD IMAN BIN ABDUL MANAF	06DEP21F1064	PPD	SEPAK TAKRAW
164	MUHAMMAD TAUFIQ BIN KAMARUZAMAN	08DBK24F1080	PSA	SEPAK TAKRAW

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
SELANGOR DARUL EHSAN
MALAYSIA

Tel.: 603-51634000
Faksimili: 603-55691903
Laman Web: www.psa.edu.my
Facebook : pssaas

MEMO
JABATAN SUKAN, KOKURIKULUM DAN KEBUDAYAAN

Rujukan kami: PSA.600-6/1/10 Jld 4 (55)	Tarikh: 11 OGOS 2025

Perkara	**PELEPASAN PELAJAR KE KEJOHANAN TNB LIGA HOKI REMAJA MALAYSIA (MJHL) 2025**
Kepada	**KJKM**
Daripada	**KETUA JABATAN SUKAN, KO-KURIKULUM DAN KEBUDAYAAN**
Salinan	**FAIL JSKK**

Dengan segala hormatnya saya merujuk perkara di atas.

2. Untuk makluman tuan, seorang pelajar Politeknik ini iaitu **Muhammad Irfan Darwisy bin Azmi, No. Kad Pelajar : 08DKM25F1106** telah dipilih untuk menyertai Kejohanan TNB Liga Hoki Remaja Malaysia (MJHL) 2025 yang akan diadakan pada ketetapan seperti berikut:

Tarikh	:	**23 Julai – 10 Ogos 2025**
Tempat latihan	:	**Kuala Lumpur**

2. Sehubungan itu, mohon kerjasama tuan untuk memberikan pelepasan kuliah pelajar tersebut pada tarikh seperti di atas. Perhatian dan kerjasama pihak tuan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JULIA BINTI MARJUKI)
Ketua Jabatan Sukan, Ko-Kurikulum & Kebudayaan

LAMPIRAN A

KEMENTERIAN PENDIDIKAN MALAYSIA
Sekolah Menengah Kebangsaan Pengkalan Permatang
45000 Kuala Selangor
Selangor Darul Ehsan

Tel 03-32893011
Email [illegible]

Ruj. Kami : SMKPP 800-2/5/14 ( )
Tarikh : 21 Julai 2025

Politeknik Sultan Salahuddin Abdul Aziz Shah
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
Selangor

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
TERIMA
6 AUG 25

Tuan / Puan

PERMOHONAN PELEPASAN PEMAIN KE KEJOHANAN TNB LIGA HOKI REMAJA MALAYSIA (MJHL) 2025

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa Pasukan Hoki SMK Pengkalan Permatang atau PPHT Thunderbolts akan menyertai Kejohanan TNB Liga Hoki Remaja Malaysia (MJHL) 2025 yang akan berlangsung pada 23 Julai 2025 sehingga 10 Ogos 2025. Pemain yang terpilih mewakili pasukan ini adalah;

Nama : Muhammad Irfan Darwisy Bin Azmi
No ic : 070226-10-0455

3. Sehubungan itu, kami berharap tuan dapat memberikan pertimbangan yang sewajarnya kepada permohonan ini. Untuk sebarang maklumat lanjut, pihak tuan boleh menghubungi Pengurus Pasukan En Mohammad Rieazaal Bin Ramli di talian 012 – 3120424. Bersama ini disertakan jadual perlawanan yang melibatkan pasukan PPHT Thunderbolts untuk rujukan pihak tuan.

Kerjasama pihak tuan di dalam perkara ini amat dihargai.

Sekian, terima kasih.

En. Haiz
Mohon sediakan surat pelepasan kutah pelajar.
7/8

"MAJULAH SUKAN UNTUK NEGARA"
"MALAYSIA MADANI"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah

.....
EN. AZHAR BIN OSMAN
Penolong Kanan Pentadbiran
SMK Pengkalan Permatang

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH			
PIC	TINDAKAN	/	CATATAN
	URUSKAN		
	PERTIMBANGAN		
	KIV		
	CADANGAN		
	SILA HADIR		
	SELARASKAN		
	MAKLUM BALAS		
	MAKLUMAN		
	FAIL		
	BINCANGKAN		
	EDARAN		

6/8

M/T Semua pensyarah kursus DKM 1B dan P. Akademik 1B

MUHAMMAD FAIZ BIN ABDULLAH
Ketua Jabatan
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin
Abdul Aziz Shah

CamScanner

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
SELANGOR DARUL EHSAN
MALAYSIA

Tel.: 603-51634000
Faksimili: 603-55691903
Laman Web: www.psa.edu.my
Facebook : pssaas

MEMO
JABATAN SUKAN, KOKURIKULUM DAN KEBUDAYAAN

Rujukan kami: PSA.600-6/1/10 Jld 4 (63)	Tarikh: 14 OGOS 2025

Perkara	**PELEPASAN PELAJAR BAGI MENYERTAI MAJLIS SELANGKAH MENCIPTA GEMILANG – MISI EMAS SUKMA XXII SELANGOR 2025**
Kepada	**KJKM**
Daripada	**KETUA JABATAN SUKAN, KO-KURIKULUM DAN KEBUDAYAAN**
Salinan	**FAIL JSKK**

Dengan segala hormatnya saya merujuk perkara di atas.

2. Untuk makluman tuan, seorang pelajar Politeknik ini iaitu **Muhammad Jawad Al Hamid bin Hasan, No. Kad Pelajar : 08DKM24F1160** telah dipilih untuk menyertai majlis di atas yang akan diadakan pada ketetapan seperti berikut:

Tarikh : **13 – 14 Ogos 2025**
Tempat latihan : **Wisma Darul Iman, Terengganu**

2. Sehubungan itu, mohon kerjasama tuan untuk memberikan pelepasan kuliah kepada pelajar tersebut pada tarikh seperti di atas. Perhatian dan kerjasama pihak tuan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JULIA BINTI MARJUKI)
Ketua Jabatan Sukan, Ko-Kurikulum & Kebudayaan

مجليس سوكن نڬري ترڠڬانو
MAJLIS SUKAN NEGERI TERENGGANU
(Terengganu State Sports Council)
GERBANG SUKAN NEGERI TERENGGANU
JALAN LAPANGAN TERBANG, GONG BADAK, 21300 KUALA NERUS, TERENGGANU

Telefon : 09-667 2577
09-667 2578
Faks (Am) : 09-667 2579

MSN. TR. 09/28/2 JLD. 98 (70)
Bertarikh : 31 Julai 2024
Bersamaan : 06 Safar 1447H

السلام عليكم ورحمة الله وبركاته

TERIMA
12 AUG 2025
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

Pengarah,
Politeknik Sultan Salahuddin Abdul Aziz Shah,
Persiaran Usahawan,
40150 Shah Alam,
SELANGOR.

Tuan,

PERMOHONAN PELEPASAN WAKTU KULIAH BAGI MENYERTAI MAJLIS SELANGKAH MENCIPTA GEMILANG – MISI EMAS BERMULA SUKMA XXII, SELANGOR 2026.

Dengan segala hormatnya, perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan bahawa, Majlis Sukan Negeri Terengganu akan mengadakan Majlis Selangkah Mencipta Gemilang sebagaimana ketetapan berikut:-

PROGRAM	TARIKH MOHON PELEPASAN	TEMPAT
MAJLIS SELANGKAH MENCIPTA GEMILANG – MISI EMAS BERMULA SUKMA XXII, SELANGOR 2026	13 – 14 Ogos 2025 *(Termasuk perjalanan pergi & balik)*	Dewan Besar, Wisma Darul Iman

3. Dimaklumkan jua bahawa, **seorang** pelajar dari institusi tuan iaitu **MUHAMMAD JAWAD AL HAMID BIN HASAN, NO. K/P. : 060311-01-1327** telah terpilih untuk menyertai majlis tersebut.

4. Sehubungan dengan itu, pentadbiran ini memohon jasa baik dan kerjasama pihak tuan untuk meluluskan **PERMOHONAN PELEPASAN WAKTU KULIAH BAGI MENYERTAI MAJLIS SELANGKAH MENCIPTA GEMILANG – MISI EMAS BERMULA SUKMA XXII, SELANGOR 2026** kepada pelajar tersebut. Sebarang pertanyaan boleh menghubungi Cik Junariah binti Mohd Yusof 09-6672577.

Pn. Shahida KJSKT
Pohon sediakan surat Pelepasan kuliah pelajar
13/8.

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PIC	TINDAKAN	/	CATATAN
	URUSKAN		
	PERTIMBANGKAN		
	KIV		
	CADANGAN		
	SILA PADIR		
	SELARAS		
	MAKLUM BALAS		
	[illegible]		
	[illegible]		

"TERENGGANU NELLANG"

Kerjasama dan kelulusan yang tuan berikan dalam perkara ini amatlah kami hargai dan didahului dengan terima kasih jua.

Sekian.

"TERENGGANU MAJU, BERKAT, SEJAHTERA"
"MALAYSIA MADANI"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DR. HAJI NASREE BIN NAJMI)
Timbalan Pengarah (Pembangunan Sukan),
b.p. Pengarah,
Majlis Sukan Negeri,
TERENGGANU.

suratch2025.programmsnt.majlisselangkah.jay14

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
Persiaran Usahawan
Seksyen U1
40150 Shah Alam
SELANGOR DARUL EHSAN
MALAYSIA

Tel.: 603-51634000
Faksimili: 603-55691903
Laman Web: www.psa.edu.my
Facebook : pssaas

MEMO
JABATAN SUKAN, KOKURIKULUM DAN KEBUDAYAAN

Rujukan kami: PSA.600-6/1/10 Jld 4 (87)	Tarikh: 26 OGOS 2025

Perkara	**PELEPASAN PELAJAR BAGI MENYERTAI KEM [PENGUKUHAN MINDA ATLET (SUKAN TAEKWONDO)**
Kepada	**KJKM**
Daripada	**KETUA JABATAN SUKAN, KO-KURIKULUM DAN KEBUDAYAAN**
Salinan	**FAIL JSKK**

Dengan segala hormatnya saya merujuk perkara di atas.

2. Untuk makluman tuan, seorang pelajar Politeknik ini iaitu **Muhammad Jawad Al Hamid bin Hasan, No. Kad Pelajar : 08DKM24F1160** telah dipilih untuk menyertai Kem Pengukuhan Minda Atlet (Sukan Taekwondo) yang akan diadakan pada ketetapan seperti berikut:

Tarikh : 5 – 8 September 2025
Tempat latihan : Peladang Setiu Agro Resort, Terengganu

2. Sehubungan itu, mohon kerjasama tuan untuk memberikan pelepasan kuliah kepada pelajar tersebut pada tarikh seperti di atas. Perhatian dan kerjasama pihak tuan amatlah dihargai dan didahului dengan ucapan terima kasih.

Sekian.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(JULIA BINTI MARJUKI)
Ketua Jabatan Sukan, Ko-Kurikulum & Kebudayaan

مجليس سوكن نكري ترڠكانو
MAJLIS SUKAN NEGERI TERENGGANU
(Terengganu State Sports Council)
GERBANG SUKAN NEGERI TERENGGANU
JALAN LAPANGAN TERBANG, GONG BADAK, 21300 KUALA NERUS, TERENGGANU

Telefon : 09-667 2577
09-667 2578
Faks (Am) : 09-667 2579

TERIMA
20 AUG 2025
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

MSN. TR. 09/28/2 JLD. 100 (30)
Bertarikh : 18 Ogos 2025
Bersamaan : 24 Safar 1447H

السلام عليكم ورحمة الله وبركاته

Pengarah,
Politeknik Sultan Salahuddin Abdul Aziz Shah,
Persiaran Usahawan,
40150 Shah Alam,
SELANGOR.

Tuan,

PERMOHONAN PELEPASAN WAKTU KULIAH BAGI MENYERTAI KEM PENGUKUHAN MINDA ATLET (SUKAN TAEKWONDO).

Dengan segala hormatnya, perkara di atas adalah dirujuk.

2. Sukacita dimaklumkan bahawa, Majlis Sukan Negeri Terengganu akan mengadakan kem pengukuhan minda atlet SUKMA 2026 seperti ketetapan berikut :-

PROGRAM	TARIKH PELEPASAN	TEMPAT
KEM PENGUKUHAN MINDA ATLET (SUKAN TAEKWONDO)	05 – 08 Sept. 2025 *(Termasuk perjalanan pergi & balik)*	Peladang Setiu Agro Resort, Setiu, Terengganu

3. Dimaklumkan jua bahawa, **seorang** pelajar dari institusi tuan iaitu **MUHAMMAD JAWAD AL HAMID BIN HASAN, NO. K/P. : 060311-01-1327** telah terpilih untuk menyertai kem tersebut.

4. Sehubungan dengan itu, pentadbiran ini memohon jasa baik dan kerjasama pihak tuan untuk meluluskan **PERMOHONAN PELEPASAN WAKTU KULIAH BAGI MENYERTAI KEM PENGUKUHAN MINDA ATLET (SUKAN TAEKWONDO)** kepada pelajar tersebut. Sebarang pertanyaan boleh menghubungi *Encik Ali bin Tengah* 019-9796234.

Pn. Shalida
Pohon sediakan surat pelepasan kuliah pelajar.
21/8

KTSKK

"TERENGGANU NELANG"

"KESEMPURNAAN KERJA TANGGUNGJAWAB KAMI"

KPTK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

PIC	TINDAKAN	/	CATATAN
	URUSKAN		
	PERTIMBANGKAN		
	KIV		
	CADANGAN		
	SILA HADIR		
	SELARASKAN		
	MAKLUM BALAS		

20/8

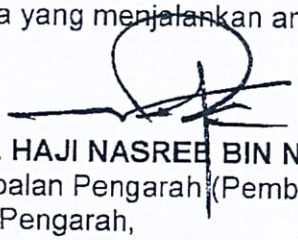
Beautiful Terengganu
Malaysia

Kerjasama dan kelulusan yang tuan berikan dalam perkara ini amatlah kami hargai dan didahului dengan terima kasih jua.

Sekian.

"TERENGGANU MAJU, BERKAT, SEJAHTERA"
"MALAYSIA MADANI"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,



(DR. HAJI NASREE BIN NAJMI)
Timbalan Pengarah (Pembangunan Sukan),
b.p. Pengarah,
Majlis Sukan Negeri,
TERENGGANU.

suratotr2025 politokniksel.jay14

Pertandingan Kemahiran Politeknik & Kolej Komuniti (PolyccSkills) 2025
8 –11 September 2025.

Bidang Mechanical Engineering CAD (JKM – PTSB)

Shafuan Hazmi bin Zaidi – Pingat Emas

Khabi Adam Faris bin Khabi Shabri – Pingat Gangsa

(Jurulatih: Pn. Shariza Azwin & En. Skh Muhammad)

Bidang Aircraft Sheet Metal (JKM – PBS)

Aarvind Raj A/L Shivaraja – Pingat Perak

Jurulatih: Pn. Norlidawati binti Mohamad

<u>Pertandingan Digital Innovation Creativepreneur (DICE 3.0)</u>

1–4 September 2025

Persada Johor International Convention Centre, Johor Bahru

Anjuran Universiti Sultan Zainal Abidin (UniSZA).

Pencapaian : Pingat Gangsa bagi kategori Video Pendek

Nur Zuhayra Nashran Mohd Zulfahmi (JPG)

Ally Mirza Mokhtarrudin Bin Norhisham (JPG)

Nur Ainul Syafiah Binti Aznan (JPG)

Muhammad Fahiem Syahir Bin Ahmad Faldzi (JKM)

Mentor:

Pn. Julianti Binti Samsudin (JPG)

Pn. Diana Binti Nasarudin (JPG)

Pn. Hazlina Hatumaini (JPA)

Karnival Harta Intelek Polycc 2025

8-10 September 2025

Anjuran Politeknik Sabak Bernam

Pencapaian : Tempat Ketiga Keseluruhan & Pingat Emas

<u>Pertandingan Calculus Board sempena Karnival STEAM 2025</u>

28 Ogos 2025

Politeknik Sultan Abdul Halim Mu'adzam Shah Official

i. Wong Guan Cheng (JKE)
ii. Muhammad Arif Nazran Bin Mohd Jasni (JKM)
iii. Umar Al-Faruq Bin Solahuddin (JKM)

Di bawah bimbingan Puan Nor Aishah Bt Ahmad & Encik Panneer Selvam A/L Indiran dari Jabatan Matematik Sains & Komputer, PSA

POLYCC BATTLE SHOWDOWN 2025: RHYTHM OF REVOLUTION

Anjuran Bahagian Ambilan dan Pembangunan Pelajar (BAPP), JPPKK

Kelolaan Politeknik Sultan Azlan Shah (PSAS) 11 hingga 13 April 2025

BEHRANG, 13 APRIL 2025 - Tuah ayam nampak di kaki tuah manusia siapa yang tahu. SONATA dari Pencapaian : JOHAN 2025.

Anugerah Keyboardist Terbaik : MUHAMMAD HADIF FAHMI BIN HARFENDY (JKM)

Dengan diiringi oleh Puan Wahida Mohamad Noor, Ketua Unit Kebudayaan JSKK PSA merangkap Penasihat Semarak Seni, Kumpulan Sonata PSA ini diwakili oleh:

1. Muhammad Hadif Fahmi Bin Harfendy (JKM) Keyboardist

2. Muslihuddin Farihin Bin Mustapha (JKM) Vokalis

3. Batrisyia Auni Nadhirah Binti Mohd Alifudin (JKE) Vokalis

4. Megat Muhammad Haikal Bin Wan Megat Abd Jalil (JKM) Rhtym Guitarist

5. Dhia Nursyasha Binti Nizan (JKM) Lead Guitarist

6. Timothy Jonathan Jalinus (JKM) Bassist

7. Ahmad Fairul Haziq Bin Abd Razak (JKM) Drummer

8. Rozma `Qarlia Binti Rozalan (JPG) – Crew/Mua

9. Nuruljannah Binti Mohamed Irwan (JKM) Crew /Media

10. Nur Batrisya Binti Faezal (JKE) Crew /Media

11. Muhammad Isyraf Iman Bin Muhammad Syahmi (JKM) Crew /Media

12. Puteri Khairul Bariyah Binti Mohd Sulaiman (JKE) Crew

13. Mohamad Irfan bin Mohd Fauzi (JPG) Crew

14. Muhammad Syamim bin Malik Alumni JKA - jurulatih bersama

<u>Pertandingan Young Socialpreneur Program All Starz (YS2P 2025)</u>
POLISAS Kuantan
19 & 20 Ogos 2025
Projek yang bertajuk Sewaan Katil Hospital Sekali Bayar Sahaja.
Pencapaian : Juara & CEO terbaik

Program Young SocialPreneur Programe All Starz (YS2P All Starz) ini merupakan program edisi khas yang dirangka untuk mencungkil, membimbing, dan mengiktiraf bakat keusahawanan sosial serta mengumpul institusi PolyCC yang pernah meraih kejayaan bermula YS2P 2017, YS2P 2.0 2018 dan YS2P 3.0 2023. YS2P All Starz memberi tumpuan kepada pembangunan pelajar sebagai social changemakers iaitu individu yang bukan sahaja mempunyai kemahiran keusahawanan tetapi juga peka terhadap isu-isu sosial dan berdaya cipta dalam mencari penyelesaian yang memberi impak positif kepada komuniti.
Melalui pendekatan yang holistik dan berimpak tinggi, YS2P All Starz menjadi platform pelajar mempersembahkan projek keusahawanan sosial mereka yang kreatif, inovatif dan lestari, serta memberi inspirasi kepada pelajar lain untuk turut serta menyumbang kepada pembangunan masyarakat.

Virtual Innovation Competition 2025

31 Mei 2025

Projek : EZ Problade

Pencapaian : Pingat Emas

Projek : Elavator X

Pencapaian : Pingat Emas

KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

BUKU PANDUAN

PELAKSANAAN SISTEM PENASIHATAN AKADEMIK (SPAk)

POLITEKNIK MALAYSIA

KEMENTERIAN PENGAJIAN TINGGI

KEMENTERIAN PENGAJIAN TINGGI
BPSPAKPOLY EDISI 2022

EDISI 2022

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BUKU PANDUAN
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EDISI 2022

KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

Terbitan Edisi 2022

Hak cipta terpelihara. Tiada bahagian daripada terbitan ini boleh diterbitkan semula, disimpan untuk pengeluaran atau ditukarkan ke dalam sebarang bentuk atau dengan sebarang alat, sama ada dengan cara elektronik, gambar dan rakaman serta sebagainya tanpa kebenaran bertulis daripada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi terlebih dahulu.

Diterbitkan oleh:

Bahagian Instruksional dan Pembelajaran Digital,
Jabatan Pendidikan Politeknik dan Kolej Komuniti
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62100 Putrajaya.

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Buku Panduan Pelaksanaan Sistem Penasihatan Akademik (SPAk) Politeknik Malaysia KPT Edisi 2022

Semakan Kedua	Edisi 2022
Semakan Pertama	Edisi 2016
Pengenalan	Edisi 2012

PRAKATA

Bahagian Instruksional dan Pembelajaran Digital (BIPD), Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) ingin merakamkan ucapan terima kasih di atas segala komitmen dan sokongan semua pihak di dalam pembangunan **Buku Panduan Sistem Penasihatan Akademik (SPAk) Politeknik Malaysia Edisi 2022** ini.

Buku Panduan ini adalah sebagai rujukan dan panduan umum terutamanya kepada Jawatankuasa Sistem Penasihatan Akademik (SPAk) dan Penasihat Akademik (PA) dalam pelaksanaan SPAk di Politeknik Malaysia. Buku panduan ini memberi penjelasan tentang matlamat pelaksanaan SPAk, tugas, peranan dan tanggungjawab pegawai yang terlibat, carta alir pelaksanaan serta pelaporan. Ia juga bertujuan untuk menyelaras pelaksanaan SPAk di semua politeknik; namun, ianya tertakluk kepada keperluan serta kesesuaian di peringkat politeknik, jabatan, program, pelajar dan kekuatan sumber yang ada di politeknik masing-masing.

Setinggi penghargaan dan ucapan terima kasih kepada ahli jawatankuasa serta semua pihak yang telah sama-sama terlibat dalam penerbitan buku panduan ini. Semoga ianya dapat dimanfaatkan sebaiknya dalam memperkasakan aspek sokongan pembangunan pelajar di Politeknik Malaysia di samping menjadi pendorong untuk melahirkan modal insan TVET yang berkualiti dan holistik, berciri keusahawanan dan seimbang selaras dengan hasrat Pelan Pembangunan Pendidikan Malaysia 2015 - 2025 (Pendidikan Tinggi) serta mampu mencipta kecemerlangan dalam hidup dan kerjaya. Modal insan yang menjadi hasrat negara bukan sekadar berasaskan kecemerlangan akademik, malahan cemerlang dari segi keperibadian dan sahsiah. Golongan ini dituntut agar dapat memelihara kemakmuran dan kesejahteraan serta kelangsungan Negara.

Selain itu, kerjasama daripada semua pihak membolehkan politeknik dan kolej komuniti mencapai matlamatnya dan seterusnya menjadikan politeknik dan kolej komuniti sebagai institusi yang signifikan dalam pembangunan negara.

Jabatan Pendidikan Politeknik dan Kolej Komuniti
Kementerian Pengajian Tinggi
2022

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SISTEM PENASIHATAN AKADEMIK (SPAk)
POLITEKNIK MALAYSIA

1.0 PENDAHULUAN

Sistem Penasihatan Akademik (SPAk) telah diperkenalkan di Politeknik Malaysia sejak tahun 2004. SPAk diwujudkan sebagai satu medium perhubungan yang sistematik kepada pelajar untuk mendapatkan bimbingan, nasihat dan berbincang perihal akademik bersama Penasihat Akademik (PA) masing-masing. PA merupakan salah satu tugas hakiki Pegawai Pendidikan Pengajian Tinggi (PPPT) yang dilantik sebagai pensyarah di politeknik dan kolej komuniti berdasarkan punca kuasa dan pewartaan Pekeliling Perkhidmatan Bilangan 33 Tahun 2007, Jabatan Perkhidmatan Awam (JPA) dan Buku Panduan Skop Tugas dan Tanggungjawab Pegawai Pendidikan Pengajian Tinggi Edisi Pertama Tahun 2014, Jabatan Pendidikan Politeknik (JPP). Setiap pelajar akan diselia dan dibimbing oleh PA yang dilantik dalam kalangan pensyarah dari Jabatan Induk dan Jabatan Sokongan Akademik sepanjang pelajar menjadi pelajar politeknik.

SPAk berperanan sebagai satu pendekatan ke arah pembentukan pelajar yang berilmu, bertanggungjawab, berkebolehan dan berdaya saing dalam membentuk pelajar berpesonaliti unggul. Dalam erti kata sebenar, SPAk bertujuan untuk melahirkan golongan pelajar yang cemerlang dari segi akademik, sahsiah diri serta bertanggungjawab. Pernyataan ini diselarikan dengan tujuan SPAk iaitu membantu pelajar menyesuaikan diri dalam sistem pengajian di politeknik serta memberi khidmat nasihat dan bimbingan kepada pelajar untuk mencapai kecemerlangan akademik, kemahiran generik dan kesediaan kendiri dalam kerjaya berpandukan Modul Inspirasi Diri (MInD).

Penglibatan Pengarah, Timbalan Pengarah (Akademik), Ketua Jabatan, Penyelaras Penasihat Akademik Politeknik, Penyelaras Penasihat Akademik Jabatan, Penasihat Akademik, Pegawai Psikologi, Pegawai dari Unit Teknologi Maklumat, Pegawai dari Unit *Corporate, Industrial Services and Employment Centre* (CISEC), Penyelaras Psikologi Jabatan, Pegawai CISEC Jabatan dan Pegawai Hal Ehwal Pelajar (HEP) serta warga politeknik amnya melalui SPAk ini dilihat berupaya untuk membantu pelajar meningkatkan kemahiran dan mengatur strategi bagi mencapai keseimbangan kecemerlangan akademik dan rohani sebagai usaha membangunkan modal insan holistik dan seimbang, bercirikan keusahawanan, selari dengan industri serta memenuhi aspirasi negara seiring dengan Pelan Pembangunan Pendidikan Malaysia (Pendidikan Tinggi) 2015-2025 dan Pelan Strategik Politeknik dan Kolej Komuniti (2018-2025).

Justeru, Buku Panduan Pelaksanaan SPAk ini dibangunkan bertujuan untuk menyeragamkan tatacara kerja serta pembudayaan pengendalian aktiviti SPAk yang lebih efisyen di politeknik supaya lebih kemas, teratur serta berjalan lancar dan seterusnya dapat meningkatkan kualiti perkhidmatan sokongan pelajar yang berkesan.

***Nota**:*

Pelaksanaan SPAk yang digariskan ini tertakluk kepada keperluan serta kesesuaian di peringkat politeknik, jabatan, program, pelajar dan sumber yang ada di politeknik masing-masing.

2.0 MATLAMAT SISTEM PENASIHATAN AKADEMIK (SPAk)

2.1 SPAk Politeknik diwujudkan agar pelajar berupaya:

2.1.1 merancang pengajian, menyusun struktur pembelajaran dan aktiviti ke arah meningkatkan pencapaian kurikulum dan kokurikulum;

2.1.2 mengenal pasti potensi diri dan mengatasi kelemahan diri;

2.1.3 mempelbagaikan kemahiran insaniah bagi mencapai matlamat diri; dan

2.1.4 mendapat pendedahan mengenai laluan kerjaya dan melengkapkan diri dalam menghadapi alam pekerjaan

2.2 Matlamat Dokumen Pelaksanaan SPAk (Buku Panduan Pelaksanaan SPAk dan Modul Inspirasi Diri, MInD) diwujudkan adalah sebagai:

2.2.1 rujukan utama bagi pelaksanaan dan pengendalian aktiviti SPAk oleh PA di politeknik;

2.2.2 panduan bagi memenuhi ketetapan sasaran kerja pelaksanaan SPAk di politeknik;

2.2.3 pembimbing kepada PA dalam mempelbagaikan kaedah interaksi dengan pelajar bagi memenuhi kriteria penetapan peruntukan jam pertemuan PA bersama pelajar setiap minggu minimum **SATU (1)** jam seminggu; dan

2.2.4 alat bantuan PA bagi mencungkil potensi diri pelajar dalam usaha membantu meningkatkan pencapaian akademik dan sahsiah keperibadian yang holistik.

2.3 Sasaran Kerja SPAk

2.3.1 Sasaran Kerja SPAk yang perlu dipenuhi oleh politeknik adalah seperti berikut:

(a) melaksanakan aktiviti mingguan SPAk serta melengkapkan Laporan Pemantauan SPAk; dan

(b) memastikan pelajar di bawah seliaan PA melaksanakan Penilaian Keberkesanan SPAk mengikut sasaran yang ditetapkan

***Nota**:*

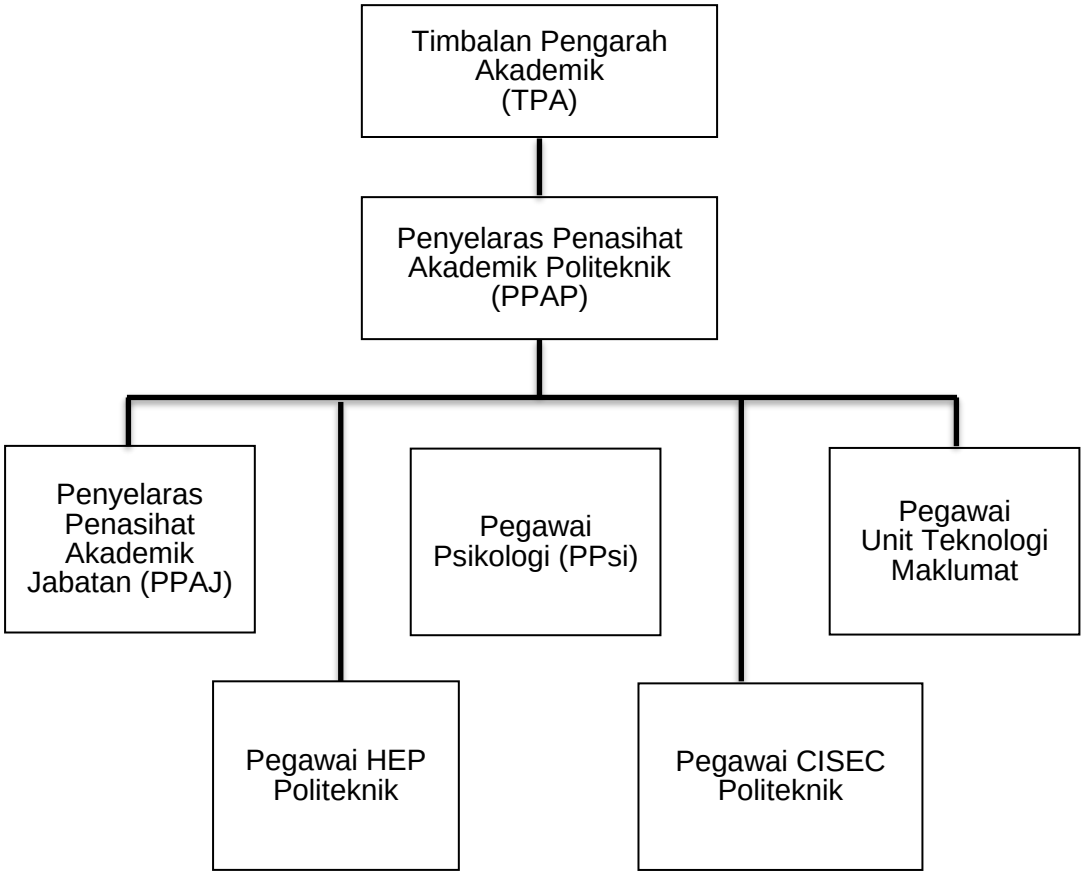
Peratusan Sasaran Kerja SPAk adalah berdasarkan surat punca kuasa pelaksanaan SPAk Politeknik Malaysia yang sedang berkuat kuasa.

3.0 PERANAN DAN TANGGUNGJAWAB

Pelaksanaan SPAk melibatkan peranan dan tanggungjawab Pengarah, Timbalan Pengarah (Akademik) (TPA), Ketua Jabatan (KJ), Penyelaras Penasihat Akademik Politeknik (PPAP), Penyelaras Penasihat Akademik Jabatan (PPAJ), Penasihat Akademik (PA), Pegawai Psikologi (PPsi), pegawai dari Unit CISEC, pegawai dari Unit Teknologi Maklumat (UTM), Penyelaras Psikologi Jabatan, Pegawai CISEC Jabatan dan Pegawai HEP.

3.1 Jawatankuasa SPAk Politeknik

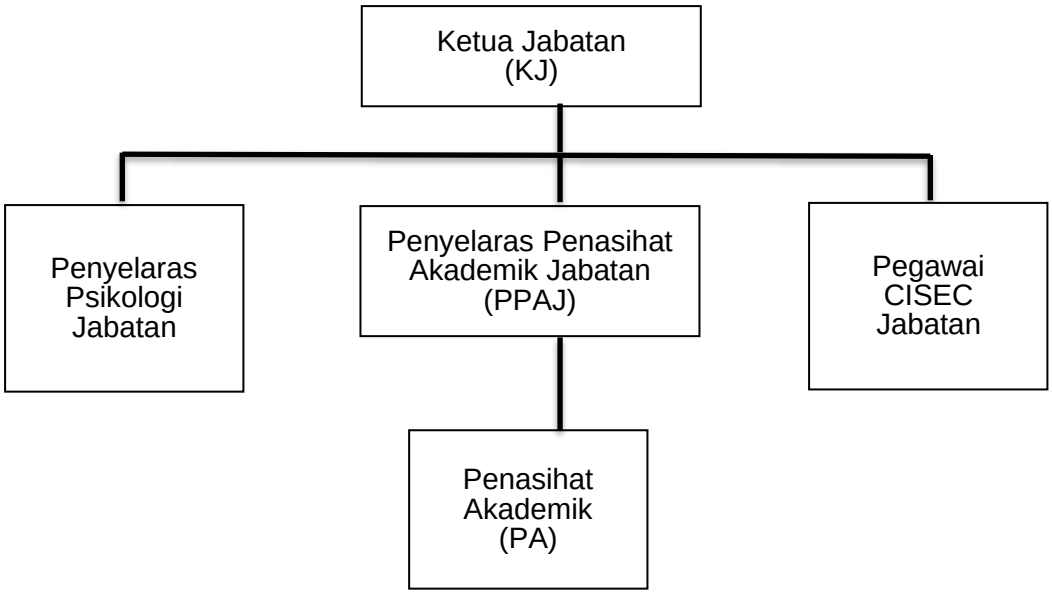
Jawatankuasa SPAk Politeknik bertanggungjawab dalam merancang, menyelaras dan memantau pelaksanaan SPAk di politeknik. Jawatankuasa yang dicadangkan adalah seperti di Rajah 1.



Rajah 1: Jawatankuasa SPAk Politeknik

3.2 Jawatankuasa SPAk Jabatan

Jawatankuasa SPAk Jabatan bertanggungjawab dalam merancang, menyelaras dan memantau pelaksanaan SPAk di jabatan. Jawatankuasa yang dicadangkan adalah seperti di Rajah 2.



Rajah 2: Jawatankuasa SPAk Jabatan

3.3 Peranan dan Tanggungjawab Jawatankuasa Sistem Penasihatan Akademik (SPAk)

BIL.	AHLI JAWATANKUASA	PERANAN DAN TANGGUNGJAWAB
1.	**Pengarah**	(a) Penasihat Jawatankuasa Politeknik. (b) Melantik PPAP dan membentuk jawatankuasa SPAk.
2.	**Timbalan Pengarah (Akademik), TP(A)**	(a) Membentuk Jawatankuasa SPAk Politeknik. (b) Mempengerusi mesyuarat Jawatankuasa Pelaksanaan SPAk politeknik. (c) Menguruskan peruntukan sumber bagi aktiviti/taklimat/ bengkel/program di politeknik. (d) Memantau pelaksanaan SPAk di politeknik. (e) Memberi cadangan penambahbaikan SPAk di politeknik.
3.	**Ketua Jabatan (KJ)**	(a) Melantik PPAJ dan PA di jabatan termasuk jabatan sokongan. (b) Memantau pelaksanaan SPAk di jabatan. (c) Penetapan peruntukan masa **SATU (1) jam** pertemuan PA di dalam jadual waktu. (d) Memastikan aktiviti SPAk jabatan dilaksanakan mengikut perancangan. (e) Melaksanakan aktiviti penambahbaikan SPAk di jabatan.

BIL.	AHLI JAWATANKUASA	PERANAN DAN TANGGUNGJAWAB
4.	**Penyelaras Penasihat Akademik Politeknik (PPAP)**	(a) Menyediakan Takwim Pelaksanaan SPAk politeknik. (b) Merancang aktiviti dan mengenal pasti keperluan sumber yang diperlukan dalam SPAk. (c) Memberi taklimat pelaksanaan SPAk kepada pelajar baharu pada minggu suai kenal. (d) Melaksanakan perjumpaan/mesyuarat bersama Penyelaras Penasihat Akademik Jabatan (PPAJ) sekurang-kurangnya satu (1) kali setiap semester. (e) Mengadakan Mesyuarat Jawatankuasa Pelaksanaan SPAk Politeknik sekurang-kurangnya satu (1) kali setiap semester. (f) Memantau pelaksanaan taklimat/bengkel kepada PA di jabatan pada setiap semester. (g) Memastikan PPAJ memantau penghantaran Laporan Pemantauan SPAk Minggu 8 dan Minggu 14 oleh PA. (h) Memantau pelaksanaan Penilaian Keberkesanan SPAk secara keseluruhan. (i) Menyediakan analisis Laporan Keseluruhan Pemantauan SPAk sepanjang semester. (j) Melaksanakan aktiviti penambahbaikan terhadap SPAk secara keseluruhan (jika ada). (k) Pentadbir Modul iPAd: (i) set akses PPAJ sebagai Penyelaras; (ii) kemas kini PA sesi baru; (iii) set sesi; (iv) daftar minggu pengajian; (v) batal pelajar di bawah PA (jika ada pertukaran PA); (vi) semakan maklumat pelajar individu; (vii) semakan maklumat pelajar ikut kelas; (viii) semakan pelajar tiada PA; (ix) semakan ketidakhadiran pelajar (kursus); dan (x) jana Laporan Keseluruhan Pemantauan SPAk. (l) Menyediakan Laporan Pemantauan SPAk Politeknik Minggu 8 dan Minggu 14. (m) Menyediakan Laporan Analisis Penilaian Keberkesanan SPAk Politeknik. (n) Menyediakan Laporan Penambahbaikan Kualiti Berterusan (CQI) Pelaksanaan SPAk Politeknik. (o) Membentangkan pelaporan SPAk di dalam Mesyuarat Akademik atau mana-mana mesyuarat yang melibatkan pengurusan politeknik. (p) Memastikan pelaksanaan SPAk berjalan dengan lancar.
5.	**Penyelaras Penasihat Akademik Jabatan (PPAJ)**	(a) Memberi taklimat kepada semua PA di jabatan sekurang-kurangnya **satu (1)** kali pada setiap semester. (b) Membuat agihan kumpulan pelajar bagi setiap PA. (c) Memastikan PA melengkapkan Laporan Pemantuan SPAk Minggu 8 dan Minggu 14. (d) Menyediakan Analisis Laporan Keseluruhan Pemantauan SPAk di jabatan sepanjang semester. (e) Melaksanakan aktiviti SPAk di jabatan mengikut perancangan. (f) Memantau PA dalam memastikan pelajar di jabatan membuat penilaian keberkesanan SPAk.

BIL.	AHLI JAWATANKUASA	PERANAN DAN TANGGUNGJAWAB
		(g) Melaksanakan aktiviti penambahbaikan terhadap SPAk hasil daripada analisis laporan. (h) Memastikan pelaksanaan program/aktiviti berkaitan penasihatan akademik kepada pelajar sekurang-kurangnya satu (1) kali setiap semester. (i) Menyediakan Laporan Penambahbaikan Kualiti Berterusan (CQI) Pelaksanaan SPAk di jabatan. (j) Membentangkan pelaporan SPAk di dalam mesyuarat di peringkat Jabatan. (k) Memastikan PA mempunyai/menyediakan dokumen yang terdapat dalam Senarai Semak Fail Rekod Penasihat Akademik (FRPA).
6.	**Penasihat Akademik (PA)**	(a) Menerima lantikan sebagai PA bagi kelas yang telah ditetapkan. (b) Melaksanakan pertemuan PA dengan pelajar sekurang-kurangnya **SATU (1)** jam seminggu. (c) Merekodkan setiap pertemuan dan perbincangan yang diadakan. (d) Membantu pelajar memahami kurikulum, sistem semester, sistem pendaftaran kursus, struktur program, peraturan-peraturan yang berkaitan dan sistem peperiksaan termasuk penggunaan Sistem Pengurusan Maklumat Politeknik (SPMP). (e) Memberi bimbingan dan nasihat berkaitan akademik dan sokongan akademik kepada pelajar dengan sewajarnya dan jika perlu merujuk perkara tersebut kepada pihak-pihak tertentu. (f) Mengesan dan merujuk pelajar yang memerlukan perhatian khas seperti sokongan psikologi, runding cara atau bimbingan kepada pihak yang berkenaan. (g) Memantau kehadiran dan kemajuan prestasi pelajar melalui kaedah yang bersesuaian. (h) Memastikan pelajar di bawah seliaan membuat penilaian keberkesanan SPAk. (i) Melengkapkan Laporan Pemantuan SPAk Minggu 8 dan Minggu 14. (j) Mengemaskini dokumen atau rekod di dalam Fail Penasihat Akademik secara bercetak atau secara dalam talian (modul iPAd SPMP). (k) Pemudah cara domain-domain yang berkaitan dalam Modul Inspirasi Diri (MInD). (l) Mengurus modul iPAd SPMP: (i) Menu Penasihatan Akademik; (ii) Penilaian Keberkesanan SPAk; (iii) Pemantauan Mingguan Pelajar; (iv) Pendaftaran Kursus; (v) Kehadiran Kursus; (vi) Peperiksaan; (vii) Semakan Aduan; dan (viii) Menu Pengesahan Latihan Industri. (m) PA perlu menyimpan dokumen-dokumen yang terdapat dalam Senarai Semak FRPA sehingga pelajar menamatkan pengajian (selepas konvokesyen).

BIL.	AHLI JAWATANKUASA	PERANAN DAN TANGGUNGJAWAB
7.	**Pegawai Psikologi (PPsi)**	(a) Melaksanakan Ujian Psikometrik dan menerangkan analisis keputusan ujian yang berkaitan kepada pelajar serta menghantar laporan kepada PPAP/PPAJ. (b) Membantu menyelaras aktiviti berkaitan psikologi merujuk kepada Modul Inspirasi Diri (MInD). (c) Melaksana dan memberi perkhidmatan bimbingan, psikologi dan kaunseling berdasarkan rujukan daripada PA. (d) Merancang dan melaksana program/aktiviti psikologi berkaitan SPAk secara optimum. (e) Bekerjasama dengan PPAP dalam menyediakan latihan kepada PPAJ dan PA berkaitan dengan pelaksanaan serta penggunaan Modul Inspirasi Diri (MInD).
8.	**Pegawai *Collaboration, Industrial Services and Employment Centre* (CISEC)**	(a) Membantu menyelaras aktiviti CISEC merujuk kepada Modul Inspirasi Diri (MInD): (i) membantu pelajar dalam menentukan laluan kerjaya dan kebolehpasaran selepas menamatkan pengajian; (ii) memberi taklimat berkaitan penyediaan resume dan surat/e-mel permohonan perjawatan; (iii) memberi taklimat berkaitan persediaan menghadapi temuduga; dan (iv) memberi taklimat berkaitan cara pengisian Sistem Kajian Pengesanan Graduan (SKPG).
9.	**Pegawai Unit Teknologi Maklumat**	(a) Menyelenggara modul Pengurusan Penasihatan Akademik (iPAd) dalam Sistem Pengurusan Maklumat Politeknik (SPMP) atau sistem lain yang berkaitan; (b) Menyediakan bantuan teknikal (*helpdesk*); dan (c) Menambah baik capaian sistem dalam talian dari semasa ke semasa mengikut keperluan politeknik.
10.	**Penyelaras Psikologi Jabatan**	(a) Membantu menyelaras aktiviti di jabatan berkaitan psikologi merujuk kepada Modul Inspirasi Diri (MInD). (b) Menerima senarai pelajar yang memerlukan khidmat bimbingan kaunseling dan membuat rujukan kepada Unit Pengurusan Psikologi. (c) Mengurus pelajar yang mengikuti program/aktiviti yang dianjurkan oleh Unit Pengurusan Psikologi.
11.	**Pegawai CISEC Jabatan**	(a) Membantu menyelaras aktiviti di jabatan berkaitan CISEC merujuk kepada Modul Inspirasi Diri (MInD). (b) Menyediakan senarai pelajar serta mengurus pelajar yang akan mengikuti program yang dilaksanakan oleh Unit CISEC.
12.	**Pegawai Hal Ehwal Pelajar (HEP)**	(a) Pengurusan peruntukan keperluan aktiviti pelajar. (b) Menyemak dan menyokong kertas kerja aktiviti pelajar.

4.0 PROSEDUR PELANTIKAN

Politeknik disarankan untuk melantik pegawai-pegawai yang terlibat dalam pelaksanaan SPAk. Pelantikan pegawai-pegawai ini merupakan lantikan dalaman politeknik oleh Pengarah dan Ketua-ketua Jabatan. Walau bagaimanapun, lantikan mengikut gred adalah tertakluk kepada kesesuaian perjawatan yang terdapat di politeknik.

4.1 Penyelaras Penasihat Akademik Politeknik (PPAP)

Pengarah melantik PPAP dalam kalangan PPPT gred DH54/DH52/DH48 yang akan menyelaras dan mengetuai pelaksanaan SPAk di politeknik serta menjadi pegawai perhubungan antara politeknik dan JPPKK.

4.2 Penyelaras Penasihat Akademik Jabatan (PPAJ)
Ketua Jabatan (KJ) melantik PPAJ dalam kalangan PPPT gred DH52/DH48/DH44 yang akan membantu PPAP serta menyelaras dan mengetuai pelaksanaan SPAk di jabatan.

4.3 Penasihat Akademik (PA)

4.3.1 KJ melantik PA dalam kalangan PPPT sama ada dari Jabatan Induk atau Jabatan Sokongan Akademik yang akan membantu PPAP dan PPAJ melaksanakan SPAk di politeknik.

4.3.2 PA yang dilantik perlu melaksanakan tugas PA sehingga pelajar tamat pengajian termasuk pelajar yang sedang menjalani Latihan Industri (LI) dan *Work Based Learning* (WBL).

4.4 Jawatankuasa SPAk

4.4.1 Pengarah boleh melantik pegawai-pegawai lain yang terlibat dalam pelaksanaan SPAk seperti Pegawai Psikologi (PPsi), Pegawai dari Unit Teknologi Maklumat (UTM), Pegawai dari Unit *Collaboration, Industrial Services and Employment Centre* (CISEC), dan Pegawai Hal Ehwal Pelajar (HEP) sebagai Ahli Jawatankuasa Pelaksanaan SPAk di politeknik.

5.0 PELAKSANAAN SISTEM PENASIHATAN AKADEMIK (SPAk)

Berikut merupakan Carta Alir Pelaksanaan SPAk, penggunaan kitaran penyelesaian masalah *Plan, Do, Check* dan *Action (PDCA)* dalam melaksanakan SPAk, Carta Alir Peranan PPAP, PPAJ dan PA. Rujuk **LAMPIRAN I** bagi contoh perancangan pelaksanaan SPAk sepanjang pengajian pelajar mengikut semester termasuk penggunaan MInD.

5.1 Carta Alir Pelaksanaan SPAk

Berikut merupakan carta alir pelaksanaan SPAk di peringkat politeknik:

Carta Alir	Pelaksana
Mula	
Melantik dan membentuk jawatankuasa SPAk Politeknik	Pengarah / TP(A) / KJ
Merancang dan menyelaras pelaksanaan SPAk	Jawatankuasa SPAk
Pelaksanaan SPAk di peringkat politeknik dan jabatan	PPAP/PPAJ/PA
Menyediakan Laporan Pelaksanaan SPAk	PPAP/PPAJ/PA
Membentangkan Laporan Pelaksanaan SPAk di peringkat politeknik	PPAP
Melaksanakan Penambahbaikan Kualiti Berterusan (CQI) Pelaksanaan SPAk	PPAP
Tamat	

5.2 Pelaksanaan SPAk dengan Kitaran *Plan, Do, Check* dan *Action* (PDCA)

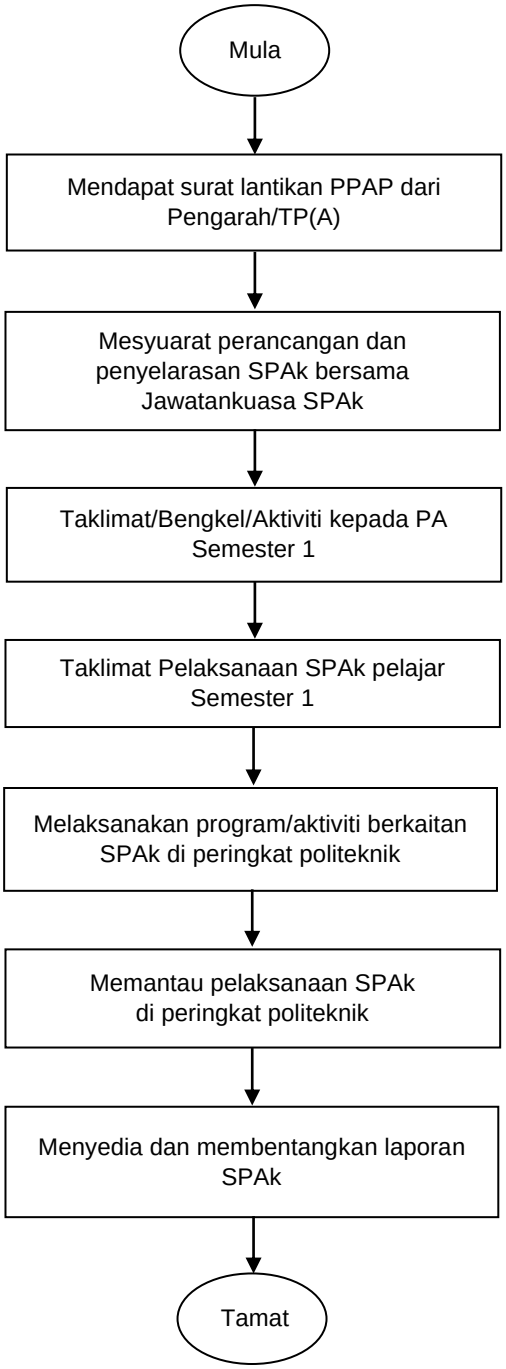
PDCA	Aktiviti	Tanggungjawab
RANCANG *(PLAN)*	Melantik PPAP, PPAJ dan membentuk Jawatankuasa SPAk.	Pengarah/TP(A)/KJ
	Melantik PA dari jabatan induk dan jabatan sokongan akademik melalui Ketua Jabatan masing-masing.	KJ
	Penetapan peruntukan jam pertemuan PA dengan pelajar minimum **SATU (1) jam** seminggu di dalam jadual waktu induk dan jadual waktu pensyarah.	TP (A)
	Merancang program/aktiviti berkaitan Penasihatan Akademik sekurang-kurangnya **SATU (1) kali** setiap semester.	Jawatankuasa SPAk
	Menyediakan takwim perancangan/pelaksanaan SPAk.	PPAP
	Taklimat SPAk kepada PA sekurang-kurangnya **SATU (1) kali** setiap semester.	PPAP/PPAJ
	Taklimat pelaksanaan SPAk kepada pelajar baharu.	PPAP
	Mengagihkan pelajar kepada setiap PA mengikut kelas.	PPAJ
LAKSANA *(DO)*	Perjumpaan/Mesyuarat bersama PPAJ dan PA sekurang-kurangnya **SATU (1) kali** setiap semester.	PPAP
	Melaksanakan program/aktiviti berkaitan SPAk sekurang-kurangnya **SATU (1) kali** setiap semester.	Jawatankuasa SPAk
	Melaksanakan aktiviti mingguan SPAk serta melengkapkan Laporan Pemantauan Pelaksanaan SPAk.	PA
	Memantau pelaksanaan SPAk sepanjang semester.	PPAP/PPAJ
	Menyediakan Laporan Pemantauan SPAk dan Laporan Analisis Penilaian Keberkesanan SPAk.	PPAP/PPAJ
	Menyedia dan membentang Laporan Penambahbaikan Kualiti Berterusan (CQI) Pelaksanaan SPAk.	PPAP/PPAJ
SEMAK *(CHECK)*	Memastikan pelajar di bawah seliaan PA melaksanakan Penilaian Keberkesanan SPAk mengikut sasaran yang ditetapkan.	PA
	Menyemak Laporan Pemantauan SPAk dan Laporan Analisis Penilaian Keberkesanan SPAk.	PPAP/PPAJ
	Menyemak status penghantaran Laporan Pemantauan SPAk oleh PA.	KJ
	Mempengerusikan Mesyuarat Jawatankuasa SPAk bagi membincangkan penambahbaikan pelaksanaan SPAk di politeknik.	TP(A)
TINDAKAN *(ACTION)*	Melaksanakan aktiviti penambahbaikan terhadap SPAk hasil daripada analisis laporan.	Jawatankuasa SPAk

Kitaran PDCA dalam melaksanakan SPAk

****Nota***: Tertakluk kepada ketetapan peringkat dalaman dan mengikut kekuatan pensyarah di politeknik.

5.3 Carta Alir Proses Kerja PPAP

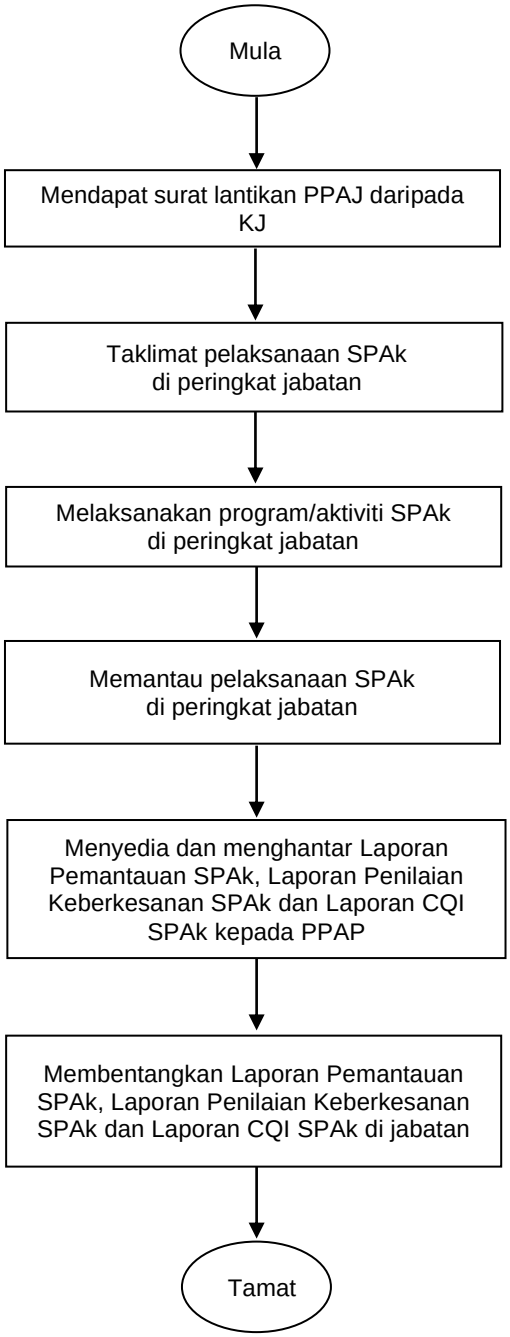
Berikut merupakan carta alir proses kerja PPAP di peringkat politeknik:



* Rujuk Bab 3: Peranan Dan Tanggungjawab

5.4 Carta Alir Proses Kerja PPAJ

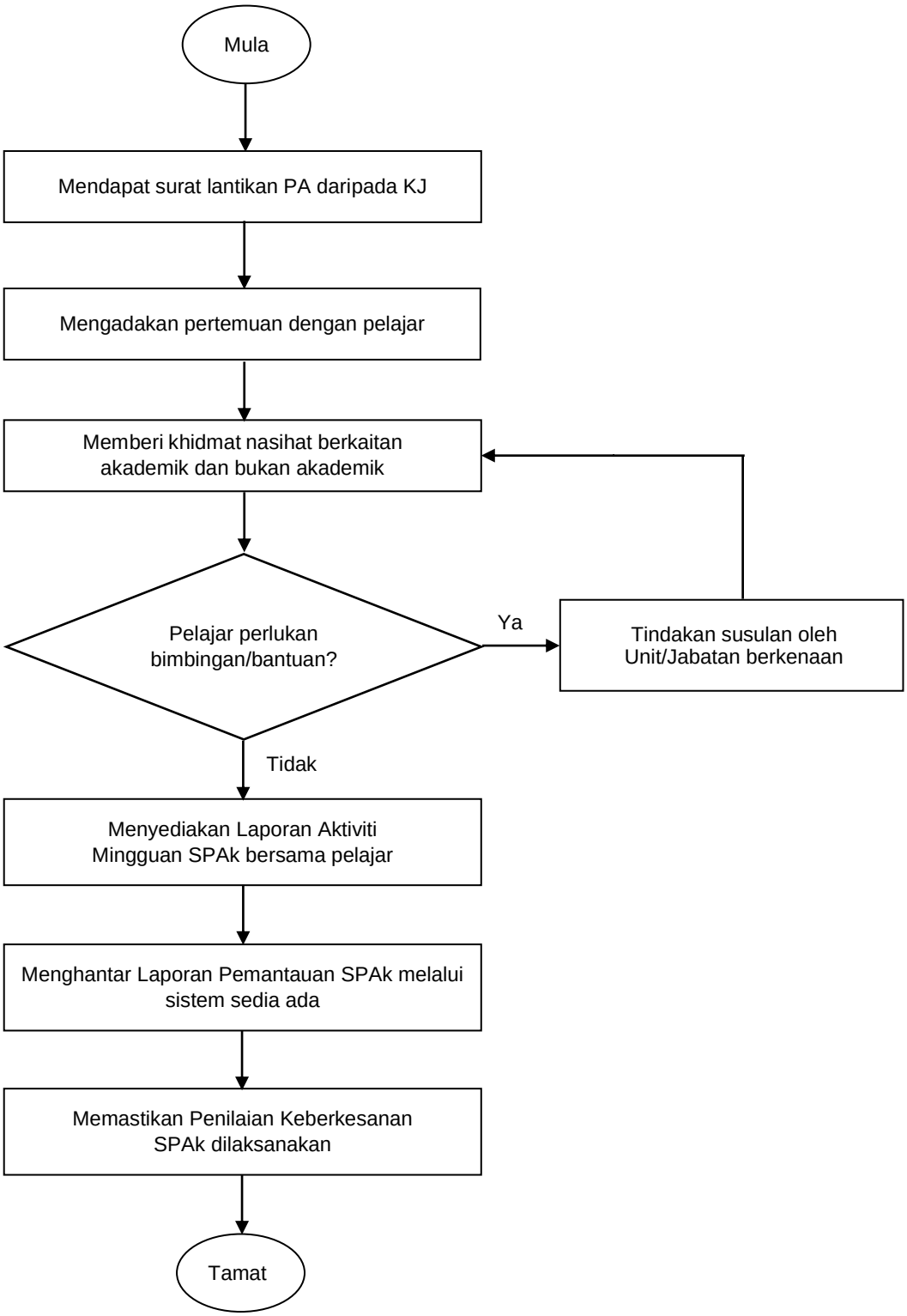
Berikut merupakan carta alir proses kerja PPAJ di peringkat jabatan:



* Rujuk Bab 3: Peranan Dan Tanggungjawab

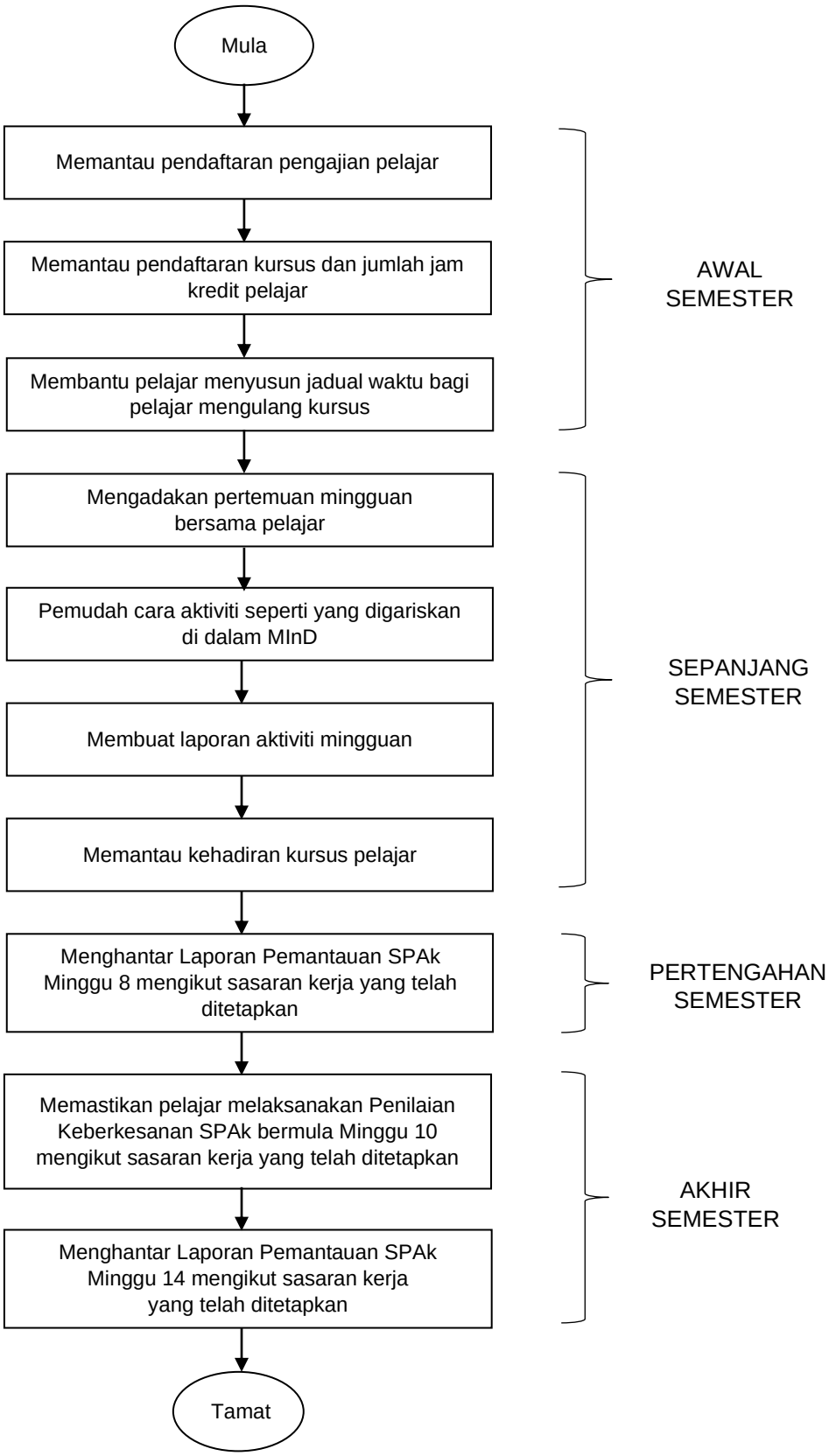
5.5 Carta Alir Proses Kerja PA

5.5.1 Carta Alir Proses Kerja PA



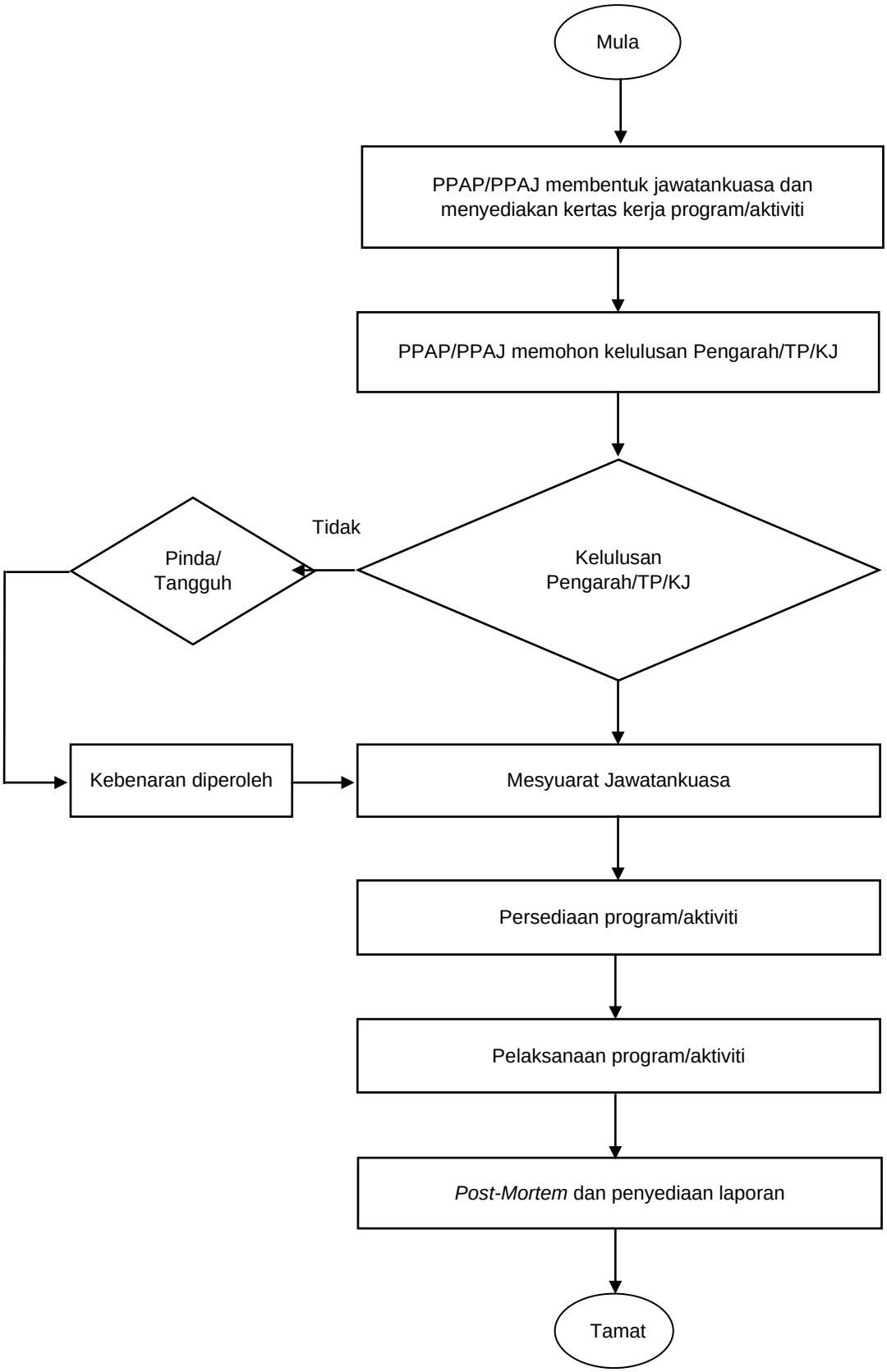
* Rujuk Bab 3: Peranan Dan Tanggungjawab

5.5.2 Carta Alir Pengurusan PA Sepanjang Semester



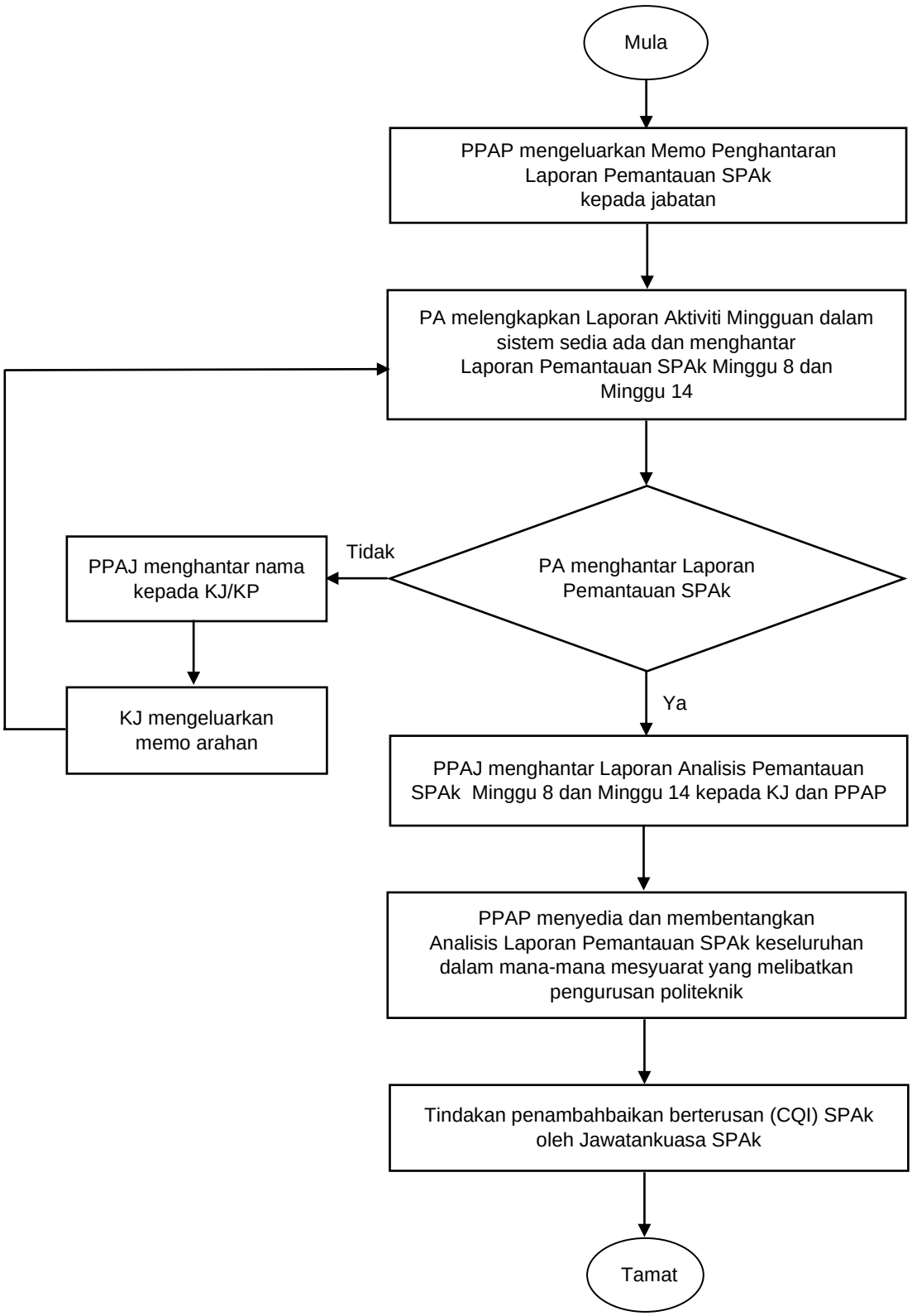
* Rujuk Bab 3: Peranan Dan Tanggungjawab

5.6 Carta Alir Pelaksanaan Program/Aktiviti SPAk



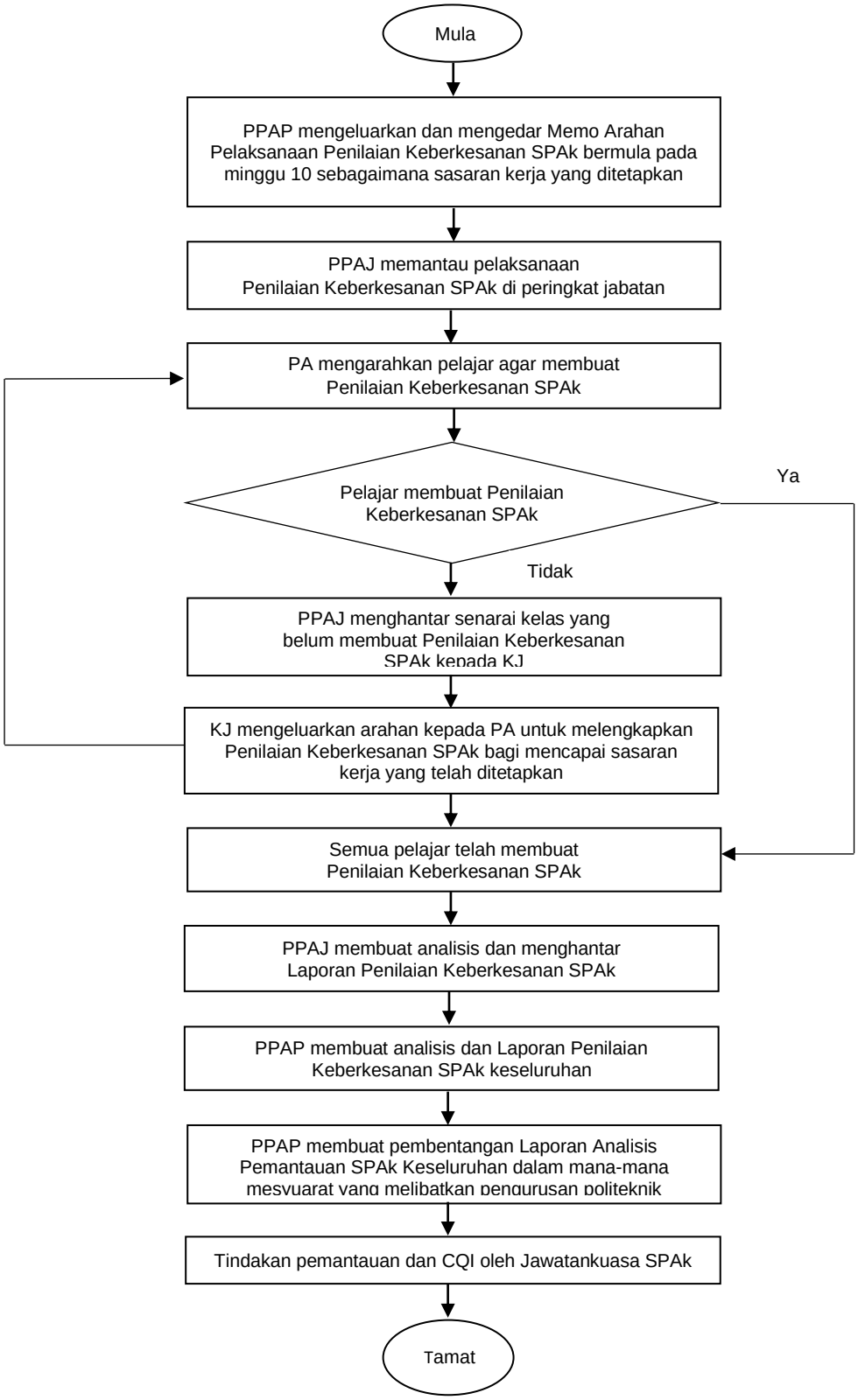
5.7 Pelaksanaan Pemantauan SPAk

5.7.1 Carta Alir Pelaksanaan Pemantauan SPAk

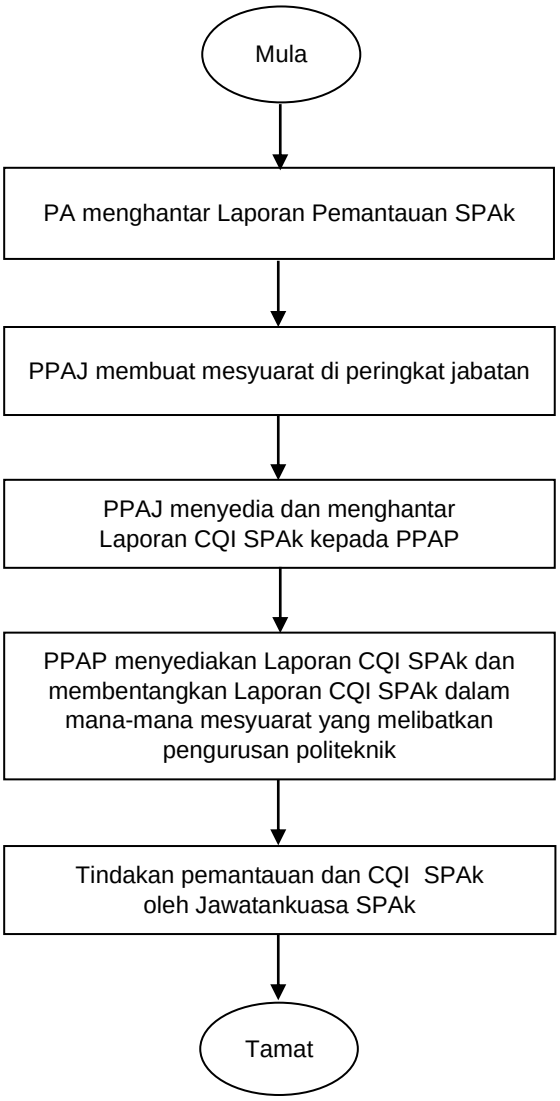


5.8 Pelaksanaan Penilaian Keberkesanan SPAk

5.8.1 Carta Alir Pelaksanaan Penilaian Keberkesanan SPAk



5.9 Carta Alir Penyediaan Laporan Penambahbaikan Kualiti Berterusan (CQI) SPAk



6.0 PROSES PELAKSANAAN SPAk

6.1 Dokumen Pelaksanaan SPAk

Dokumen berikut perlu disediakan di peringkat jabatan dan politeknik serta boleh dicapai dalam sistem pengurusan maklumat yang diguna pakai di politeknik masing-masing.

Perkara	Pelaksana	Rujukan
Senarai Semak Dokumen/Rekod Penasihatan Akademik	PPAP/PPAJ /PA	LAMPIRAN A
Borang Maklumat Pelajar	Pelajar	LAMPIRAN B
Borang Pertemuan Mingguan Berkelompok *(sekiranya perlu)*	PA	LAMPIRAN C
Borang Rekod Isu/Masalah Pelajar *(pertemuan bersama pelajar yang memerlukan khidmat rujukan ke unit lain)*	PA	LAMPIRAN D
Borang Pemantauan Sistem Penasihatan Akademik *(rujuk sistem)*	PPAP/PPAJ /PA	LAMPIRAN E
Borang Penilaian Keberkesanan Sistem Penasihatan Akademik (SPAk) *(rujuk sistem)*	Pelajar	LAMPIRAN F
Laporan Penilaian Keberkesanan Sistem Penasihatan Akademik (SPAk) *(rujuk sistem)*	PPAP/PPAJ /PA	LAMPIRAN G
Menyelaras dan membentang hasil dari **LAMPIRAN E** secara keseluruhan dalam mana-mana mesyuarat peringkat pengurusan.	PPAP	LAMPIRAN E dan LAMPIRAN G

****Nota**:* Tarikh pelaksanaan aktiviti dan penghantaran borang adalah bergantung kepada tarikh yang ditetapkan oleh Jawatankuasa SPAk di politeknik masing-masing.

6.2 Proses Pelaksanaan Menggunakan Sistem Dalam Talian

Proses pelaksanaan pengurusan dan pemantauan pelajar di bawah seliaan PA menggunakan sistem dalam talian.

Perkara	Pelaksana	Pautan iPAd
Memilih pelajar di bawah seliaan PA.	PA	Pilih Pelajar di bawah PA Pertama/Kedua
Mencetak **Borang Pertemuan Mingguan Berkelompok** pada setiap sesi pertemuan PA. *(sekiranya perlu)*	PA	Papar Borang Pertemuan Mingguan Berkelompok
Mengisi laporan aktiviti perjumpaan PA pada setiap minggu sesi pertemuan PA mengikut jadual waktu.	PA	Laporan Pemantauan SPAk
Mengemaskini kehadiran pelajar bagi setiap sesi pertemuan PA berdasarkan jadual waktu.	PA	Laporan Pemantauan SPAk
Mengemaskini **Isu/Masalah Pelajar** bagi pertemuan PA bersama pelajar selain dari sesi pertemuan mingguan PA.	PA	Laporan Pemantauan SPAk
Menghantar **Laporan Pemantauan Sistem Penasihatan Akademik Minggu 8 dan Minggu 14**. *(rujuk tarikh hantar yang ditetapkan oleh Jawatankuasa SPAk)*	PA	Laporan Pemantauan SPAk
Membuat **Analisis Laporan Pemantauan Sistem Penasihatan Akademik** melalui modul iPAd SPMP. *(rujuk tarikh hantar yang ditetapkan oleh Jawatankuasa SPAk)*	PPAP/PPAJ	Analisis Laporan Pemantauan SPAk
Menyelaras proses penilaian SPAk oleh pelajar di jabatan melalui **Borang Penilaian Keberkesanan SPAk**.	PPAJ	Penilaian Keberkesanan SPAk
Pelajar membuat **Penilaian Keberkesanan SPAk**.	Pelajar	Penilaian Keberkesanan SPAk
Membuat Analisis **Laporan Penilaian Keberkesanan SPAk di peringkat jabatan / politeknik**.	PPAJ / PPAP	Analisis Laporan Pemantauan SPAk
Membentang hasil **Analisis Keseluruhan (Laporan Pemantauan SPAk dan Laporan Penilaian Keberkesanan SPAk)** dalam mana-mana mesyuarat peringkat pengurusan yang berkaitan.	PPAP	Analisis Laporan Pemantauan SPAk

PENUTUP

Sistem Penasihatan Akademik (SPAk) ini dapat memberi impak yang baik dan berjaya sekiranya semua pihak yang terlibat menjalankan tanggungjawab seperti yang dinyatakan di dalam buku panduan ini. Di samping itu, SPAk juga bertujuan untuk membolehkan satu sistem rekod dan maklumat berkaitan pelajar dan pengajiannya di politeknik dapat disediakan dengan berkesan. Akhir kata, kejayaan sepenuhnya sistem ini bergantung kepada kerjasama dan komitmen semua pihak yang terlibat bagi merealisasikan misi dan visi politeknik masing-masing dan seterusnya misi dan visi Jabatan Pendidikan Politeknik dan Kolej Komuniti secara amnya.

PENYATAAN KUAT KUASA

Buku Panduan Pelaksanaan Sistem Penasihatan Akademik (SPAk) Politeknik Malaysia KPT Edisi 2022 ini berkuat kuasa kepada Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi dan politeknik di bawah kawalannya mulai **Sesi I 2022/2023.**

RUJUKAN

Jabatan Pendidikan Politeknik dan Kolej Komuniti. (2019). *Arahan-Arahan Peperiksaan dan Kaedah Penilaian (Diploma) Politeknik Malaysia KPM Edisi 6, 2019.* Bahagian Penilaian dan Peperiksaaan.

Jabatan Pendidikan Politeknik. (2016). *Buku Panduan Sistem Penasihatan Akademik (SPAk) Politeknik Malaysia KPT Edisi 2016.* Bahagian Instruksional dan Pembelajaran Digital.

Jabatan Pendidikan Politeknik. (2016). *Modul Inspirasi Diri (MInD) Politeknik Malaysia KPT Edisi 2016.* Bahagian Instruksional dan Pembelajaran Digital.

Jabatan Pengajian Politeknik. (2015). *Arahan-Arahan Peperiksaan dan Kaedah Penilaian*.

Jabatan Pengajian Politeknik. (2014). *Dokumen Kurikulum Program Pengajian Politeknik Kementerian Pendidikan Tinggi*.

Jabatan Pengajian Politeknik. (2014). *Skop Tugas dan Tanggungjawab Pegawai Pendidikan Pengajian Tinggi Edisi Pertama*.

Jabatan Pengajian Politeknik. (2012). *Garis Panduan Pengurusan dan Kaedah Penilaian Latihan Industri Politeknik KPT*.

Jabatan Pengajian Politeknik. (2012). *Garis Panduan Sistem Penasihatan Akademik Politeknik Kementerian Pengajian Tinggi (KPT) Edisi 2012*.

Jabatan Pengajian Politeknik. (2012). *Inspirasi Transformasi Diri (ITD)*.

Politeknik Port Dickson. (2014). *Garis Panduan Penasihatan Akademik Jabatan Kejuruteraan Mekanikal Politeknik Port Dickson (PPD)*.

LAMPIRAN

SENARAI LAMPIRAN

LAMPIRAN A (i) : SENARAI SEMAK FAIL PENYELARAS PENASIHAT AKADEMIK POLITEKNIK (PPAP)

LAMPIRAN A (ii) : SENARAI SEMAK FAIL PENYELARAS PENASIHAT AKADEMIK JABATAN (PPAJ)

LAMPIRAN A (iii) : SENARAI SEMAK FAIL REKOD PENASIHAT AKADEMIK (FRPA)

LAMPIRAN B : BORANG MAKLUMAT PELAJAR

LAMPIRAN C : BORANG PERTEMUAN MINGGUAN BERKELOMPOK

LAMPIRAN D : BORANG REKOD ISU/MASALAH PELAJAR

LAMPIRAN E (i) : BORANG PEMANTAUAN SISTEM PENASIHATAN AKADEMIK (oleh PA)

LAMPIRAN E (ii) : BORANG PEMANTAUAN SISTEM PENASIHATAN AKADEMIK JABATAN (oleh PPAJ)

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LAMPIRAN G : LAPORAN PENILAIAN KEBERKESANAN SISTEM PENASIHATAN AKADEMIK (SPAk)

LAMPIRAN H : KAEDAH MEMBUAT LAPORAN MENGGUNAKAN MODUL iPAd SPMP

- Lampiran H-1 : Contoh: Kaedah Membuat Laporan Aktiviti Mingguan Menggunakan iPAd
- Lampiran H-2 : Contoh: Kaedah Menghantar Laporan Pemantauan SPAk Menggunakan iPAd
- Lampiran H-3 : Contoh: Kaedah Semakan Penilaian Keberkesanan SPAk Oleh PA Menggunakan iPAd
- Lampiran H-4 : Contoh: Kaedah Penilaian Keberkesanan SPAk Oleh Pelajar Menggunakan iPAd
- Lampiran H-5 : Contoh: Penulisan Laporan Penambahbaikan Kualiti Berterusan (CQI) SPAk

LAMPIRAN A (i)

SENARAI SEMAK FAIL
PENYELARAS PENASIHAT AKADEMIK POLITEKNIK (PPAP)
SISTEM PENASIHATAN AKADEMIK (SPAk) POLITEKNIK MALAYSIA

BIL.	PERKARA	KETERANGAN	CATATAN
1.	Maklumat Penyelaras Penasihat Akademik Politeknik (PPAP)	1) Surat Lantikan PPAP & Skop Tugas PPAP	
		2) Carta Jawatankuasa SPAk Politeknik	
2.	Perancangan Sistem Penasihatan Akademik (SPAk) Politeknik	1) Kalendar Akademik Program Pengajian Politeknik	
		2) Takwim Pengurusan SPAk JPPKK	
		3) Takwim Perancangan SPAk Politeknik	
3.	Senarai Penyelaras Penasihat Akademik Jabatan (PPAJ) dan Penasihat Akademik (PA)	1) Senarai Nama PPAJ	
		2) Senarai Nama PA Mengikut Jabatan	
		**Sila rujuk Modul iPAd SPMP atau iPUO*	
4.	Laporan Pemantauan SPAk Politeknik	1) Laporan Pemantauan SPAk Minggu 8	
		2) Laporan Pemantauan SPAk Minggu 14	
		3) Analisis Keseluruhan Pemantauan SPAk	
		**Sila rujuk Modul iPAd SPMP atau iPUO*	
5.	Analisis Penilaian Keberkesanan SPAk Politeknik	1) Laporan Penilaian Keberkesanan SPAk Mengikut Jabatan	
		2) Laporan Penilaian Keberkesanan SPAk (Skor Min Mengikut Item)	
		**Sila rujuk Modul iPAd SPMP atau iPUO*	
6.	Cadangan Penambahbaikan Kualiti Berterusan (CQI) Pelaksanaan SPAk Politeknik	Laporan CQI Pelaksanaan SPAk Keseluruhan	
7.	Taklimat Pelaksanaan SPAK Pelajar dan PA	1) Surat/Memo Taklimat	
		2) Senarai Kehadiran	
		3) Laporan/Rumusan Taklimat	
8.	Laporan Aktiviti Pelaksanaan SPAk	1) Kertas Kerja	
		2) Senarai Kehadiran	
		3) Laporan	
9.	Mesyuarat	1) Memo/Surat Panggilan Mesyuarat	
		2) Catatan Perbincangan/Minit Mesyuarat/ Minit Curai	
10.	Hal-hal Lain	Lampiran Berkaitan	

LAMPIRAN A (ii)

SENARAI SEMAK FAIL
PENYELARAS PENASIHAT AKADEMIK JABATAN (PPAJ)
SISTEM PENASIHATAN AKADEMIK (SPAk) POLITEKNIK MALAYSIA

BIL.	PERKARA	KETERANGAN	CATATAN
1.	Maklumat Penyelaras Penasihat Akademik Jabatan (PPAJ)	1) Surat Lantikan PPAJ & Skop Tugas PPAJ	
		2) Carta Jawatankuasa SPAk Jabatan	
2.	Perancangan Sistem Penasihatan Akademik (SPAk) Politeknik	1) Kalendar Akademik Program Pengajian Politeknik	
		2) Takwim Pengurusan SPAk JPPKK	
		3) Takwim Perancangan SPAk Politeknik	
3.	Senarai Penasihat Akademik (PA) Jabatan	1) Senarai Nama PA di Jabatan **Sila rujuk Modul iPAd SPMP atau iPUO*	
4.	Laporan Pemantauan SPAk Politeknik	1) Laporan Pemantauan SPAk Minggu 8	
		2) Laporan Pemantauan SPAk Minggu 14	
		**Sila rujuk Modul iPAd SPMP atau iPUO*	
5.	Analisis Penilaian Keberkesanan SPAk Politeknik	Laporan Penilaian Keberkesanan SPAk Mengikut Jabatan	
6.	Cadangan Penambahbaikan Kualiti Berterusan (CQI) Pelaksanaan SPAk Jabatan	Laporan CQI Pelaksanaan SPAk di Jabatan	
7.	Taklimat Pelaksanaan SPAK Pelajar dan PA	1) Surat/Memo Taklimat	
		2) Senarai Kehadiran	
		3) Laporan/Rumusan Taklimat	
8.	Laporan Aktiviti Pelaksanaan SPAk	1) Kertas Kerja	
		2) Senarai Kehadiran	
		3) Laporan	
9.	Mesyuarat	1) Memo/Surat Panggilan Mesyuarat	
		2) Catatan Perbincangan/Minit Mesyuarat/Minit Curai	
10.	Hal-hal Lain	Lampiran Berkaitan	

LAMPIRAN A (iii)

SENARAI SEMAK FAIL REKOD PENASIHAT AKADEMIK (FRPA)

Nama Penasihat Akademik		**Sesi Kemasukan**	
Program		**Seksyen**	

BIL	**DOKUMEN**	**SEMESTER**							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
A.	**Senarai Semak Kandungan FRPA**								
B.	**Maklumat PA**								
	i. - Surat Lantikan - Senarai Tugas PA - Carta Aliran Kerja PA (Rujuk Buku Panduan SPAk)								
	ii. Struktur Program								
	iii. Senarai nama pelajar di bawah PA -*iPAd / iPUO								
	iv. Borang Maklumat Pelajar								
	v. Takwim Perancangan SPAk								
	vi. Jadual Waktu Pelajar								
C.	**Rekod Akademik Pelajar**								
	i. Senarai Semak Keseluruhan Pendaftaran Kursus Pelajar - *iPAd / iPUO								
	ii. Keputusan Peperiksaan Semua Pelajar -*iPAd / iPUO								
	iii. Lain-lain Rekod Akademik Pelajar								
D.	**Rekod Pertemuan PA**								
	i. Laporan Aktiviti Mingguan - *iPAd / iPUO Pertemuan Mingguan Berkelompok -*iPAd / iPUO								
	ii. Rekod Isu/Masalah *(jika ada)* - *iPAd / iPUO								
E.	**Laporan Pemantauan SPAk** -*iPAd / iPUO								
	i. Laporan Pemantauan SPAk Minggu 8								
	ii. Laporan Pemantauan SPAk Minggu 14								
F.	**Dokumen Sokongan**								
	i. Surat Peringatan Kehadiran								
	ii Pelajar Tukar Program / Tangguh Pengajian/ Berhenti / Gagal Berhenti								
	iii. Sijil Cuti Sakit / Dokumen Pengecualian / Pelepasan Kuliah (sekiranya berkaitan)								
	iv. Salinan Sijil Penyertaan/Penghargaan *(jika ada)*								
	v. Memo dan lain-lain berkaitan SPAk								

LAMPIRAN B

POLITEKNIK MALAYSIA

SISTEM PENASIHATAN AKADEMIK
BORANG MAKLUMAT PELAJAR

SESI KEMASUKAN: _____

Gambar
No Pendaftaran:

A. MAKLUMAT PERIBADI

1. NAMA :

2. NO. K.P. : 3. BANGSA :

4. TARIKH LAHIR : 5. AGAMA:

6. TEMPAT LAHIR :

7. STATUS : B = BUJANG K = BERKAHWIN 8. JANTINA: L = LELAKI P= PEREMPUAN

9. PROGRAM :

10. SESI MASUK :

11. ALAMAT TETAP:

12. NO. TEL. (R) : 13. BLOK ASRAMA:

(HP) : 14. PARAS/NO. BILIK : -

LAMPIRAN B

15. ALAMAT SEMASA PENGAJIAN :

(*Jika tinggal di luar kampus)*

B. MAKLUMAT AKADEMIK DAN PENGALAMAN BEKERJA

16. INSTITUSI/SEKOLAH AKHIR :

17. SIJIL / SPM :

18. HPNM / AGREGAT :

19. TAHUN:

20. KEPUTUSAN SPM / SEMESTER AKHIR

	SUBJEK	GRED
1		
2		
3		
4		
5		
6		

	SUBJEK	GRED
7		
8		
9		
10		
11		
12		

21. PENGALAMAN KERJA

	TEMPAT	JAWATAN	TEMPOH
1			
2			

LAMPIRAN B

C. MAKLUMAT KELUARGA

22. NAMA BAPA/PENJAGA:

ALAMAT:

23. PEKERJAAN :

24. PENDAPATAN *(RM- Bulanan)* :

25. UMUR : T H

26. NO. TEL (HP)

27. NAMA IBU :

ALAMAT:

28. PEKERJAAN :

29. PENDAPATAN*(RM-Bulanan)* :

30. UMUR : T H

31. NO. TEL (HP) :

32. BUTIRAN KELUARGA

BIL	NAMA	UMUR	JAWATAN (Jika bekerja)/ Nama IPT/ Sekolah

LAMPIRAN B

33. ORANG YANG BOLEH DIHUBUNGI JIKA BERLAKU KECEMASAN

NAMA :																						
ALAMAT :																						
NO. TEL. (R):													HUBUNGAN :									
(HP):																						

Nota: Pelajar dikehendaki memaklumkan kepada Penasihat Akademik sekiranya berlaku perubahan maklumat.

Saya mengaku bahawa segala maklumat yang saya berikan adalah benar dan tepat.

Tandatangan : _____

Nama : _____

Tarikh : _____

* **Penasihat Akademik (PA) bertanggungjawab sepenuhnya dalam memastikan semua maklumat diisi dengan lengkap oleh pelajar dan perlu dikemaskini sekiranya terdapat sebarang perubahan. PA perlu memastikan maklumat pelajar ini boleh dicapai/diperoleh apabila diperlukan.**

LAMPIRAN C

BORANG PERTEMUAN MINGGUAN BERKELOMPOK

PROGRAM/KELAS : .....
TARIKH : ..... MASA: .....
JUMLAH KEHADIRAN : .....

Bil	Nama	No. Pendaftaran	Tanda (/)	Aktiviti / Refleksi
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

LAMPIRAN D

BORANG REKOD ISU/MASALAH PELAJAR

Nama Pelajar : ..... No. Telefon: .....

Program :……..……..... Jabatan : ……..…

No. Pendaftaran : ……..... Tarikh Janji Temu :……..

ISU / MASALAH PELAJAR	PEGAWAI YANG DIRUJUK

.....
(NAMA PENASIHAT AKADEMIK)
E-mel:
No. Telefon:
Tarikh:

Tindakan Susulan oleh pegawai yang dirujuk: Tarikh Janji Temu:

_____

_____

_____

_____

Tandatangan:
Nama Pegawai:
Jawatan:
Tarikh:

LAMPIRAN E (i)

BORANG PEMANTAUAN SISTEM PENASIHATAN AKADEMIK
(diisi oleh Penasihat Akademik)

Jabatan: **Program:**

Nama PA: **Tarikh:**

Pemantauan Kehadiran	**Kehadiran**															**Jumlah Pelajar (Bil. pelajar * minggu)**	**Peratus Kehadiran (%) (Jumlah hadir/ Jumlah pelajar *100)**	
	Bil. Pelajar	**Minggu**													**Jumlah Hadir**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**			

Kategori Masalah	Catatan Ringkas Masalah	Tindakan	Bil. Pelajar Bermasalah	Peratus Pelajar Bermasalah (%)	Catatan / Status
Akademik					
Kehadiran					
Keluarga					
Kesihatan					
Kewangan					
Sosial					
Disiplin					
Sokongan Psikologi					
Lain-lain					
Jumlah	Kategori Masalah				

Catatan Aktiviti (berkaitan dengan domain-domain dalam MInD)

NOTA:

* *Laporan ini perlu dilengkapkan dan dihantar kepada Penyelaras Penasihat Akademik Jabatan (PPAJ).*
* *Laporan ini dijana melalui Modul iPAd SPMP / mana-mana sistem pengurusan maklumat yang berkaitan.*

Petunjuk bagi Borang Pemantauan Sistem Penasihatan Akademik (SPAk)

Kategori masalah dalam pemantauan kehadiran serta contoh yang berkaitan:

(1) **Akademik:** penilaian kerja kursus rendah, keputusan peperiksaan rendah, meniru semasa peperiksaan akhir, ditahan daripada menduduki peperiksaan akhir, pendaftaran kursus, tambah semester dan tangguh pengajian.

(2) **Kehadiran:** pemantauan kehadiran pelajar.

(3) **Keluarga:** yatim, kematian atau perceraian ibu bapa yang boleh memberi kesan kepada pelajar dan masalah keluarga.

(4) **Kesihatan:** sakit, kemalangan, rawatan berterusan, mendapat rawatan di hospital dan kemurungan.

(5) **Kewangan:** kemiskinan, masalah pembayaran yuran dan masalah pinjaman kewangan.

(6) **Sosial:** khalwat, terlibat dengan kes kecurian, bermain mercun, penyalahgunaan dadah dan pergaduhan.

(7) **Disiplin:** kes polis, melanggar peraturan politeknik, kes asrama dan gengster.

(8) **Sokongan Psikologi:** kesihatan mental, kesejahteraan emosi dan sosial yang memerlukan perhatian khas seperti kemurungan, tekanan perasaan, kecelaruan minda dan perasaan bimbang yang keterlaluan (*anxiety*).

(9) **Lain-lain:** selain daripada kategori yang dinyatakan di atas yang tidak mematuhi dan melanggar peraturan politeknik dan peraturan yang termaktub dalam Akta 174.

**Nota: Laporan ini dijana melalui Modul iPAd SPMP / mana-mana sistem sistem pengurusan maklumat yang berkaitan.*

LAMPIRAN E (ii)

BORANG PEMANTAUAN SISTEM PENASIHATAN AKADEMIK JABATAN

(diisi oleh Penyelaras Penasihat Akademik Jabatan)

JABATAN:

NAMA PENYELARAS:

BIL.	KELAS	PENASIHAT AKADEMIK	BIL. PELAJAR	PERATUS KEHADIRAN (%)	BILANGAN PELAJAR BERMASALAH MENGIKUT KATEGORI									BILANGAN PELAJAR BERMASALAH	PERATUS PELAJAR BERMASALAH (%)	CATATAN
					1	2	3	4	5	6	7	8	9			
1																
2																
3																
4																
5																
6																
JUMLAH																
PERATUS PELAJAR BERMASALAH MENGIKUT KATEGORI																

KATEGORI MASALAH:

1 - Akademik
2 - Kehadiran
3 - Keluarga
4 - Kesihatan
5 - Kewangan
6 - Sosial
7 - Disiplin
8 - Sokongan Psikologi
9 - Lain-lain

NOTA:

** Laporan ini perlu dilengkapkan dan dihantar kepada Penyelaras Penasihat Akademik Politeknik (PPAP).*

** Laporan ini dijanakan melalui Modul iPAd SPMP / mana-mana sistem sistem pengurusan maklumat yang berkaitan.*

BORANG PEMANTAUAN SISTEM PENASIHATAN AKADEMIK POLITEKNIK

(diisi oleh Penyelaras Penasihat Akademik Politeknik)

POLITEKNIK:

NAMA PENYELARAS:

BIL	JABATAN	BIL. PELAJAR	PERATUS KEHADIRAN (%)	BILANGAN PELAJAR BERMASALAH MENGIKUT KATEGORI									BILANGAN PELAJAR BERMASALAH	PERATUS PELAJAR BERMASALAH (%)	CATATAN
				1	2	3	4	5	6	7	8	9			
1															
2															
3															
4															
5															
6															
JUMLAH															
PERATUS PELAJAR BERMASALAH MENGIKUT KATEGORI															

KATEGORI MASALAH:

1 - Akademik
2 - Kehadiran
3 - Keluarga
4 - Kesihatan
5 - Kewangan
6 - Sosial
7 - Disiplin
8 - Sokongan Psikologi
9 - Lain-Lain

NOTA:

* *Laporan ini perlu dilengkapkan oleh Penyelaras Penasihat Akademik Politeknik (PPAP).*
* *Laporan ini dijana melalui Modul iPAd SPMP/ mana-mana sistem pengurusan maklumat yang berkaitan.*

LAMPIRAN F

BORANG PENILAIAN
KEBERKESANAN SISTEM PENASIHATAN AKADEMIK (SPAk)

PROGRAM : _____ **SESI :** _____

Sepanjang semester ini, bagaimanakah anda berhubung dengan PA anda? Sila tanda (/) pada yang berkaitan.

Secara Bersemuka: ☐
Melalui Panggilan Telefon: ☐
Secara Dalam Talian: ☐

Arahan: Sila tandakan pada ruang yang berkenaan bagi menilai Sistem Penasihatan Akademik (SPAk) politeknik anda.	Sangat Tidak Setuju	Tidak Setuju	Setuju	Sangat Setuju
PENASIHAT AKADEMIK (PA)				
1. Saya memerlukan PA sepanjang pengajian saya di politeknik.	1	2	3	4
2. PA bersedia memperuntukkan waktu pertemuan bersama saya apabila diperlukan.	1	2	3	4
3. PA menerangkan dengan jelas objektif dan aktiviti yang ingin dicapai pada setiap sesi perjumpaan mingguan.	1	2	3	4
4. PA membantu saya dalam merancang pengurusan masa pembelajaran.	1	2	3	4
5. PA bersedia mendengar tentang masalah yang ingin dikongsikan oleh saya.	1	2	3	4
6. Nasihat dan bimbingan yang diberikan oleh PA dapat memotivasikan saya.	1	2	3	4
7. Saya mempraktikkan teguran dan nasihat yang diberikan oleh PA.	1	2	3	4
8. Saya selesa untuk menceritakan masalah akademik kepada PA.	1	2	3	4
9. Saya selesa untuk menceritakan perkara berkaitan peribadi kepada PA.	1	2	3	4
10. Prestasi akademik saya semakin baik setelah mendapatkan nasihat dan bimbingan dari PA.	1	2	3	4
11. PA telah menjalankan tanggungjawab sebagai PA dengan baik.	1	2	3	4
12. Saya boleh menguruskan pengajian dan urusan peribadi saya tanpa PA.	1	2	3	4
SISTEM PENASIHATAN AKADEMIK (SPAk)				
13. SPAk membantu saya dalam membina matlamat diri.	1	2	3	4
14. SPAk membantu saya meningkatkan motivasi diri.	1	2	3	4
15. SPAk membantu saya dalam meningkatkan kemahiran dalam pembelajaran.	1	2	3	4
16. SPAk membantu saya dalam meningkatkan kemahiran komunikasi yang berkesan.	1	2	3	4
17. SPAk membantu saya dalam mematuhi peraturan politeknik.	1	2	3	4
18. SPAk membantu saya lebih fokus terhadap objektif utama saya berada di politeknik.	1	2	3	4
19. SPAk membantu saya bersedia untuk menempuh alam kerjaya.	1	2	3	4
20. SPAk merupakan inisiatif sokongan ke arah pembentukan kemahiran menyeluruh dan berdaya saing dalam kalangan pelajar.	1	2	3	4

Nota: *SPAk merujuk kepada Sistem Penasihatan Akademik di politeknik yang melibatkan jawatankuasa SPAk, aktiviti SPAk, pegawai yang terlibat dengan aktiviti Modul Inspirasi Diri (MInD) seperti Penasihat Akademik (PA) dan Pegawai Psikologi (PPsi).*

Cadangan Penambahbaikan / Ulasan :

_____

_____

LAMPIRAN G

LAPORAN PENILAIAN
KEBERKESANAN SISTEM PENASIHATAN AKADEMIK (SPAk)

Analisis Soalan dan Skor Min (untuk setiap jabatan)

BIL	SOALAN	SKOR MIN (JABATAN)			
		1	2	3	4
1.	Saya memerlukan PA sepanjang pengajian saya di politeknik.				
2.	PA bersedia memperuntukkan waktu pertemuan bersama saya apabila diperlukan.				
3.	PA menerangkan dengan jelas objektif dan aktiviti yang ingin dicapai pada setiap sesi perjumpaan mingguan.				
4.	PA membantu saya dalam merancang pengurusan masa pembelajaran.				
5.	PA bersedia mendengar tentang masalah yang ingin dikongsikan oleh saya.				
6.	Nasihat dan bimbingan yang diberikan oleh PA dapat memotivasikan saya.				
7.	Saya mempraktikkan teguran dan nasihat yang diberikan oleh PA.				
8.	Saya selesa untuk menceritakan masalah akademik kepada PA.				
9.	Saya selesa untuk menceritakan perkara berkaitan peribadi kepada PA.				
10.	Prestasi akademik saya semakin baik setelah mendapatkan nasihat dan bimbingan dari PA.				
11.	PA telah menjalankan tanggungjawab sebagai PA dengan baik.				
12.	Saya boleh menguruskan pengajian dan urusan peribadi saya tanpa Penasihat Akademik.				
13.	SPAk membantu saya dalam membina matlamat diri.				
14.	SPAk membantu saya meningkatkan motivasi diri.				
15.	SPAk membantu saya dalam meningkatkan kemahiran dalam pembelajaran.				
16.	SPAk membantu saya dalam meningkatkan kemahiran komunikasi yang berkesan.				
17.	SPAk membantu saya dalam mematuhi peraturan politeknik.				
18.	SPAk membantu saya lebih fokus terhadap objektif utama saya berada di politeknik.				
19.	SPAk membantu saya bersedia untuk menempuh alam kerjaya.				
20.	SPAk merupakan inisiatif sokongan ke arah pembentukan kemahiran menyeluruh dan berdaya saing dalam kalangan pelajar.				

LAMPIRAN G

Skor Min Tertinggi

BIL	JABATAN	SOALAN	NILAI MIN
1.			
2.			
3.			
4.			
5.			

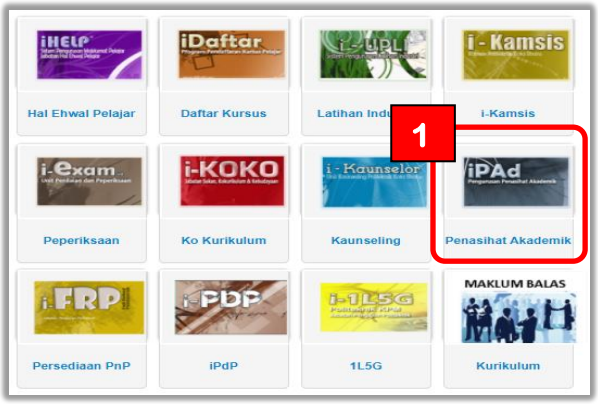
Skor Min Terendah

BIL	JABATAN	SOALAN	NILAI MIN
1.			
2.			
3.			
4.			
5.			

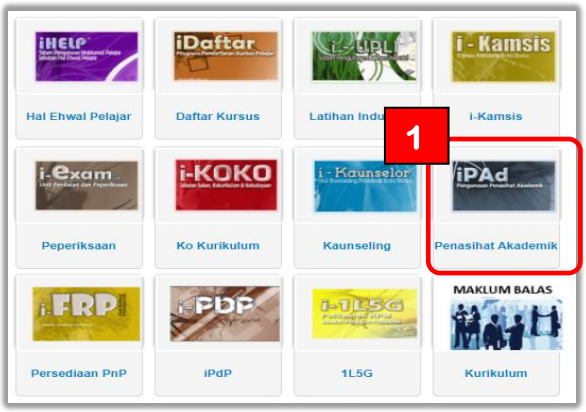
**Nota: Laporan ini dijana melalui Modul iPAd SPMP/mana-mana sistem pengurusan maklumat yang berkaitan.*

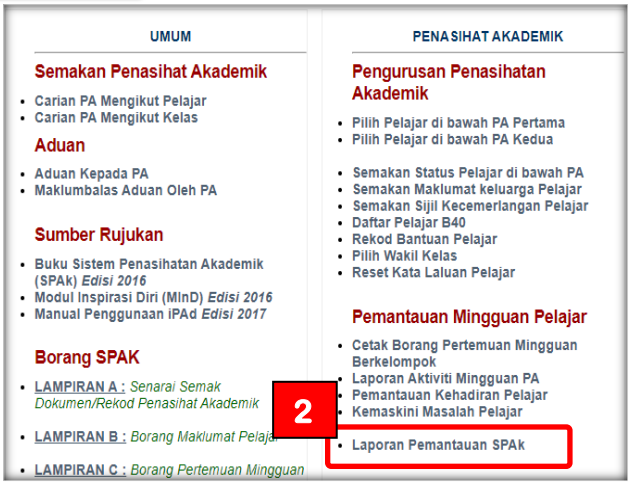
LAMPIRAN H: KAEDAH MEMBUAT LAPORAN MENGGUNAKAN MODUL iPAd SPMP

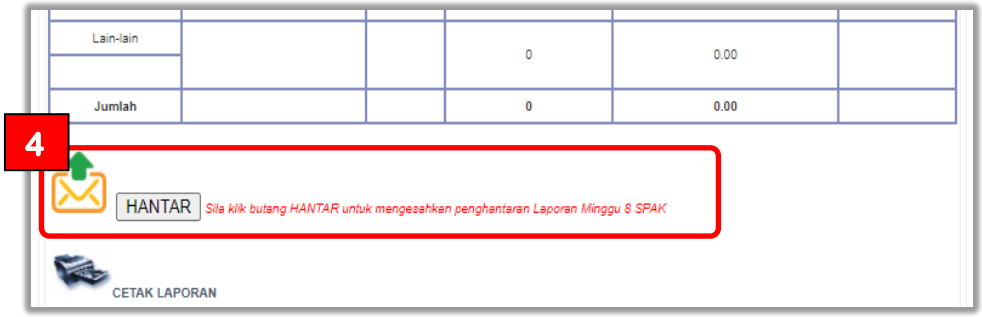
Contoh: Kaedah Membuat Laporan Aktiviti Mingguan Menggunakan iPAd



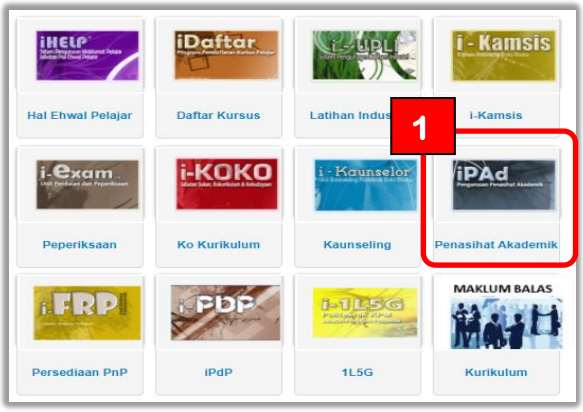
Contoh: Kaedah Menghantar Laporan Pemantauan SPAk Menggunakan iPAd

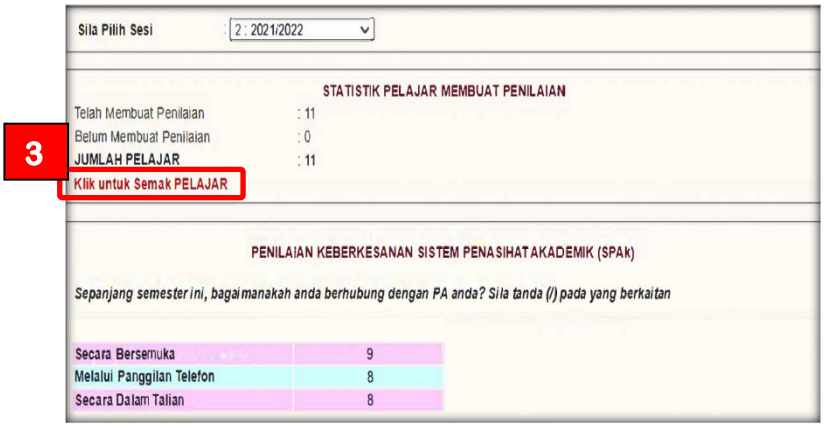


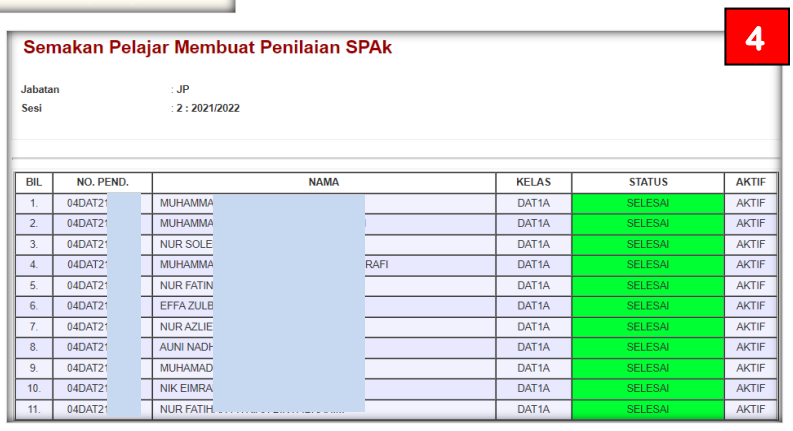




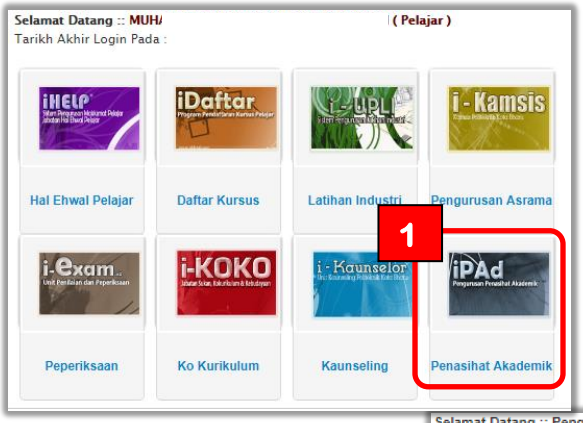
Contoh: Kaedah Semakan Penilaian Keberkesanan SPAk Oleh PA Menggunakan iPAd

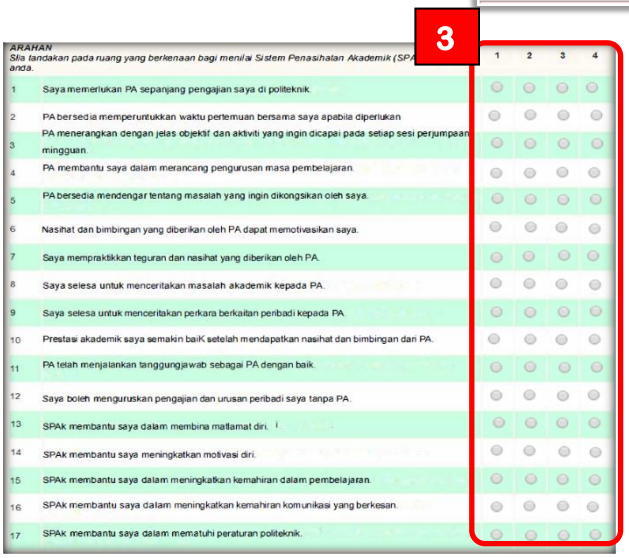


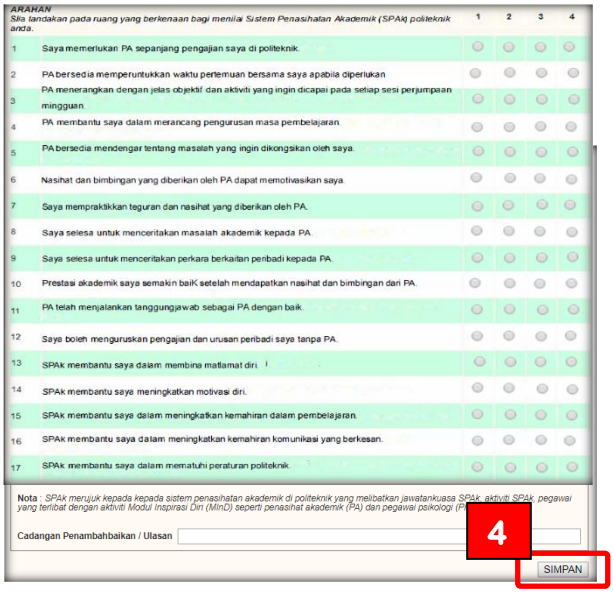




Contoh: Kaedah Penilaian Keberkesanan SPAk Oleh Pelajar Menggunakan iPAd







Contoh: Penulisan Laporan Penambahbaikan Kualiti Berterusan (CQI) SPAk

LAPORAN PENAMBAHBAIKAN KUALITI BERTERUSAN (CQI) SISTEM PENASIHATAN AKADEMIK (SPAk) POLITEKNIK

BAHAGIAN 1: MAKLUMAT PENYELARAS PENASIHAT AKADEMIK POLITEKNIK (PPAP)

Nama Penyelaras	:	MAYA SOFA BINTI ISMAIL
Sesi	:	SESI 1 2021/2022
Politeknik	:	POLITEKNIK PORT DICKSON (PPD)

BAHAGIAN 2: PENAMBAHBAIKAN TERHADAP PEMANTAUAN SPAk POLITEKNIK

LAPORAN PEMANTAUAN PELAKSANAAN SPAk POLITEKNIK

ANALISIS LAPORAN PEMANTAUAN SPAK MINGGU 14 (SASARAN 100%)

A. Rumusan Pemantauan SPAk

CONTOH

STATISTIK PEMANTAUAN SPAK SESI 1 2021/2022
KPI:100% - TERCAPAI
STATUS RASMI

JABATAN		PROGRAM	% PEMANTAUAN OLEH PA	BILANGAN PA		
JKA	100%	DKA	100%	26	39	203
		DSB	100%	13		
JKE	100%	DEG	100%	11	57	
		DEP	100%	11		
		DEQ	100%	9		
		DET	100%	15		
		DTK	100%	11		
JKM	100%	DAD	100%	20	60	
		DEM	100%	10		
		DKM	100%	22		
		DTP	100%	8		
JP	100%	DAT	100%	16	47	
		DPR	100%	16		
		DSK	100%	15		

Jadual 1

1. KPI Pemantauan perlaksanaan SPAk pada minggu ke 14 telah tercapai 100% (rujuk jadual 1). Dimana terdapat 203 orang Penasihat Akademik yang terdiri daripada jabatan JKA, JKE, JKM dan JP. Perjumpaan PA secara keseluruhannya telah dilaksanakan dengan baik di Politeknik Port Dickson.

KESELURUHAN

KOD	KATEGORI	BIL KES	PERATUS
1	AKADEMIK	933	62.96
2	KEHADIRAN	121	8.16
3	KELUARGA	16	1.08
4	KESIHATAN	36	2.43
5	KEWANGAN	12	0.81
6	SOSIAL	3	0.2
7	DISIPLIN	2	0.13
8	LAIN	359	24.22
	JUMLAH KES	1482	

Jadual 2

2. Penasihat Akademik memberi komitmen terbaik dalam menangani isu-isu yang dilaporkan oleh pelajar dan telah direkodkan dalam iPAd (Rujuk Jadual 2). Analisa pemantauan SPAk PPD yang dilaksanakan mendapati tiga kategori yang tertinggi memerlukan pemantauan berterusan daripada PA iaitu:

i. **Masalah Akademik**

Terdapat 62.96 % kes dibawah kategori **masalah akademik** dilaporkan antaranya:

➢ *Pendaftaran*

a) Masalah pembayaran yuran
b) Lewat lapor diri
c) tercicir / terlupa daftar subjek
d) Masalah pendaftaran kod lama yang telah dijumudkan
e) Tiada kod subjek untuk dipilih
f) Subjek kes (t.t) pada sesi lepas (penangguhan disebab pkp)
g) Daftar kursus ko-kurikulum & sukan (kuota terhad)
h) Jadual bertindan untuk pelajar *carry modul*

CONTOH

	➢ *Kelas Dalam Talian (PdPdT)* a) Masalah log-in msteam – tiada rujukan membuka emel id pelajar b) Tidak mahir penggunaan msteam/cidos c) Akses kepada msteam dan cidos bermasalah d) Talian Internet terhad dan data tidak mencukupi e) Kesukaran untuk menjalankan penilaian dalam talian ➢ *Tugasan Kuliah* a) Tidak hantar tugasan yang diberi dalam masa yang ditetapkan disebabkan capaian internet kurang memuaskan b) Tidak banyak pilihan medium penghantaran tugasan yang memudahkan pelajar ii. **Masalah-Masalah Lain** Terdapat 24.22 % kes dibawah kategori **masalah lain-lain** dilaporkan antaranya: ➢ *Pemilihan tempat latihan industri* ➢ *Pencarian rumah sewa bagi tempoh terhad* ➢ *Pelajar tidak menerima info yang jelas berkaitan asrama/kuliah semasa COVID-19* ➢ *Kamsis* a) Permohonan tidak berjaya walau telah mengisi rayuan b) Data tarikh yang dimohon tidak sama apabila keputusan permohonan kamsis keluar ➢ *Bencana Alam* a) Pelajar tidak dapat meneruskan kuliah disebabkan tempat tinggal ditimpa musibah banjir dan kerosakan harta benda. ➢ *Komunikasi* a) Kesukaran pelajar untuk menjelaskan sesuatu perkara secara dalam talian

CONTOH

iii. **Masalah Kehadiran**

Terdapat 8.16% kes **masalah kehadiran**

- *Kuliah*

a) Tidak hadir kelas dalam talian sepanjang perkuliahan
b) Kehadiran yang tidak konsisten
c) Pelajar tangguh/berhenti
d) Wujud masalah komunikasi antara pensyarah dan pelajar
e) Tidak hadir ketika amali/bengkel (bersemuka)

Seterusnya berikut adalah masalah yang mendapat peratus rendah namun demikian perlu juga diberi perhatian untuk diambil tindakan.

iv. **Masalah Kesihatan**

Terdapat 2.43% kes **masalah kesihatan**

- *Covid 19*

a) Pelajar positif Virus COVID19 / kontak rapat - kuarantin

- *Kemurungan*

a) Pelajar mengalami anxiety dan insomnia yang kritikal

- *Kemalangan*

a) Pelajar kemalangan dan tak dapat hadir kuliah

- *Surat cuti sakit*

a) Pelajar tidak hadir tanpa surat cuti sakit

v. **Masalah Keluarga**

Terdapat 1.08% kes **masalah keluarga**

- *Ahli keluarga sakit*

a) Pelajar tidak hadir kuliah kerana perlu menjaga ahli keluarga sakit.

- *Keluarga bercerai*

a) Kehidupan pelajar bercelaru dan tidak stabil

- *Kematian*

a) Kematian orang tua kerana sakit/kemalngan/covid 19
b)

CONTOH

vi. **Masalah Kewangan**

Terdapat 0.81% kes **masalah kewangan**

- *Yuran pengajian*

a) Kewangan keluarga kritikal, tidak dapat membayar yuran

b) Tidak mendapat pembiayaan kewangan/pinjaman

- *Tidak hadir kuliah bersemuka*

a) Pelajar yang tinggal di Sabah menghadapi masalah untuk hadir amali/bengkel bersemuka kerana kekangan kewangan

- *Penjaga/ibu bapa hilang pekerjaan*

a) Pelajar bekerja untuk membantu kewangan keluarga

B. Tindakan/Cadangan Penambahbaikan

Tindakan:

Masalah dan kes yang dirujuk kepada Ketua Jabatan telah diambil tindakan sewajarnya oleh penasihat akademik.

i. Kes-kes yang memerlukan pemantauan berterusan dirujuk kepada Ketua Program dan Ketua Jabatan untuk tindakan selanjutnya (permohonan berhenti/tangguh dan kehadiran ke kelas online)

ii. Terdapat juga kes yang dirujuk kepada kaunseling untuk tindakan selanjutnya, terutama apabila pelajar mengambil keputusan untuk berhenti datau terlibat dengan masalah sosial.

iii. Kes yang dirujuk ke HEP adalah berkenaan kewangan, peraturan dan SOP ketika norma baru yang tidak difahami pelajar.

iv. Masalah sistem berkaitan SPMP/CIDOS dan Microsoft Teams dirujuk kepada Unit E-Learning dan ICT untuk diselesaikan.

v. Bagi isu-isu ringan atau berkaitan akademik, Penasihat Akademik akan memainkan peranan memberi nasihat dan juga bimbingan.

CONTOH

	Masalah-masalah ini diselesaikan dengan baik oleh penasihat akademik di jabatan dengan bantuan dan sokongan dari Penyelaras Penasihat Akademik Jabatan (PPAJ), Ketua Jabatan (KJ), Ketua Program (KPro), dan ketua-ketua unit di jabatan. **Cadangan Penambahbaikan:** Analisa pemantauan SPAk ini dibentangkan di Mesyuarat Pengurusan Akademik untuk tindakan jabatan: i. Ketua Jabatan, Ketua Program dan Pegawai E-learning jabatan perlu menyediakan bahan digital berkualiti dengan kadar segera. Ini membolehkan pelajar yang mempunyai masalah capaian internet dan peranti dapat mengikut pembelajaran dengan jayanya. ii. Ketua Jabatan dan Ketua Program perlu menyampaikan maklumat kepada staf dan pelajar tentang pengurusan pengajaran dan pembelajaran (PdP) terkini dengan kerap dan berkesan. iii. Masalah kesihatan dirujuk ke KK berdekatan dan juga MKN serta JPKK untuk tindakan seterusnya. iv. Perlu adanya komunikasi yang berkesan diantara penasihat akademik, pensyarah kursus dan pelajar. v. Terdapat segelintir PA yang kurang peka tentang pemantauan SPAk minggu 14 sehingga hari terakhir. Oleh itu, proses pemantauan oleh Ketua Jabatan, Ketua Porgram dan penyelaras SPAk jabatan perlu dilaksanakan dengan cekap. vi. Proses pengendalian masalah seorang pelajar mungkin memakan masa untuk diselesaikan maka catatan yang lengkap diperlukan untuk rujukan dan tindakan susulan.

CONTOH

ANALISIS PENILAIAN KEBERKESANAN PELAKSANAAN SPAk POLITEKNIK

ANALISIS PENILAIAN SPAk MINGGU 12 (SASARAN 90%)

Bagi Sesi 1 2021:2022, sebahagian pelajar hanya kembali ke kampus untuk menjalani apraktikal bersemuka mengikut jadual yang ditetapkan. Kuliah sepenuhnya dijalankan secara dalam talian termasuk perjumpaan PA.

STATISTIK PENILAIAN PELAJAR SESI 1 2021/2022
KPI:90% - TERCAPAI
STATUS RASMI

JABATAN		PROGRAM	% PENILAIAN OLEH PELAJAR	PELAJAR BELUM BUAT PENILAIAN
JKA	98%	DKA	98%	15
		DSB	98%	5
JKE	91%	DEG	83%	35
		DEP	88%	25
		DEQ	93%	13
		DET	90%	42
		DTK	100%	SELESAI
JKM	94%	DAD	93%	27
		DEM	99%	3
		DKM	89%	44
		DTP	100%	SELESAI
JP	92%	DAT	85%	51
		DPR	94%	23
		DSK	97%	11

Jadual 3

1. Penilaian Sistem Penasihatan Akademik (SPAk) oleh pelajar telah dilaksanakan dengan baik dan mencapai KP1 90%. Jumlah pelajar yang telah membuat penilaian adalah antara 92% - 98% bagi setiap program (Rujuk Jadual 3).

CONTOH

PENILAIAN KEBERKESANAN SISTEM PENASIHATAN AKADEMIK (SPAk)

Sepanjang 6 Bulan lepas berapa kali anda berjumpa dengan Penasihat Akademik Anda

	Tidak Pernah	1 - 4	5 - 9	10 - 14	Lebih dari 15 kali
Perjumpaan Secara Bersemuka	795	2819	267	195	139
Melalui Telefon	127	2892	611	409	396
Melalui Media Sosial	207	2686	528	424	390

Jadual 4

Terdapat tiga kategori medium perjumpaan PA yang dinilai iaitu secara bersemuka, melalui panggilan telefon dan media sosial.

2. Daripada data di atas, pelajar menggunakan telefon dan media sosial sebagai pilihan utama untuk berkomunikasi dengan penasihat akademik (Rujuk Jadual 4). Situasi ini relevan kerana kebanyakan pelajar menjalani proses pembelajaran dalam talian. Selain itu, terdapat 795 pelajar yang tidak pernah membuat perjumpaan secara bersemuka sepanjang 6 bulan yang lepas. Perkara ini boleh diterima kerana sesi 1 2021:2022 pelajar hanya datang ke kampus untuk menjalani praktikal sahaja. Selain daripoada itu arahan MKN untuk mengurangkan perjumpaan bersemuka dan mematuhi SOP masih terpakai disemua institusi pengajian tinggi.

CONTOH

BIL	SOALAN	Skor MIN
1	Saya sangat memerlukan PA sepanjang pengajian saya di Politeknik.	4.10
2	PA memperuntukkan waktu temujanji bersama saya.	4.06
3	PA menerangkan kepada saya dengan jelas objektif dan aktiviti yang ingin dicapai pada setiap sesi pertemuan.	4.10
4	SPAk membantu saya dalam membangunkan kemahiran serta strategi belajar yang betul bagi mencapai hasil pembelajaran.	4.09
5	PA membantu saya dalam merancang pengurusan masa berpandukan kepada masa pembelajaran pelajar (SLT).	4.07
6	SPAk membantu saya dalam membina matlamat diri.	4.07
7	SPAk membantu saya meningkatkan motivasi.	4.09
8	Saya selesa untuk menceritakan masalah berkaitan akademik dan peribadi kepada PA.	4.04
9	SPAk membantu saya dalam meningkatkan kemahiran komunikasi dengan pelbagai cara.	4.06
10	SPAk membantu saya dalam mematuhi peraturan Politeknik.	4.10
11	PA menjadi pendengar yang baik dan prihatin terhadap soal akademik dan masalah yang saya hadapi.	4.11
12	Nasihat dan bimbingan yang diberikan oleh PA amat berguna.	4.14
13	Saya mempraktikkan teguran dan nasihat yang diberikan oleh PA.	5.00
14	Prestasi akademik saya semakin baik setelah mendapat nasihat dan bimbingan dari PA.	4.45
15	SPAk dapat menyelamatkan saya daripada lalai terhadap objektif utama saya berada di Politeknik.	4.15
16	SPAk membantu saya dalam hal-hal akademik, pembangunan dan kesediaan diri untuk menempuh alam kerjaya.	4.27
17	SPAk merupakan inisiatif sokongan ke arah pembentukan pelajar yang berilmu, bertanggungjawab, berkebolehan dan berdaya saing.	4.41
	PURATA	4.21

Jadual 5

3. Dapatan Analisis daripada Penilaian SPAk PPD menunjukkan Purata skor 4.21 – Cemerlang (Rujuk Jadual 5). Keseluruhan item memperolehi skor melebihi 4.0, ini bermakna pelajar memberi maklumbalas yang sangat baik.

SKOR MIN TERTINGGI

BIL	SOALAN	Skor MIN
13	Saya mempraktikkan teguran dan nasihat yang diberikan oleh PA.	5.00
14	Prestasi akademik saya semakin baik setelah mendapat nasihat dan bimbingan dari PA	4.45
17	SPAk merupakan inisiatif sokongan ke arah pembentukan pelajar yang berilmu, bertanggungjawab, berkebolehan dan berdaya saing.	4.41

Jadual 6

4. Daripada data di atas (rujuk Jadual 6) skor min tertinggi menunjukkan bahawa:

   i. Skor yang tertinggi ialah 5.00 untuk item no.13 "Saya mempraktikkan teguran dan nasihat yang diberikan oleh PA." Pelajar bersedia menerima teguran dan memperbaiki kekurangan diri.

   ii. Skor yang kedua tinggi ialah 4.45 untuk item no.14 "Prestasi akademik saya semakin baik setelah mendapat nasihat dan bimbingan dari PA." Pemantauan PA memberi kesan kepada pencapaian akademik.

   iii. Skor ketiga tinggi ialah 4.41 untuk item no.17 "SPAk merupakan inisiatif sokongan ke arah pembentukan pelajar yang berilmu, bertanggungjawab, berkebolehan dan berdaya saing." Pelajar bersetuju bahawa SPAk memberi banyak manfaat untuk membantu akademik dan sahsiah diri pelajar.

SKOR MIN TERENDAH

BIL	SOALAN	Skor MIN
8	Saya selesa untuk menceritakan masalah berkaitan akademik dan peribadi kepada PA.	4.04
9	SPAk membantu saya dalam meningkatkan kemahiran komunikasi dengan pelbagai cara.	4.06
2	PA memperuntukkan waktu temujanji bersama saya.	4.06

Jadual 7

CONTOH

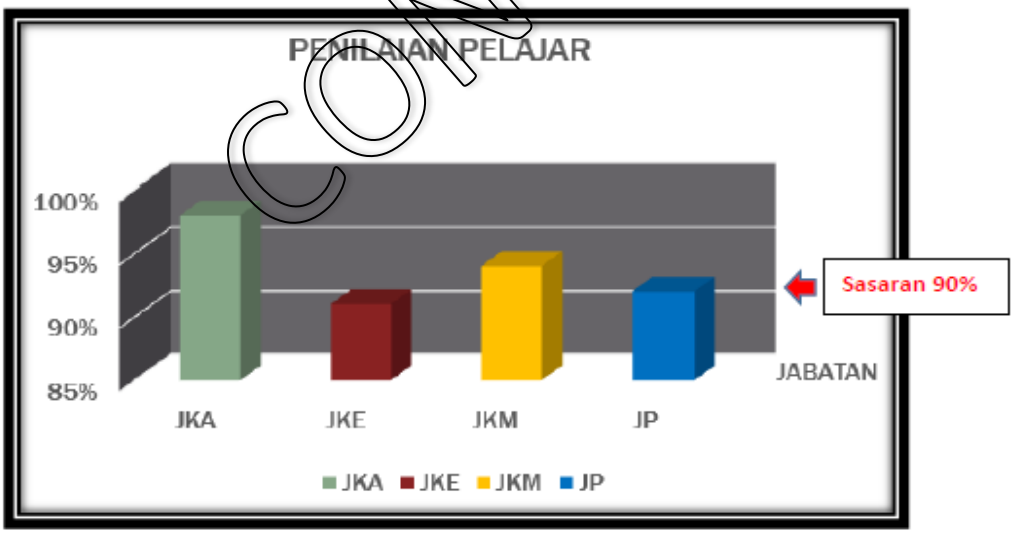
	5. Daripada data di atas (rujuk Jadual 7) dapat dirumuskan bahawa: i. Skor yang terendah ialah 4.04 untuk item no.8 "Saya selesa untuk menceritakan masalah berkaitan akademik dan peribadi kepada PA." PA perlu membina hubungan positif dengan pelajar untuk mewujudkan suasana yang harmoni dan selesa. PA perlu menjadi pendengan yng baik. ii. Skor kedua rendah ialah 4.06 untuk item no.9 "SPAk membantu saya dalam meningkatkan kemahiran komunikasi dengan pelbagai cara." Kemahiran komunikasi perlu dipertingkatkan dikalangan PA agar dapat menyelia pelajar dengan lebih berkesan. Bina kepercayaan dan elakkan komunikasi dan penilaian negatif PA terhadap pelajar. iii. Skor ketiga rendah juga 4.06 untuk item no.2 "PA memperuntukkan waktu temujanji bersama saya." Melalui dapatan ini, didapati ada dikalangan PA tidak melaksanakan perjumpaan. Dapatan penilaian ini menunjukkan beberapa perkara perlu ditambah baik dari segi kebolehan komunikasi dan sikap empati PA ketika berurusan dengan pelajar. Perancangan sistem penasihatan akademik akan berjaya dilaksanakan apabila mendapat kerjasama yang erat daripada semua pihak.
	B. Tindakan/Cadangan Penambahbaikan **TINDAKAN:** i. PA perlu mengenalpasti pelajar yang gagal membuat penilaian dan membuat tindakan susulan supaya tiada pelajar yang tercicir. ii. Memberi alternatif kepada pelajar yang tidak mempunyai capaian stabil ketika hendak membuka sistem SPMP melalui mobile phone. iii. Apabila sistem teknikal bermasalah, PPAP perlu merujuk kepada ICT dengan segera untuk menyelesaikan masalah teknikal.

CONTOH

	CADANGAN PENAMBAHBAIKAN: i. Penyelaras SPAk perlu menerangkan kepada pelajar item-item yang terdapat dalam Penilaian SPAk. i. Penilaian secara dalam talian dibuka lebih awal (Minggu 10-Minggu 12) untuk memberi ruang kepada pelajar menjawab soalan penilaian SPAk. ii. Proses penilaian SPAk dilakukan ketika perjumpaan PA bagi memudahkan pemantauan dilakukan. iii. Terdapat segelintir PA yang kurang peka tentang pemantauan SPAk minggu 12 sehingga hari terakhir. Oleh itu, PPAJ perlu sentiasa mengemaskini data di jabatan agar Ketua Jabatan dan Ketua program dapat memantau dengan cekap

CONTOH

BAHAGIAN 3: ANALISA PENILAIAN SPAk DI POLITEKNIK PORT DICKSON BAGI SESI 1 2021/2022



BAHAGIAN 4: NYATAKAN CADANGAN PENAMBAHBAIKAN BAGI PELAKSANAAN SPAk POLITEKNIK

i. Menggunakan sepenuhnya dokumentasi SPAk secara dalam talian di iPAd SPMP.
ii. Memastikan aktiviti mingguan perlaksanaaan SPAk dilengkapkan dan disemak oleh PPAJ.
iii. Penasihat Akademik boleh mempelbagaikan aktiviti santai tetapi berinformasi yang berpusatkan pelajar sebagai kaedah untuk menarik minat mereka sepanjang sesi perjumpaan di samping mendekatkan diri bersama pelajar.
iv. Memberi sijil penghargaan kepada Penasihat Akademik semester akhir.
v. Mengadakan bengkel pengukuhan SPAk setiap awal semester kepada Penasihat Akademik merujuk kepada maklumbalas keberkesanan SPAk.
vi. Menambahbaik platform *whatapps* group SPAk yang menjadi medium rasmi hebahan informasi berkaitan penasihat akademik.
vii. Mewujudkan platform *telegram* sebagai medium khusus untuk pertanyaan daripada penasihat akademik.
viii. Mewujudkan pautan notice board SPAk sebagi pautan carian menu-menu pelajar dan tatacara penggunaan iPAd.

CONTOH

Disediakan oleh:

(MAYA SOFA BINTI ISMAIL)

Penyelaras Penasihat Akademik Politeknik (PPAP)
Sistem Penasihat Akademik Politeknik (SPAk)
Politeknik Port Dickson

Tarikh: 21/02/2022

Diluluskan oleh:

Timbalan Pengarah Akademik

ABDUL RAHIM BIN IBRAHIM
Timbalan Pengarah (Akademik)
Politeknik Port Dickson
Negeri Sembilan Darul Khusus

Tarikh: 21/02/2022

CONTOH PERANCANGAN PELAKSANAAN AKTIVITI MINGGUAN SPAk

CONTOH PERANCANGAN PELAKSANAAN AKTIVITI MINGGUAN SPAk
SESI I: 2022/2023 (SEMESTER 1)

DOMAIN	KEMAHIRAN	MINGGU SUAI KENAL	MINGGU PEMBELAJARAN DAN PENGAJARAN (PdP)														MINGGU PEPERIKSAAN	CUTI SEMESTER	Tindakan
			MINGGU 1	MINGGU 2	MINGGU 3	MINGGU 4	MINGGU 5	MINGGU 6	MINGGU 7	MINGGU 8	MINGGU 9	MINGGU 10	MINGGU 11	MINGGU 12	MINGGU 13	MINGGU 14			
D1	Sesi pengenalan bersama PA	/	/																
	Pendaftaran Kursus Pelajar																		
	Kenal Diri	MINGGU SUAI KENAL PELAJAR BAHARU																	
	Adab Belajar			/															
	Semakan Pendaftaran Kursus dan KOKO Pelajar																		
	Membina Matlamat Akademik, Kerjaya dan Kehidupan				/														PA
	Pemantauan dan Semakan Pelajar belum dipilih pensyarah																		
D2	Matlamat bercirikan i-SMART					/													
	Makluman Tarikh Akhir Penambahan dan Pengguguran kursus Minggu 5																		
	Halangan Mencapai Matlamat						/												
	Maklum Balas Masalah Akademik (PdPDT/F2F)																		
	Analisis SWOT – Strength, Weakness, Opportunity & Threat							/											PA/PPsi
	Maklum Balas Masalah Kehadiran Kursus Pelajar																		
	Cara Pengiraan PNM & HPNM (Borang Wawasan Diri)								/										
	Maklum Balas Masalah Selain Akademik																		
D4	Perancangan Pembelajaran									/									
	Maklum Balas Kerja Kursus Pelajar																		
	Perancangan Tugas Harian										/								PA
	Pemantauan dan Semakan Masalah Akademik																		
	Pengurusan Masa											/							
	Pemantauan dan Semakan Masalah Selain Akademik																		
	Jam Pembelajaran Pelajar (SLT & LO)												/						
	Makluman Kehadiran Kurang 80%																		
	Gaya Pembelajaran													/					PA/PPsi
	Kepentingan Penilaian Keberkesanan SPAk kepada Pelajar																		PA
	Teknik Pembelajaran														/				PA/PPsi
	Semakan Aduan/Surat Amaran/Surat Cuti/Surat Sakit Pelajar																		
D3	IDOLA (Inspirasi Diri)															/			PA
	Diskusi Santai: Persediaan Peperiksaan																		

PROGRAM TRANSFORMASI SPAk & MInD

BENGKEL PSIKOMETRIK

MELENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 8 (IPAd)

MEMASTIKAN PELAKSANAAN PENILAIAN KEBERKESANAN SPAk OLEH PELAJAR (iPAd)

MELENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 14 (IPAd)

DOMAIN MInD

PROGRAM SPAk

PROGRAM PPsi

LAPORAN PEMANTAUAN DAN PENILAIAN

**Nota*: i) Perjumpaan adalah tidak termasuk cuti semester.
ii) Contoh Perancangan Pelaksanaan Aktiviti Mingguan SPAk boleh diubah mengikut kesesuaian di peringkat politeknik, jabatan, program, pelajar dan sumber yang ada di politeknik.

CONTOH PERANCANGAN PELAKSANAAN AKTIVITI MINGGUAN SPAk
SESI I: 2022/2023 (SEMESTER 2)

DOMAIN	KEMAHIRAN	MINGGU SUAI KENAL	MINGGU PEMBELAJARAN DAN PENGAJARAN (PdP)															PEPERIKSAAN AKHIR	CUTI SEMESTER	Tindakan
			MINGGU 1	MINGGU 2	MINGGU 3	MINGGU 4	MINGGU 5	MINGGU 6	MINGGU 7	MINGGU 8	MINGGU 9		MINGGU 10		MINGGU 11	MINGGU 12	MINGGU 13	MINGGU 14			
D1	Perbincangan Keputusan Peperiksaan Semester Lepas Bersama PA	MINGGU SUAI KENAL PELAJAR BAHARU	/									LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 8 (IPAd)		MEMASTIKAN PELAKSANAAN PENILAIAN SPAk OLEH PELAJAR (IPAd)					LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 14 (IPAd)		PA
	Pemantauan Pendaftaran Kursus Pelajar dan Lapor Diri Pelajar																			
	Perbincangan Penetapan Matlamat Semester 2			/																
	Semakan Pendaftaran Kursus/KOKO dan Lapor Diri Pelajar			/																
D2	Borang Wawasan Diri				/															
	Adab Belajar				/															
	Pemantauan dan Semakan Pelajar belum dipilih pensyarah				/															
	SWOT SAYA					/														
	Makluman Tarikh Akhir Penambahan dan Pengguguran kursus Minggu 5					/														
	Interpretasi Analisis SWOT						/													
	Maklumbalas Masalah Akademik (PdPDT/F2F)						/													
D3	Pemerkasaan Jati Diri (Pembangunan Akademik)							/												
	Maklum Balas Masalah Kehadiran Kursus Pelajar							/												
D4	Gaya Belajar:Visual								/											PA/PPsi
	Maklumbalas Masalah Selain Akademik								/											PA
	Gaya Belajar: Auditori									/										PA/PPsi
	Maklumbalas Kerja Kursus Pelajar									/										
	Gaya Belajar: Kinestetik										/									PA/PPsi
	Pemantauan dan Semakan Masalah Akademik										/									PA
	Kenali Gaya Belajar Anda												/							
	Pemantauan dan Semakan Masalah Selain Akademik												/							
	Teknik Pembelajaran: Peta Minda														/					
	Makluman Kehadiran Kurang 80%														/					
	Teknik Pembelajaran: Mengambil Nota															/				PA/PPsi
	Kepentingan Penilaian Keberkesanan SPAk kepada Pelajar															/				PA
	Teknik Pembelajaran: Kefahaman Membaca																/			PA/PPsi
	Semakan Aduan/Surat Amaran/Surat Cuti/Surat Sakit Pelajar																/			PA
	Kenali Teknik Belajar Anda																	/		
	Diskusi Santai: Ulangkaji Peperiksaan																	/		

DOMAIN MInD

LAPORAN PEMANTAUAN DAN PENILAIAN

**Nota*: i) Perjumpaan adalah tidak termasuk cuti semester.
ii) Contoh Perancangan Pelaksanaan Aktiviti Mingguan SPAk boleh diubah mengikut kesesuaian di peringkat politeknik, jabatan, program, pelajar dan sumber yang ada di politeknik.

CONTOH PERANCANGAN PELAKSANAAN AKTIVITI MINGGUAN SPAk
SESI I: 2022/2023 (SEMESTER 3)

DOMAIN	KEMAHIRAN	MINGGU SUAI KENAL	MINGGU PEMBELAJARAN DAN PENGAJARAN (PdP)														PEPERIKSAAN AKHIR	CUTI SEMESTER	Tindakan
			MINGGU 1	MINGGU 2	MINGGU 3	MINGGU 4	MINGGU 5	MINGGU 6	MINGGU 7	MINGGU 8	MINGGU 9	MINGGU 10	MINGGU 11	MINGGU 12	MINGGU 13	MINGGU 14			
D1	Perbincangan Keputusan Peperiksaan Semester Lepas Bersama PA	MINGGU SUAI KENAL PELAJAR BAHARU	/								LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 8 (IPAd)						LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 14 (IPAd)		
	Pemantauan Pendaftaran Kursus Pelajar dan Lapor Diri Pelajar											MEMASTIKAN PELAKSANAAN PENILAIAN SPAk OLEH PELAJAR (IPAd)							
	Perbincangan Penetapan Matlamat Sem 3			/															
	Semakan Pendaftaran Kursus/KOKO dan Lapor Diri Pelajar																		
D2	Borang Wawasan Diri				/														
	Adab Belajar																		PA
	Pemantauan dan Semakan Pelajar belum dipilih pensyarah																		
D1	SWOT SAYA					/													
	Makluman Tarikh Akhir Penambahan dan Pengguguran kursus Minggu 5																		
D2	Interpretasi Analisis SWOT						/												
	Maklumbalas Masalah Akademik (PdP Online/F2F)																		
D3	Pemerkasaan Jati Diri (Pembangunan Bukan Akademik)							/											
	Maklumbalas Masalah Kehadiran Kursus Pelajar																		
	Pemerkasaan Jasmani, Emosi, Rohani, Intelek dan Sosial								/										PA/PPsi
	Maklumbalas Masalah Selain Akademik																		PA
D2	Kemahiran Belajar									/									PA/PPsi
	Maklumbalas Kerja Kursus Pelajar																		
	Kemahiran Berkomunikasi										/								
	Pemantauan dan Semakan Masalah Akademik																		
	Kemahiran Pengurusan Maklumat											/							PA
	Pemantauan dan Semakan Masalah Selain Akademik																		
	Kemahiran Kerja Bepasukan												/						
	Makluman Kehadiran Kurang 80%																		
	Kemahiran Pengurusan Stress													/					PA/PPsi
	Kepentingan Penilaian Keberkesanan SPAk kepada Pelajar																		
D4	Pengurusan Masa Efektif														/				
	Semakan Aduan/Surat Amaran/Surat Cuti/Surat Sakit Pelajar																		PA
D3	Lagu Semangat vs Diri															/			
	Diskusi Santai: Belajar Saat Akhir																		

DOMAIN MInD

LAPORAN PEMANTAUAN DAN PENILAIAN

**Nota*: i) Perjumpaan adalah tidak termasuk cuti semester.
ii) Contoh Perancangan Pelaksanaan Aktiviti Mingguan SPAk boleh diubah mengikut kesesuaian di peringkat politeknik, jabatan, program, pelajar dan sumber yang ada di politeknik.

CONTOH PERANCANGAN PELAKSANAAN AKTIVITI MINGGUAN SPAk
SESI I: 2022/2023 (SEMESTER 4)

DOMAIN	KEMAHIRAN	MINGGU SUAI KENAL	MINGGU PEMBELAJARAN DAN PENGAJARAN (PdP)														PEPERIKSAAN AKHIR	CUTI SEMESTER	Tindakan
			MINGGU 1	MINGGU 2	MINGGU 3	MINGGU 4	MINGGU 5	MINGGU 6	MINGGU 7	MINGGU 8	MINGGU 9	MINGGU 10	MINGGU 11	MINGGU 12	MINGGU 13	MINGGU 14			
D1	Perbincangan Keputusan Peperiksaan Semester Lepas Bersama PA	MINGGU SUAI KENAL PELAJAR BAHARU	/								LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 8 (IPAd)	MEMASTIKAN PELAKSANAAN PENILAIAN SPAk OLEH PELAJAR (IPAd)					LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 14 (IPAd)		PA
	Pemantauan Pendaftaran Kursus Pelajar dan Lapor Diri Pelajar																		
	Perbincangan Penetapan Matlamat Sem 4			/															
	Semakan Pendaftaran Kursus dan Lapor Diri Pelajar			/															
D4	Adab Belajar				/														
	Pemantauan dan Semakan Pelajar belum dipilih pensyarah				/														
D1	Borang Wawasan Diri					/													
	Makluman Tarikh Akhir Penambahan dan Pengguguran kursus Minggu 5					/													
D2	SWOT Saya						/												
	Maklumbalas Masalah Akademik (PdP Online/F2F)						/												
	Interpretasi SWOT							/											
	Maklumbalas Masalah Kehadiran Kursus Pelajar							/											
D3	Perkongsian Pengalaman Program Ilmiah/ Khidmat Komuniti (Jika Ada)								/										PA/PPsi
	Maklumbalas Masalah Selain Akademik								/										
D2	Kemahiran Tegas Diri									/									
	Maklumbalas Kerja Kursus Pelajar									/									
	Kemahiran Sahsiah (Moral dan Etika)										/								
	Pemantauan dan Semakan Masalah Akademik										/								
	Kemahiran Penyelesaian Masalah											/							
	Pemantauan dan Semakan Masalah Selain Akademik											/							
	Kemahiran Pemikiran Kritis												/						PA
	Makluman Kehadiran Kurang 80%												/						
	Kemahiran Kepimpinan													/					
	Kepentingan Penilaian Keberkesanan SPAk kepada Pelajar													/					
D4	Kemahiran Pengucapan Efektif														/				
	Semakan Aduan/Surat Amaran/Surat Cuti/Surat Sakit Pelajar														/				
	Persediaan Menghadapi Peperiksaan															/			
	Diskusi Santai																		

DOMAIN MInD

LAPORAN PEMANTAUAN DAN PENILAIAN

**Nota*: i) Perjumpaan adalah tidak termasuk cuti semester.
ii) Contoh Perancangan Pelaksanaan Aktiviti Mingguan SPAk boleh diubah mengikut kesesuaian di peringkat politeknik, jabatan, program, pelajar dan sumber yang ada di politeknik.

POLITEKNIK MALAYSIA

CONTOH PERANCANGAN PELAKSANAAN AKTIVITI MINGGUAN SPAk
SESI I: 2022/2023 (SEMESTER 5 & 6)

DOMAIN	KEMAHIRAN	MINGGU SUAI KENAL	MINGGU PEMBELAJARAN DAN PENGAJARAN (PdP)															PEPERIKSAAN AKHIR	CUTI SEMESTER	Tindakan
			MINGGU 1	MINGGU 2	MINGGU 3	MINGGU 4	MINGGU 5	MINGGU 6	MINGGU 7	MINGGU 8	MINGGU 9		MINGGU 10		MINGGU 11	MINGGU 12	MINGGU 13	MINGGU 14			
D1	Perbincangan Keputusan Peperiksaan Semester Lepas Bersama PA	MINGGU SUAI KENAL PELAJAR BAHARU	/								LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 8 (IPAd)		MEMASTIKAN PELAKSANAAN PENILAIAN SPAk OLEH PELAJAR (IPAd)						LENGKAPKAN DAN HANTAR PEMANTAUAN SPAk MINGGU 14 (IPAd)		PA
	Pemantauan Pendaftaran Kursus Pelajar dan Lapor Diri Pelajar																			
	Perbincangan Penetapan Matlamat Sem 5			/																
	Panduan Bagi Penempatan Latihan Industri																			
	Semakan Pendaftaran Kursus dan Lapor Diri Pelajar																			
D2	Borang Wawasan Diri				/															
	Adab Belajar																			
	Pemantauan dan Semakan Pelajar belum dipilih pensyarah																			
D1	SWOT SAYA					/														
	Makluman Tarikh Akhir Penambahan dan Pengguguran kursus Minggu 5																			
D2	Interpretasi Analisis SWOT						/													
	Maklumbalas Masalah Akademik (PdP Online/F2F)																			
D3	Kemahiran Keusahawanan							/												PA/ Keusahawan
	Maklumbalas Masalah Kehadiran Kursus Pelajar																			PA
	Kemahiran Profesional								/											PA/CISEC
	Maklumbalas Masalah Selain Akademik																			PA
D5	Kecemerlangan Akademik									/										PA/CISEC
	Maklumbalas Kerja Kursus Pelajar																			PA
	Melanjutkan Pelajaran dan Meningkatkan Kemahiran										/									PA/CISEC
	Pemantauan dan Semakan Masalah Akademik																			PA
	Kecemerlangan Kerjaya - Usahawan/Kerja Sendiri												/							PA/ Keusahawan
	Semakan Bagi Penempatan Latihan Industri																			PA
	Pemantauan dan Semakan Masalah Selain Akademik																			PA
	Penyediaan Resume														/					PA/CISEC
	Makluman Kehadiran Kurang 80%																			
	Panduan Temuduga															/				PA/CISEC
	Kepentingan Penilaian SPAk kepada Pelajar																			PA
	Pengesanan Graduan																/			PA/CISEC
	Semakan Aduan/Surat Amaran/Surat Cuti/Surat Sakit Pelajar																			
	Kunci kejayaan																	/		PA
	Diskusi Santai: Graduat																			

DOMAIN MInD
LAPORAN PEMANTAUAN DAN PENILAIAN
CISEC
KEUSAHAWANAN

**Nota*: i) Perjumpaan adalah tidak termasuk cuti semester.
ii) Contoh Perancangan Pelaksanaan Aktiviti Mingguan SPAk boleh diubah mengikut kesesuaian di peringkat politeknik, jabatan, program, pelajar dan sumber yang ada di politeknik.

AHLI JAWATANKUASA PENULISAN

Penaung:
En. Mohd Noor bin Shahudin A.M.K.
Pengarah Kanan (Akademik)
Jabatan Pendidikan Politeknik dan Kolej Komuniti

Penasihat:
Dr. Zainal Azhar bin Zainal Abidin
Pengarah
Bahagian Instruksional dan Pembelajaran Digital (BIPD)
dan
En. Noor Azizan bin Itam (Mantan Pengarah BIPD)

Pengerusi:
Dr. Siti Noridah binti Ali
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Timbalan Pengerusi:
En. Ahmad Syaffiq bin Md Baharudin
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

Penyunting:
Dr. Siti Noridah binti Ali
En. Ahmad Syaffiq bin Md Baharudin
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

***Pereka Kulit Buku*:**
Pn. Ummu Kalsom binti A. Latiff
Bahagian Instruksional dan Pembelajaran Digital (BIPD)

***Penulis*:**

Pendahuluan
En. Ahmad Syaffiq bin Md Baharudin (BIPD)
En. Firdaus bin Mohamad Sharif (PHT)

Matlamat Kewujudan SPAk
En. Ahmad Syaffiq bin Md Baharudin (BIPD)
En. Firdaus bin Mohamad Sharif (PHT)

Peranan dan Tanggungjawab
Pn. Maya Sofa binti Ismail (PPD)
Pn. Ruslina binti Awang @ Faudzi (PMS)
Pn. Sinatu Sadiah binti Shapie (PMK)

Prosedur Pelantikan
En. Ahmad Syaffiq bin Md Baharudin (BIPD)
En. Firdaus bin Mohamad Sharif (PHT)

Pelaksanaan SPAk
Pn. Arifah binti Mohd Taib (PMJ)
Pn. Wido Mes Wati binti Sukadi (PMJB)

Dokumen Pelaksanaan
Pn. Siti Noor binti Abdullah (PKB)
Pn. Aishah binti Sheikh Abu Bakar (PUO)
En. Mohd Redzuan bin Rosly (PSMZA)

Penutup
Pn. Siti Noor binti Abdullah (PKB)
Pn. Maya Sofa binti Ismail (PPD)

Terima kasih atas sumbangan

Pn. Hjh. Wan Norisah binti Wan Musa, En. Jamaludin bin Suhaimi, Pn. Wan Nurdiyana binti Wan Yusof, Pn. Zarinah binti Zaini, Pn. Noraslinda binti Harun, Pn. Julia binti Marjuki, Pn. Norasmah binti Saad, Pn. Nurul Aini binti Ghazali dan Pn. Ummu Kalsom binti A. Latiff

Sekalung Penghargaan

Ucapan setinggi-tinggi penghargaan kepada semua pihak yang terlibat secara langsung serta semua pihak yang telah bekerjasama di dalam pemurnian Buku Panduan Sistem Penasihatan Akademik (SPAk) Politeknik Malaysia Edisi 2022, KPT dan Pasukan Penulis Buku Panduan Sistem Penasihatan Akademik (SPAk) Politeknik Malaysia Edisi 2016, KPT.

KEMENTERIAN PENGAJIAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

Jabatan Pendidikan Politeknik dan Kolej Komuniti
Aras 4-7 Galeria PjH, Jalan P4W,
Persiaran Perdana, Presint 4,
62100 Wilayah Persekutuan Putrajaya
Tel: 03-889190000 | Faks: 03-88919300
www.mypolycc.edu.my

e ISBN 978-629-96546-2-9

9 7 8 6 2 9 9 6 5 4 6 2 9

KEMENTERIAN PENGAJIAN TINGGI
BPSPAKPOLY EDISI 2022

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

TAKLIMAT:

BIASISWA, TAJAAN & PINJAMAN

SESI 1: 2025/ 2026

SHAZRINA MOHAMED ISA
Pegawai Biasiswa
Jabatan Hal Ehwal Pelajar
PSA
shazrina@psa.edu.my
03-51634050

BIASISWA/ TAJAAN / PINJAMAN

Siswa Siswi Politeknik Sultan Salahuddin Abdul Aziz Shah **boleh memohon sebarang dermasiswa/ biasiswa/ tajaan mahu pun bantuan kewangan dari pelbagai institusi dengan inisiatif siswa siswi sendiri berdasarkan kelayakan.**

CONTOH INSTITUSI DAN BADAN YANG MENAWARKAN DERMASISWA/ BIASISWA/ TAJAAN / BANTUAN KEWANGAN

Kategori	Definisi	Contoh	Ciri Utama
Pinjaman	Bantuan kewangan yang perlu dibayar balik selepas tamat pengajian.	- PTPTN (Perbadanan Tabung Pendidikan Tinggi Nasional) - MARA (pinjaman boleh ubah)	- Perlu dibayar balik - Ada faedah atau tidak bergantung pada pemberi pinjaman
Biasiswa/ Dermasiswa	Pembiayaan pendidikan penuh atau sebahagian berdasarkan pencapaian atau keperluan.	- Biasiswa JPA - Dermasiswa JPA -Dermasiswa b40 TVET -KUOK Foundation -JAKOA -Elaun Pelajar Khas (PPK) -Elaun Pelajar OKU (BKOKU)	- Tidak perlu dibayar balik - Berdasarkan merit/keperluan
Bantuan Kewangan	Sumbangan kewangan untuk pelajar yang memerlukan, biasanya tidak perlu dibayar balik.	- Bantuan Zakat - Bantuan Khas IPT dari kerajaan negeri -Baitulmal -KWSP	- Fokus kepada pelajar kurang berkemampuan - Tidak perlu dibayar balik

- **Ditawarkan melalui UPU @ tidak perlu memohon**

YTN MY Brighter Future

- Tiada permohonan perlu dibuat untuk Dermasiswa ini.

- Calon Dermasiswa MyBF **dipilih oleh Kementerian Pendidikan Malaysia (KPM) melalui Unit Pusat Universiti (UPU) yang membuat padanan dengan pengkalan data eKasih (Portal Pembasmian Kemiskinan)** pada sesi pengambilan utama kemasukan ke IPTA setiap tahun.

https://bmipenajaan.jpa.gov.my

YAYASAN KUOK BERHAD

BIASISWA UNTUK DIPLOMA 2024
POLITEKNIK AWAM MALAYSIA

YAYASAN KUOK BERHAD mempelawa permohonan daripada pelajar di Politeknik Awam Malaysia untuk bantuan kewangan tersebut di atas.

Biasiswa yang bernilai sehingga RM9,000 setahun akan ditawarkan kepada calon yang berjaya.

Syarat-syarat

(1) Pemohon mestilah warganegara Malaysia.

(2) Pemohon mestilah mempunyai -

sekurang-kurangnya **4 kepujian dalam SPM** bagi mana-mana mata pelajaran seperti berikut :

Bahasa Malaysia, Bahasa Inggeris, Matematik, Sains atau satu mata pelajaran yang berkaitan dengan kursus yang dipohon / diikuti

ATAU

gred purata sekurang-kurangnya 3.0 dan ke atas dalam keputusan terbaru di politeknik.

(3) Bantuan Kewangan Yayasan Kuok hanya untuk pelajar **miskin** sahaja.

(4) Pemohon mestilah tidak memegang apa-apa biasiswa daripada organisasi lain seperti biasiswa JPA, dsb.

BAGAIMANA MEMOHON?

Pemohon **PERLU** mengikuti Langkah 1 dan 2 seperti di bawah :

Langkah 1

Penyerahan Borang Permohonan Dalam Talian

Memohon dan menghantar permohonan dalam talian di **apply.kuokfoundation.org**

Tarikh Buka : **5 Februari 2024**
Tarikh Tutup : **26 Februari 2024**

Langkah 2

Penyerahan Borang Permohonan Bercetak

Selepas pemohon menghantar permohonan melalui dalam talian, pemohon **JUGA PERLU mencetak borang permohonan** yang lengkap dan menghantar bersama dengan dokumen sokongan melalui kurier atau serahan tangan ke pejabat Yayasan.

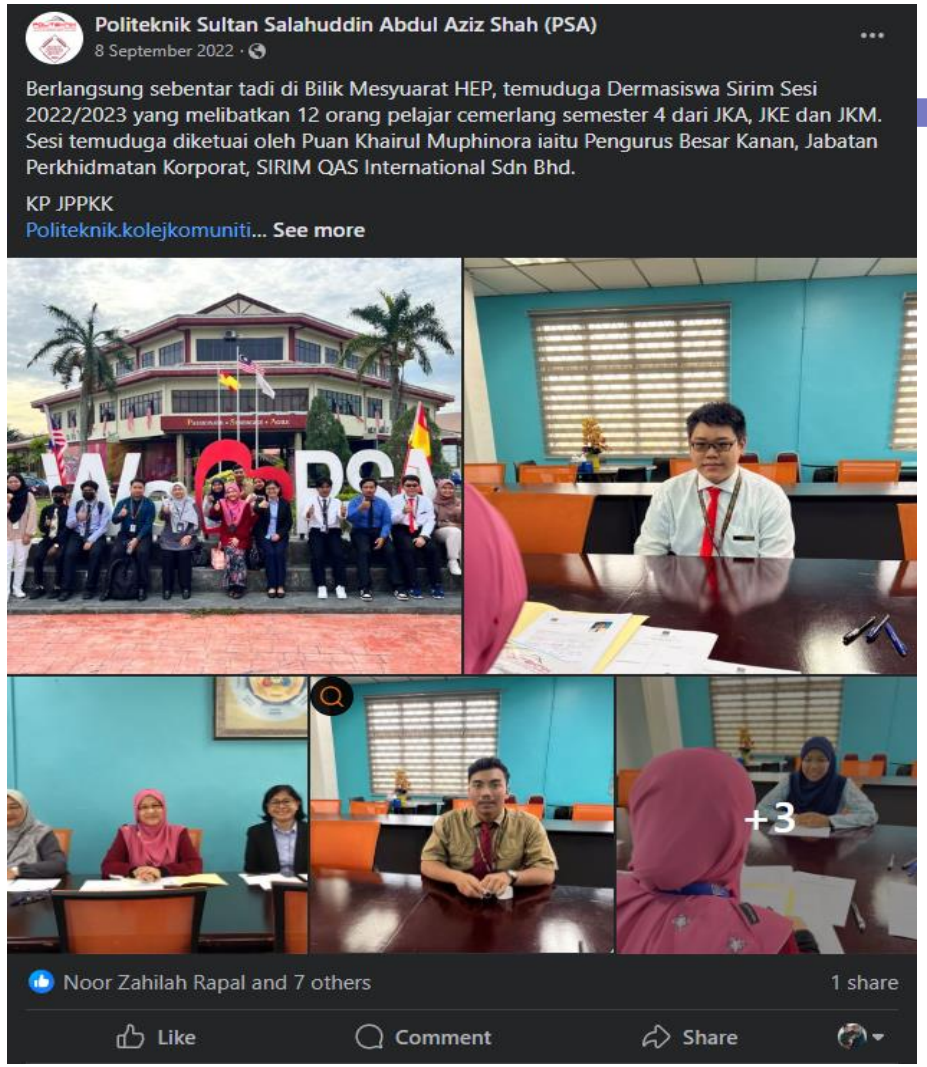
Tarikh Tutup : **4 Mac 2024**

Borang yang tidak lengkap atau lambat tidak akan dipertimbangkan.

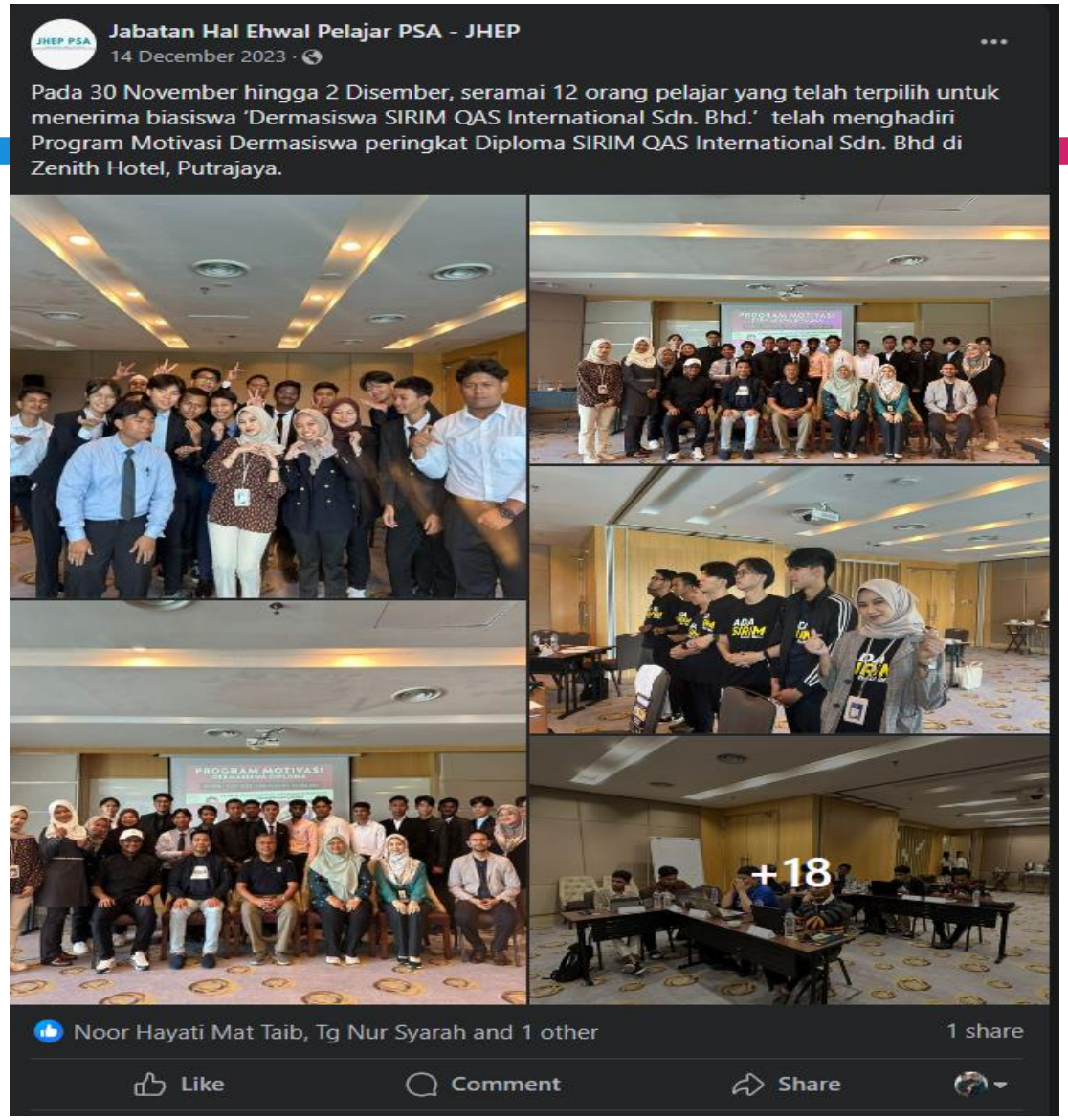
KUOK FOUNDATION BERHAD (BIASISWA UNTUK DIPLOMA 2024)
Letter Box No. 110, 16th Floor UBN Tower, 10 Jalan P Ramlee, 50250 KUALA LUMPUR
www.kuokfoundation.com
co. reg. no. 197001000392 (9641-T)

https://kuokfoundation.com

Dermasiswa SIRIM

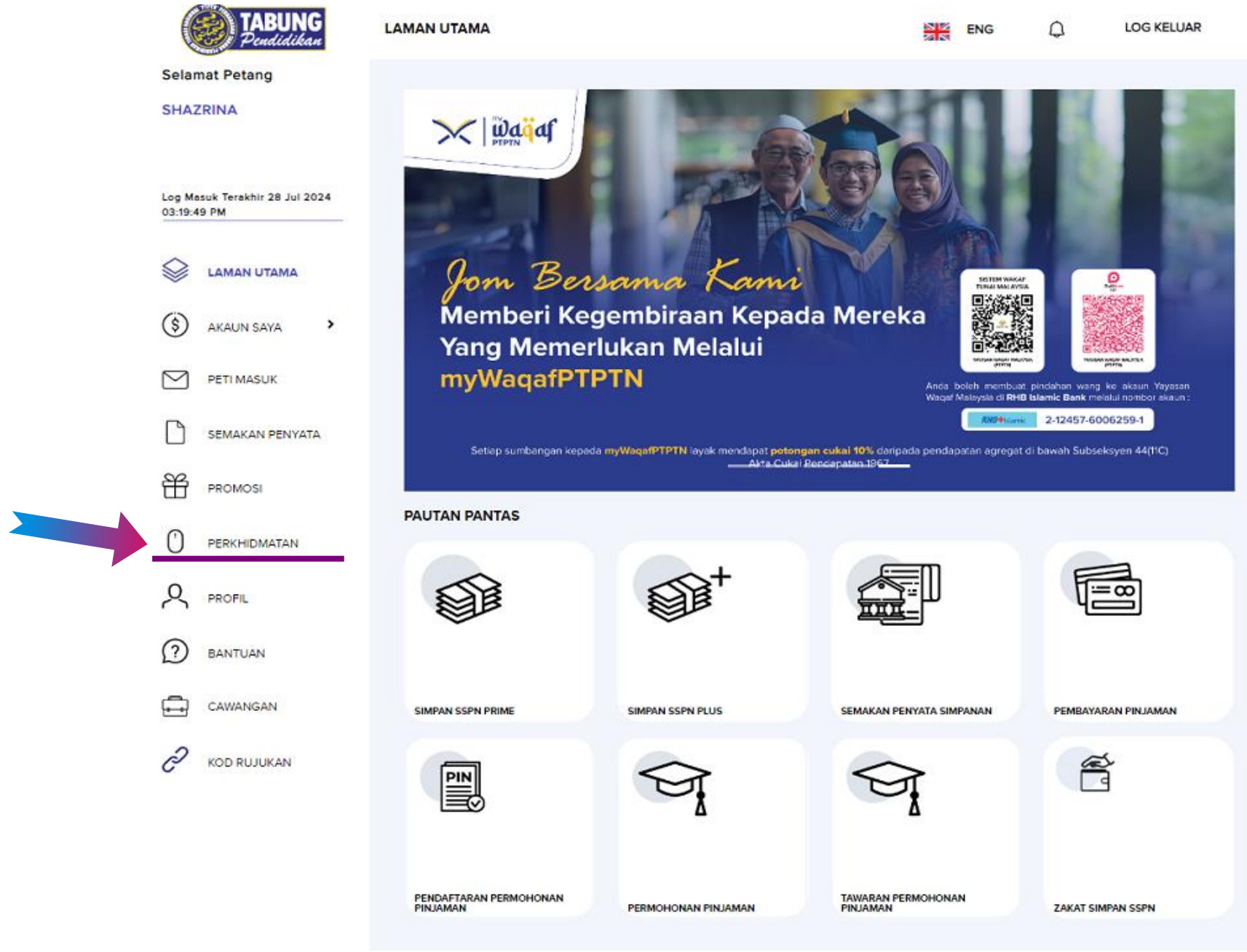


Dermasiswa SIRIM



PTPTN

https://www.ptptn.gov.my/myptptn/


TABUNG Pendidikan
Selamat Petang
SHAZRINA
Log Masuk Terakhir 28 Jul 2024 03:19:49 PM
LAMAN UTAMA
AKAUN SAYA
PETI MASUK
SEMAKAN PENYATA
PROMOSI
PERKHIDMATAN
PROFIL
BANTUAN
CAWANGAN
KOD RUJUKAN
LAMAN UTAMA
ENG
LOG KELUAR
myWaqaf PTPTN
Jom Bersama Kami
Memberi Kegembiraan Kepada Mereka Yang Memerlukan Melalui myWaqafPTPTN
Anda boleh membuat pindahan wang ke akaun Yayasan Waqaf Malaysia di RHB Islamic Bank melalui nombor akaun :
2-12457-6006259-1
Setiap sumbangan kepada myWaqafPTPTN layak mendapat potongan cukai 10% daripada pendapatan agregat di bawah Subseksyen 44(11C) Akta Cukai Pendapatan 1967
PAUTAN PANTAS
SIMPAN SSPN PRIME
SIMPAN SSPN PLUS
SEMAKAN PENYATA SIMPANAN
PEMBAYARAN PINJAMAN
PIN
PENDAFTARAN PERMOHONAN PINJAMAN
PERMOHONAN PINJAMAN
TAWARAN PERMOHONAN PINJAMAN
ZAKAT SIMPAN SSPN

Pinjaman | Bayaran Balik Pinjaman | Simpan SSPN

Saluran Bayaran

Semakan Jadual Permohonan/ Bayaran Pinjaman

Pendaftaran Permohonan Pinjaman

Permohonan Pinjaman

Tawaran Permohonan Pinjaman

Semakan Wang Pendahuluan Pinjaman (WPP)

Rayuan

PTPTN

MAKLUMAT IPT DAN PROGRAM

Nama IPT	POLITEKNIK PREMIER SULTAN SALAHUDDIN ABDUL AZIZ
Nama Program	SEPENUH MASA-DIPLOMA INSURANS(3 TAHUN)
Peringkat Pengajian	DIPLOMA SEPENUH MASA
Bank Panel	BANK ISLAM MALAYSIA BERHAD (BIMB)
Kod IPT	18B
Kod Program	C5218
Tempoh Pengajian	3 TAHUN
Kadar Maksimum	RM4,750.00
Kadar (75%)	RM3,560.00
Kadar (50%)	RM2,380.00
Semester 1	01/08
Semester 2	01/01
Tarikh Akhir Akreditasi	07/01/2097
Tarikh Akhir Program	07/01/2097
Tarikh Akhir Premis	07/01/2097

1

Permohonan PTPTN terbaharu (Kelompok 2)

TARIKH MULA PERMOHONAN PINJAMAN

Semester 1	Kelompok 1	01/07	Kelompok 2	01/08
Semester 2	Kelompok 1	01/12	Kelompok 2	01/01

TARIKH TUTUP PERMOHONAN PINJAMAN

Tarikh tutup (Kelompok 2)

Semester 1	Kelompok 1	31/07	Kelompok 2	31/08
Semester 2	Kelompok 1	31/12	Kelompok 2	31/01

PTPTN

MAKLUMAT BAYARAN PINJAMAN (PEMINJAM SEDIA ADA)

	Kelompok 1		Kelompok 2	
Semester 1	PTPTN hantar data Ke IPT	01/07	PTPTN hantar data Ke IPT	17/07
	PTPTN terima status pengajian pelajar daripada IPT	14/07	PTPTN terima status pengajian pelajar daripada IPT	28/07
	PTPTN Proses Bayaran	16/07	PTPTN Proses Bayaran	30/07
	Kredit Ke Akaun Peminjam	24/07	Kredit Ke Akaun Peminjam	07/08

	Kelompok 1		Kelompok 2	
Semester 2	PTPTN hantar data Ke IPT	01/01	PTPTN hantar data Ke IPT	17/01
	PTPTN terima status pengajian pelajar daripada IPT	14/01	PTPTN terima status pengajian pelajar daripada IPT	28/01
	PTPTN Proses Bayaran	16/01	PTPTN Proses Bayaran	30/01
	Kredit Ke Akaun Peminjam	24/01	Kredit Ke Akaun Peminjam	07/02

PUNCA UTAMA PTPTN DITARIK BALIK ATAU DISEKA

- Keputusan PNM/GPA bawah 2.00
- Menangguh pengajian
- Digantung pengajian

Keputusan PNM/GPA bawah 2.00

Jadual pinjaman adalah seperti berikut:

Pelajar IPTA dan Politeknik		
Contoh Semester Pengajian	**PNG/ GPA**	**Status Bayaran**
Semester 1	< 2.0	Dibayar
Semester 2	2.0 dan ke atas	Dibayar
Semester 3	< 2.0	Tidak dibayar berasaskan peperiksaan Semester 1
Semester 4	2.0 dan ke atas	Dibayar
Semester 5	2.0 dan ke atas	Tidak dibayar berasaskan peperiksaan Semester 3
Semester 6	2.0 dan ke atas	Dibayar

GARIS PANDUAN
KAEDAH PEMBAYARAN YURAN PENGAJIAN PELAJAR TAJAAN

BIL	NAMA PENAJA	KAEDAH BAYARAN	
		Pelajar Baharu	**Pelajar Sedia Ada**
1	Lembaga Zakat Negeri dan Baitulmal	'*Pay and Claim*' - yuran dibayar oleh pelajar kepada unit kewangan sewaktu pendaftaran, dapatkan resit dan tuntut bayaran daripada institusi tajaan	-Pengeluaran invois oleh Unit Kewangan PSA kepada LZS - pelajar tidak perlu membayar yuran pengajian dan yuran asrama sewaktu pendaftaran -pelajar perlu isi borang tajaan sewaktu permulaan semester

GARIS PANDUAN
KAEDAH PEMBAYARAN YURAN PENGAJIAN PELAJAR TAJAAN

BIL	NAMA PENAJA	KAEDAH BAYARAN	
		Pelajar Baharu	Pelajar Sedia Ada
2	Kumpulan Wang Simpanan Pekerja (KWSP)	‘Pay and Claim’ -yuran dibayar oleh pelajar kepada unit kewangan sewaktu pendaftaran, dapatkan resit dan tuntut bayaran daripada institusi tajaan	‘Pay and Claim’ yuran dibayar kepada unit kewangan, dapatkan resit dan tuntut bayaran daripada institusi tajaan

GARIS PANDUAN
KAEDAH PEMBAYARAN YURAN PENGAJIAN PELAJAR TAJAAN

BIL	NAMA PENAJA	KAEDAH BAYARAN	
		Pelajar Baharu	Pelajar Sedia Ada
3	Biasiswa Jabatan Perkhidmatan Awam (JPA) - HLP KPT – Biasiswa YB Menteri Pendidikan Tinggi	Pengeluaran invois oleh Unit Kewangan PSA kepada LDP, JPA .	- Memo pengeluaran invois daripada JHEP 2 minggu selepas pendaftaran pelajar baharu

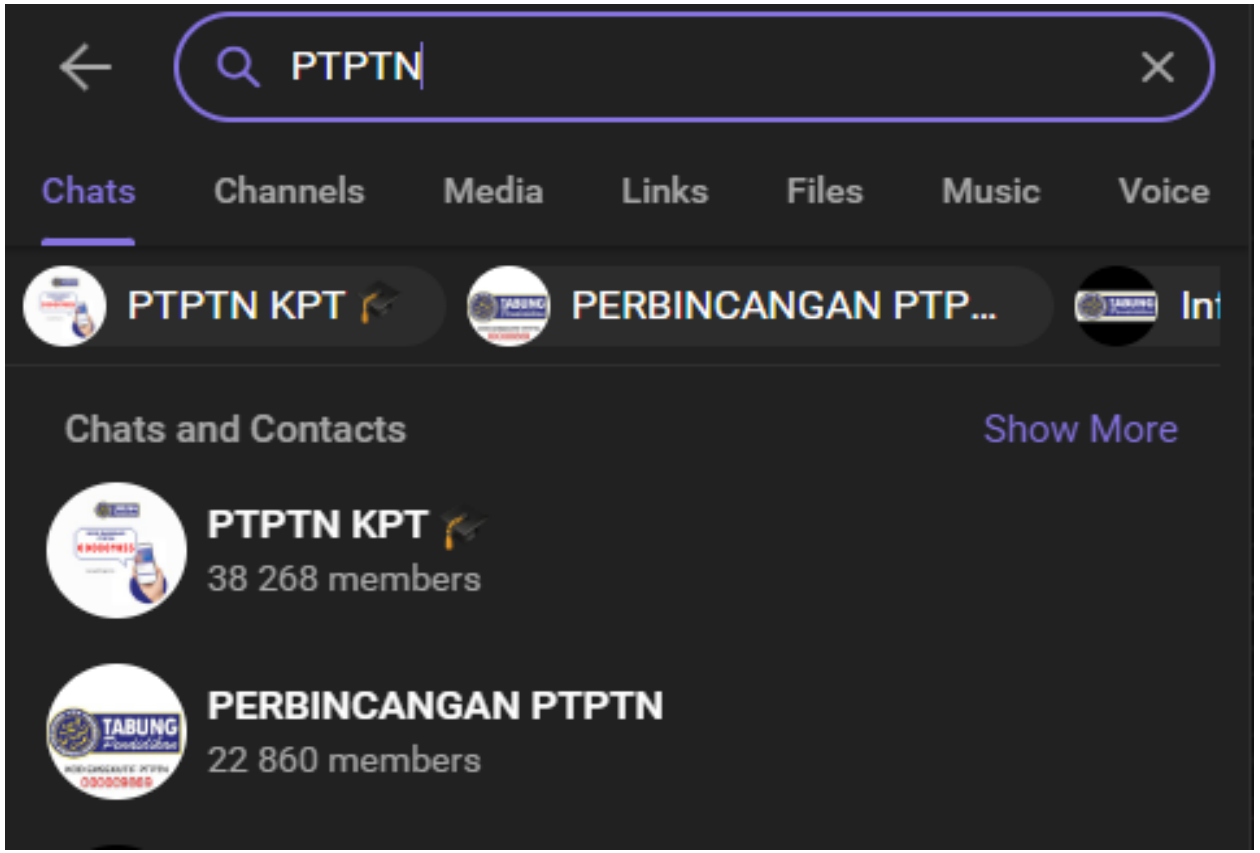
GARIS PANDUAN
KAEDAH PEMBAYARAN YURAN PENGAJIAN PELAJAR TAJAAN

BIL	NAMA PENAJA	KAEDAH BAYARAN	
		Pelajar Baharu	**Pelajar Sedia Ada**
4	Dermasiswa Yayasan Tenaga Nasional (YTN) Dermasiswa B40 TVET	1) Bayaran yuran pengajian menggunakan platform Jompay 2) Yuran pengajian akan dibayar melalui bayaran Dermasiswa.	1) Bayaran yuran pengajian menggunakan platform Jompay 2) Yuran pengajian akan dibayar melalui bayaran Dermasiswa 3) Jika pelajar memilih untuk tidak menjelaskan bayaran yuran pengajian, penolakan amaun yuran pengajian akan dilakukan daripada amaun dermasiswa

GARIS PANDUAN
KAEDAH PEMBAYARAN YURAN PENGAJIAN PELAJAR TAJAAN

BIL	NAMA PENAJA	KAEDAH BAYARAN	
		Pelajar Baharu	Pelajar Sedia Ada
4	Dermasiswa JPA PTPTN Dermasiswa SIRIM Lain-lain	Bayaran yuran pengajian menggunakan platform Jompay seperti biasa Bayaran diuruskan oleh institusi tajaan	Bayaran yuran pengajian menggunakan platform Jompay seperti biasa Bayaran diuruskan oleh institusi tajaan

Telegram


PTPTN
Chats
Channels
Media
Links
Files
Music
Voice
PTPTN KPT
PERBINCANGAN PTP...
Chats and Contacts
Show More
PTPTN KPT
38 268 members
PERBINCANGAN PTPTN
22 860 members

Telegram

https://t.me/ScholarshipsMy

NAMUN BEGITU PASTIKAN...

Anda hanya **mempunyai 1 sahaja bentuk tajaan/ biasiswa/ pinjaman penuh.**

dan...

Gunakan wang bantuan pendidikan yang diberi **dengan sebaiknya.**

SILA HUBUNGI PEGAWAI BIASISWA DI JABATAN ANDA :

JKA – T.B.C

JKE - Pn. Salizahanim binti Leman

JPG – En. Muhammad Hashim bin Ahmad

JKM - Pn. Suaiza binti Khairi

PEGAWAI BIASISWA (JHEP)

Pn. Shazrina Binti Mohamed Isa

shazrina@psa.edu.my

03-51634050

JOM TEMUI BOOTH PTPTN PADA :

29 Julai - 30 Julai 2025

29 Julai 2025 Jam : 2.00 ptg - 4.00 ptg

30 Julai 2025 Jam : 10.00 pg - 4.00 ptg

Dewan Al Jazari, PSA

PERKHIDMATAN YANG KAMI SEDIAKAN :

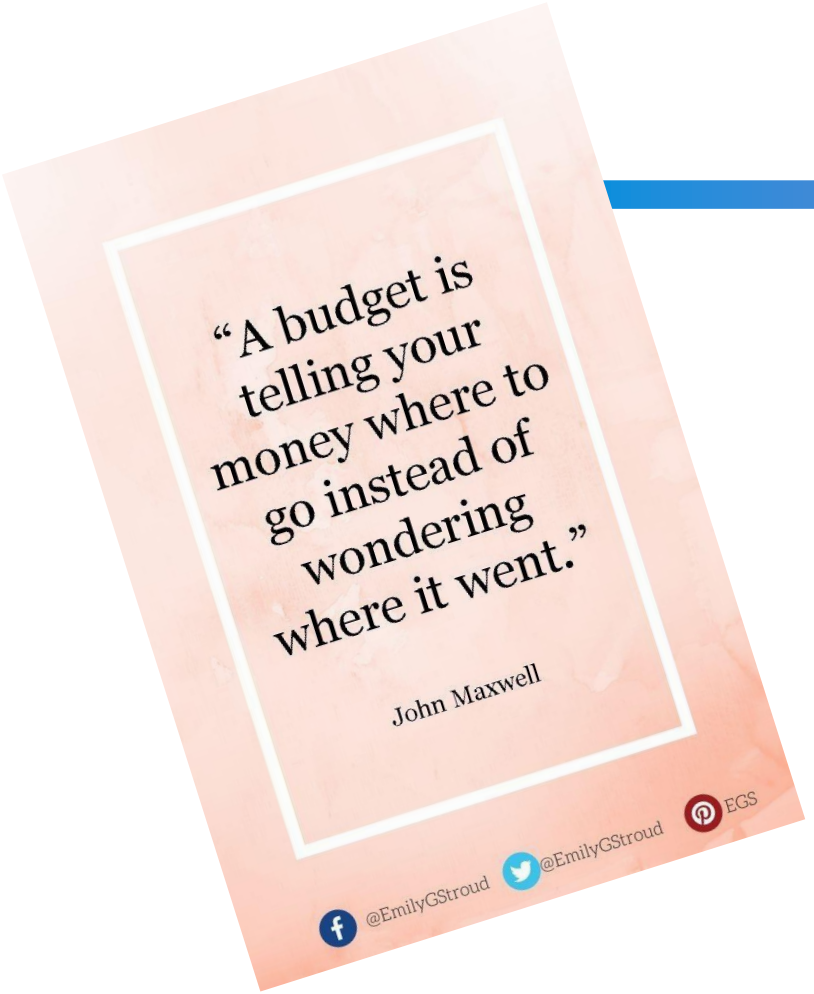
1. Pelajar berpeluang untuk membuka akaun Simpan SSPN
2. Penerangan ringkas berkenaan cara memohon pinjaman Ptptn

MOHON BAWA HAND PHONE MASING-MASING

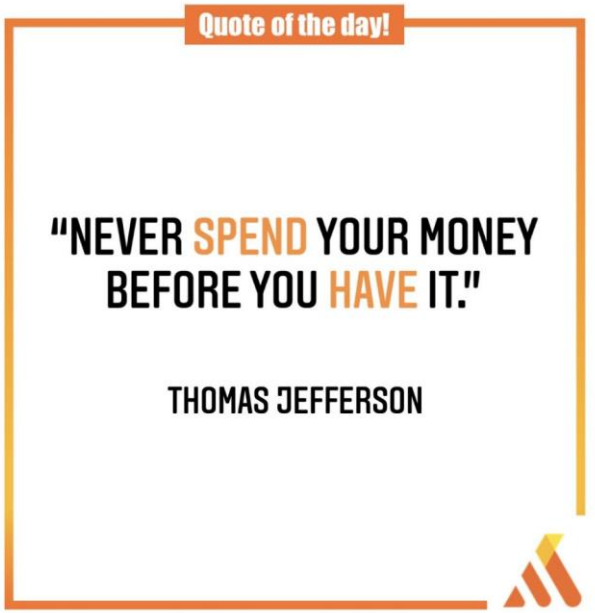
Sebarang pertanyaan boleh wasup *Pn.ika 0197014450 @ Pn.amani 0192056890

Jom datang beramai-ramai.

Jumpa anda di sana!


“A budget is telling your money where to go instead of wondering where it went.”
John Maxwell
@EmilyGStroud
@EmilyGStroud
EGS

“IT IS THRIFTY TO PREPARE TODAY FOR THE WANTS OF TOMORROW.”
- Aesop,
Greek storyteller
Self.


Quote of the day!
“NEVER SPEND YOUR MONEY BEFORE YOU HAVE IT.”
THOMAS JEFFERSON

Thanks for Listening
and
Good Luck for Your 1st Semester!!!

Appendix C5-1a - Table of competency matrix of the DKM programme teaching staff(KOMPETENSI MATRIKS DKM 2025)

No	Name	Post Held	Date of First Appointment at the Fac/Sch/Dept.	Part or Full Time or from other Programmes	Academic Qualifications/ Field of Specialization/ Institution and Year of Award	Professional Qualifications	Subjek Di Ajar					Adakah Matapelajaran bertepatan dengan kelulusan akademik (Ya atau Tidak)	Membership in Professional Bodies	Teaching
MECHANICAL ENGINEERING DEPARTMENT														
1	MUHAMMAD FAIZ B. ABDULLAH	Senior Lecturer	01.02.2004	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'03	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	DJJ50193	SJK20324				YA	BEM, Ahli Majlis Rekabentuk Malaysia	21 years
2	MOHD SHARIZAN B MOHD SHARIF	Senior Lecturer	01.04.2002	Full time	Sarjana Muda Kejuruteraan Mekanikal, UTM'2013	SIJIL KEMAHIRAN MALAYSIA - Mesin Level 3	DJJ50193	DJJ30302	DJJ40142			YA	BEM, Malaysian Nature Society (MNS)	23 years
3	DR. NORASIAH BINTI MUHAMMAD	Senior Lecturer	01.04.2004	Full time	SARJANA MUDA KEJURUTERAAN BAHAN. SARJANA SAINS KEJURUTERAAN BAHAN. DOKTOR FALSAFAH KEJURUTERAAN MEKANIKAL (UiTM SHAH ALAM)	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	DJJ30293	DJJ50193	DJJ10232			YA	BEM	21 years
4	SHARIZA AZWIN BINTI YAHYA	Senior Lecturer	20.01.2003	Full time	Sarjana Muda Kejuruteraan (Mekanikal - Aeronautik), UTM'2000 Diploma Perguruan (KPLI)	SIJIL CIDB MALAYSIA - CONSTRUCTION SITE SUPERVISOR (MECHANICAL WORKS) (LEVEL 4) DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4 SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 AUTODESK CERTIFIED PROFESSIONAL_Inventor AUTODESK CERTIFIED PROFESSIONAL_Inventor 2015	DJJ30323	DJJ20252	DJJ40142	DJJ20282		YA	BEM MAJLIS REKABENTUK MALAYSIA	22 years
5	ZETTY ROHAIZA BINTI MOHD SAHAK @ ISHAK	Senior Lecturer	01.04.2004	Full time	SARJANA FALSAFAH(MEKANIKAL) Sarjana Muda Kejuruteraan Mekanikal, UTM'2000	Profesional Certificate in System Integration (2021) (European International Universiti). PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS SKM 3- FABRIKASI LOGAM, MINYAK & GAS (2023)	DJJ30313	DJJ50193	DJJ10232	DJJ30302		YA	BEM	21 years
6	MOHAMAD KHIRUDIN AMDAN	Senior Lecturer	1.7.1997	Full time	Sarjana Muda Kejuruteraan Mekanikal serta Pendidikan, OUM'07 Sarjana Proses Keselamatan & Pencegahan Kehilangan (UPM-2015)	Dip Advance Welding - SLV Duisburg SIJIL KEMAHIRAN MALAYSIA TAHAP 1 - Jurukimpal Arka	DJJ50193	DJJ10232	SJK30244	DUW10042		YA	MEMBER TECH ASSOCIATION OF MALAYSIA, Professional Technologist MBOT (Malaysia Board Of Technologists)	28 years
7	WAN MAJDAH BINTI TON MAMAT	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'04	Penyelia Tapak Binaan (Kerja Mekanikal)(Tahap 4) Profesional Certificate in KNX Systems (Basic)	DJJ20073	DJJ50193	DJJ10232	MPU24031		YA	BEM, Majlis Rekabentuk Malaysia, Professional Technologist MBOT (Malaysia Board Of Technologists)	17 years
8	NURAZLINDA BINTI YAHYA @ MUHAMMED	Senior Lecturer	01.09.2003	Full time	Sarjana Pendidikan Teknik & Vokasional, KUiTTHO'2002 Sarjana Muda Pengurusan Teknologi (Pembuatan), UTM'2000	AUTODESK CERTIFIED PROFESSIONAL: Inventor AUTODESK CERTIFIED PROFESSIONAL: AutoCAD AUTODESK CERTIFIED PROFESSIONAL: AutoCAD 2010 SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	DJJ50193	DJJ10223	DJJ20282			YA	MBOT (Malaysia Board Of Technologist)	22 years
9	AHMAD FAKARUDDIN BIN MOHD FAUZI	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, UTM 2005 Sarjana Kejuruteraan (Sistem Pembuatan), UKM 2013 Diploma Pendidikan Lepasan Ijazah, UPSI 2009	Autodesk Certified User: Inventor SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	DJJ50193	DJJ30302	SJK30344	DJJ10223		YA	BEM, NUTP	17 years
10	NOORAZLAN BIN MOHD SAMSUDDIN	Senior Lecturer	01.11.1997	Full time	Sarjana Muda Kejuruteraan Mekanikal serta Pendidikan, OUM'07	SIJIL KEMAHIRAN MALAYSIA (Jurukimpal Arka Tahap 1 & Tahap 3)) WELDING MASTER (Manual Metal Arc Welding) (Germany) WELDING MASTER (Matel Active Gas Welding - Steel) (Germany)	DJJ10243	DJJ50193	MPU22012			YA	MEMBER TECH ASSOCIATION OF MALAYSIA, Professional Technologist MBOT (Malaysia Board Of Technologists)	28 years
11	ASRI BIN MAT DESA	Senior Lecturer	01.02.2000	Full time	Sarjana Pendidikan (Teknikal), UTM Sarjana Muda Sains Kejuruteraan Mekanikal (Pembuatan), UTM, Diploma Kejjuruteraan Mekanikal (Am) POLIMAS Sijil Kejuruteraan Mekanikal (Am) POLIMAS	International Cert. Sevices in Welding Inspection & NDT-CSWIP 3G Welder Certification (SMAW) Shielded Metal Arc Welding Process (Level 3)	DJJ30103	DJJ40182	DJJ10223			YA	BEM. MRM	25 years
12	ALIAS BIN OTHMAN	Senior Lecturer	20.01.2003	Full time	Sarjana Muda Kejuruteraan Mekanikal, University Of Salford, 1999	Approved welder, TWI	DJJ30323	DJJ40182	DJJ10232	DJJ30302		YA	BEM	22 years

13	Ts. TEOH THEAN HIN	Senior Lecturer	01.03.2007	Full time	Sarjana Muda Kejuruteraan Mekanikal dengan Kepujian, KUiTTHO 2005 Sarjana Pendidikan Teknik dan Vokasional, UTHM 2006	Microsoft Office Specialist PowerPoint 2013	DJJ30293	DJJ50193	DJJ30302	DJJ50212		YA	Graduate Member BEM Professional Technologist MBOT	18 years
14	ASMIRA BIN ASHARI	Lecturer	02.01.1999	Full time	Master Process Safety & Loss Prevention, UPM'2015 Sarjana Muda Pendidikan (Kejuruteraan Mekanikal) OUM'2007 Diploma Kej. Mekanikal (Loji) ITTHO 1996	IRCA UK (Lead Auditor OSHMS) No. 193967	DJJ50193	DJJ10232	DJJ20252	DUW10042	MPU24121	YA	Professional Technologist MBOT Reg Num : PT18050565. Malaysian Society Occupational Safety & Health - Membership Number 7470	26 years
15	DR. KHAIRULNIZAM BIN KASIM	Senior Lecturer	2/1/1999	Full time	PhD Mechanical Engineering, UiTM '2023		DJJ30293	DJJ50193	DJJ10232	SJK30254		YA	BEM	24 yrs
16	ZULKHAIRI BIN KHAIRUDIN	Senior Lecturer	01.07.1998	Full time	Sarjana Muda Pendidikan (Kejuruteraan Mekanik), OUM'06	SIJIL KEMAHIRAN MALAYSIA - Kimpalan Level 3	DJJ10243	DJJ50193	DJJ10232	DJJ50203		YA	BEM	25 years
17	DR. MAZYAN BINTI YAHAYA	Senior Lecturer	02.01.2002	Full time	PhD Mechanical Engineering, UiTM 2022	SKM - Pelukisan Pelan Mekanikal Level 3, SKM-Smart Home (modular), Profesional Certificate in KNX Systems (Basic/Advanced/Tutor), CIDB-SKKP Dye Penetrant Testing (PT) Level 2, CIDB-SKKP Magnetic Particle Testing (MT) Level 2, TWI-CSWIP 3.0 Visual Welding Inspector, CIDB Greencard, NIOSH- OGSP, NIOSH-AESP, Google Certified Educator Level 2(expired 2025)	DJJ40163	DJJ50193	DJJ10232			YA	BEM-Graduate Engineer, MPM2A-Member	23 years
18	MOHD FAUZI B DERANI	Senior Lecturer	07.09.2001	Full time	Sarjana Muda Kejuruteraan Elektrik serta Pendidikan, OUM'2009	KNX Basic, Intermediate, Advanced	DJJ20053	DJJ20263	DJJ40182	DJJ40142		YA	BEM - G1258583L, NUTP	24 years
19	MOHD NASIR BIN KAMARUDDIN	Senior Lecturer	04.08.2002	Full time	Sarjana Muda Kejuruteraan Mekanikal, Kuiitho 2002 Diploma Perguruan Malaysia, Maktab Teknik 2006	Autodesk Certified User: Inventor (competency) MASTERCAM Professional Certificate Basic Of Pneumatic SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 Profesional Certificate in KNX Systems (Basic) DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	DJJ50193	DJJ30302	SJK20324	DJJ10223		YA	BEM	23 years
20	ISHAK BIN HASSAN	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'04	memanah level 1, lesen c teknikal woodball, microsoft specialist (mos)-power point	DJJ30093	DJJ50193	DJJ10232	SJK10184	MPU24031	YA	BEM	17 years
21	MOHD HARIZ B SAMIAN	Senior Lecturer	01.04.2009	Full time	Sarjana Muda Kejuruteraan Pembuatan (Bahan Kejuruteraan), UTeM'08		DJJ10243	DJJ50193	DJJ10232	MPU24031		YA	BEM, Jurulatih berdaftar Persatuan badminton malaysia	16 years
22	SYAHRULAZMIN BIN SARMIN	Lecturer	01.02.2005	Full time	Sarjana Muda Kejuruteraan Mekanika(Bahan), Sarjana Pendidikan Teknik dan Vokasional	AUTODESK CERTIFIED PROFESSIONAL_Inventor 2015	DJJ30313	DJJ50193	DJJ10232	DJJ30332		YA	BEM	20 years
23	NURHIDAYA BT MUSA	Lecturer	01.09.2003	Full time	KUiTTHO'2003 Sijil Kejuruteraan Mekanikal, Politeknik PD 1999	Microsoft Office Specialist EXCEL 2019 Associate.	DJJ10232	DJJ20252	MPU22012	MPU24041		YA	1. (BEM) Board of Engineers Malaysia 2. (PSIMA)Persatuan Psikologi Malaysia	22 years
24	NORLIDAWATI BT MOHAMAD	Lecturer	01.04.2002	Full time	Diploma Kejuruteraan Mekanikal Serta Pendidikan, KUiTTHO'2001	SIJIL KEMAHIRAN MALAYSIA - fabrikasi logam Level 3 PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS,	DJJ10232	DJJ30302	DUW10042	MPU24041		YA	BEM, MBOT,NUTP	23 years
25	WAN NORHAZLIM BT WAN MUSTAFA	Lecturer	01.04.2008	Full time	Sarjana Pendidikan Teknik dan Vokasional Sarjana Muda Kejuruteraan Mekanikal , KUiTTHO'2000	SKM 3- FABRIKASI LOGAM, MINYAK & GAS (2023)PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS	DJJ30323	DJJ50193	DJJ10232	DJJ42032	DJJ50212	YA	NUTP, BEM	17 yeras

JABATAN SOKONGAN

1	NOOR HAYATI BINTI MAT TAIB	Senior Lecturer	16.01.2004	Full time	Sarjana Pendidikan Teknik & Vokasional, KUITTHO,2003 Sarjana Muda Kejuruteraan Bahan USM, 2001		DJJ40182	MPU24211				YA	BEM, NUTP	21 years

ANALYSIS OF ALL TEACHING STAFF (DKM)

Appendix C5-1b

ANALYSIS OF ALL TEACHING STAFF (DKM)

No	Name	Post Held	Date of First Appointment at the Fac/Sch/Dept.	Part or Full Time or from other Programmes	Academic Qualifications/ Field of Specialization/ Institution and Year of Award	Professional Qualifications	Membership in Professional Bodies	Years of Experience		Level of Activity (high, med, low, none)				
								Industrial	Teaching	High Professional Society (indicate society)	Medium Research	low Consulting (Industry)	none Publications	Administration
MECHANICAL ENGINEERING DEPARTMENT														
1	MUHAMMAD FAIZ B. ABDULLAH	Senior Lecturer	01.02.2004	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'03	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	BEM, Ahli Majlis Rekabentuk Malaysia	ROKUM INCKO ELEKTRONIK (M) SDN. BHD	19 years					
2	MOHD SHARIZAN B MOHD SHARIF	Senior Lecturer	01.04.2002	Full time	Sarjana Muda Kejuruteraan Mekanikal, UTM'2013	SIJIL KEMAHIRAN MALAYSIA - Mesin Level 3	BEM, Malaysian Nature Society (MNS)	INDSYS ENG. SDN. BHD	21 years					
3	DR. NORASIAH BINTI MUHAMMAD	Senior Lecturer	01.04.2004	Full time	SARJANA MUDA KEJURUTERAAN BAHAN. SARJANA SAINS KEJURUTERAAN BAHAN. DOKTOR FALSAFAH KEJURUTERAAN MEKANIKAL (UiTM SHAH ALAM)	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	BEM		19 years					
4	SHARIZA AZWIN BINTI YAHYA	Senior Lecturer	20.01.2003	Full time	Sarjana Muda Kejuruteraan (Mekanikal - Aeronautik), UTM'2000 Diploma Perguruan (KPLI)	SIJIL CIDB MALAYSIA - CONSTRUCTION SITE SUPERVISOR (MECHANICAL WORKS) (LEVEL 4) DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4 SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 AUTODESK CERTIFIED PROFESSIONAL_Inventor AUTODESK CERTIFIED PROFESSIONAL_Inventor 2015	BEM MAJLIS REKABENTUK MALAYSIA	Universiti Teknologi Malaysia PSC-Naval Dockyard	20 years					
5	ZETTY ROHAIZA BINTI MOHD SAHAK @ ISHAK	Senior Lecturer	01.04.2004	Full time	SARJANA FALSAFAH(MEKANIKAL) Sarjana Muda Kejuruteraan Mekanikal, UTM'2000	Profesional Certificate in System Integration (2021) (European International Universiti). PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS SKM 3- FABRIKASI LOGAM, MINYAK & GAS (2023)	BEM	NAZA KIA SDN BHD ,PUCHONG.	19 years					
6	MOHAMAD KHIRUDIN AMDAN	Senior Lecturer	1.7.1997	Full time	Sarjana Muda Kejuruteraan Mekanikal serta Pendidikan, OUM'07 Sarjana Proses Keselamatan & Pencegahan Kehilangan (UPM-2015)	Dip Advance Welding - SLV Duisburg SIJIL KEMAHIRAN MALAYSIA TAHAP 1 - Jurukimpal Arka	MEMBER TECH ASSOCIATION OF MALAYSIA, Professional Technologist MBOT (Malaysia Board Of Technologists)	MITSUI HIGH TECH SDN. BHD	26 years					
7	WAN MAJDAH BINTI TON MAMAT	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'04	Penyelia Tapak Binaan (Kerja Mekanikal)(Tahap 4) Profesional Certificate in KNX Systems (Basic)	BEM, Majlis Rekabentuk Malaysia, Professional Technologist MBOT (Malaysia Board Of Technologists)	PANASONIC APPLIANCES (M) SDN. BHD.	15 years					
8	NURAZLINDA BINTI YAHYA @ MUHAMMED	Senior Lecturer	01.09.2003	Full time	Sarjana Pendidikan Teknik & Vokasional, KUiTTHO'2002 Sarjana Muda Pengurusan Teknologi (Pembuatan), UTM'2000	AUTODESK CERTIFIED PROFESSIONAL: Inventor AUTODESK CERTIFIED PROFESSIONAL: AutoCAD AUTODESK CERTIFIED PROFESSIONAL: AutoCAD 2010 SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	MBOT (Malaysia Board Of Technologist)	NAZA KIA SDN BHD KEMENTERIAN KERJA RAYA HING TAI (2020) SDN BHD	20 years					
9	AHMAD FAKARUDDIN BIN MOHD FAUZI	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, UTM 2005 Sarjana Kejuruteraan (Sistem Pembuatan), UKM 2013 Diploma Pendidikan Lepasan Ijazah, UPSI 2009	Autodesk Certified User: Inventor SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4	BEM, NUTP	MEDIA-TEK DIGITAL SERVICES SDN. BHD.	15 years					
10	NOORAZLAN BIN MOHD SAMSUDDIN	Senior Lecturer	01.11.1997	Full time	Sarjana Muda Kejuruteraan Mekanikal serta Pendidikan, OUM'07	SIJIL KEMAHIRAN MALAYSIA (Jurukimpal Arka Tahap 1 & Tahap 3)) WELDING MASTER (Manual Metal Arc Welding) (Germany) WELDING MASTER (Matel Active Gas Welding - Steel) (Germany)	MEMBER TECH ASSOCIATION OF MALAYSIA, Professional Technologist MBOT (Malaysia Board Of Technologists)	MAH SING PLASTICS INDUSTRIES SDN. BHD	26 years					
11	ASRI BIN MAT DESA	Senior Lecturer	01.02.2000	Full time	Sarjana Pendidikan (Teknikal), UTM Sarjana Muda Sains Kejuruteraan Mekanikal (Pembuatan), UTM, Diploma Kejjuruteraan Mekanikal (Am) POLIMAS Sijil Kejuruteraan Mekanikal (Am) POLIMAS	International Cert. Sevices in Welding Inspection & NDT-CSWIP 3G Welder Certification (SMAW) Shielded Metal Arc Welding Process (Level 3)	BEM. MRM	Johnson & Johnson National Cience Centre	24 years					
12	ALIAS BIN OTHMAN	Senior Lecturer	20.01.2003	Full time	Sarjana Muda Kejuruteraan Mekanikal, University Of Salford, 1999	Approved welder, TWI	BEM		21 years					
13	Ts. TEOH THEAN HIN	Senior Lecturer	01.03.2007	Full time	Sarjana Muda Kejuruteraan Mekanikal dengan Kepujian, KUiTTHO 2005 Sarjana Pendidikan Teknik dan Vokasional, UTHM 2006	Microsoft Office Specialist PowerPoint 2013	Graduate Member BEM Professional Technologist MBOT		18 years					
14	ASMIRA BIN ASHARI	Lecturer	02.01.1999	Full time	Master Process Safety & Loss Prevention, UPM'2015 Sarjana Muda Pendidikan (Kejuruteraan Mekanikal) OUM'2007 Diploma Kej. Mekanikal (Loji) ITTHO 1996	IRCA UK (Lead Auditor OSHMS) No. 193967	Professional Technologist MBOT Reg Num : PT18050565. Malaysian Society Occupational Safety & Health - Membership Number 7470	Matshushita Electronic (M) Motor - Technician 1995/1996	24 years					

15	DR. KHAIRULNIZAM BIN KASIM	Senior Lecturer	2/1/1999	Full time	PhD Mechanical Engineering, UiTM '2023			Sony Penang	24 yrs						
16	ZULKHAIRI BIN KHAIRUDIN	Senior Lecturer	01.07.1998	Full time	Sarjana Muda Pendidikan (Kejuruteraan Mekanik), OUM'06	SIJIL KEMAHIRAN MALAYSIA - Kimpalan Level 3			25 years						
17	DR. MAZYAN BINTI YAHAYA	Senior Lecturer	02.01.2002	Full time	PhD Mechanical Engineering, UiTM 2022	SKM - Pelukisan Pelan Mekanikal Level 3, SKM-Smart Home (modular), Profesional Certificate in KNX Systems (Basic/Advanced/Tutor), CIDB-SKKP Dye Penetrant Testing (PT) Level 2, CIDB-SKKP Magnetic Particle Testing (MT) Level 2, TWI-CSWIP 3.0 Visual Welding Inspector, CIDB Greencard, NIOSH- OGSP, NIOSH-AESP, Google Certified Educator Level 2(expired 2025)	BEM-Graduate Engineer, MPM2A-Member	none	19 years						
18	MOHD FAUZI B DERANI	Senior Lecturer	07.09.2001	Full time	Sarjana Muda Kejuruteraan Elektrik serta Pendidikan, OUM'2009	KNX Basic, Intermediate, Advanced	BEM - G1258583L, NUTP	KOSIJAYA DIDACTIC	22 years						
19	MOHD NASIR BIN KAMARUDDIN	Senior Lecturer	04.08.2002	Full time	Sarjana Muda Kejuruteraan Mekanikal, Kuiitho 2002 Diploma Perguruan Malaysia, Maktab Teknik 2006	Autodesk Certified User: Inventor (competency) MASTERCAM Professional Certificate Basic Of Pneumatic SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3 Profesional Certificate in KNX Systems (Basic) DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4		ICHOR SYSTEMS	22 years						
20	ISHAK BIN HASSAN	Senior Lecturer	02.01.2008	Full time	Sarjana Muda Kejuruteraan Mekanikal, KUiTTHO'04	memanah level 1, lesen c teknikal woodball, microsoft specialist (mos)-power point	BEM		15 years						
21	MOHD HARIZ B SAMIAN	Senior Lecturer	01.04.2009	Full time	Sarjana Muda Kejuruteraan Pembuatan (Bahan Kejuruteraan), UTeM'08		BEM, Jurulatih berdaftar Persatuan badminton malaysia	Delfi Cocoa Malaysia, Celcom Malaysia Berhad, Kinetic Chemicals Malaysia Sdn Bhd	14 years						
22	SYAHRULAZMIN BIN SARMIN	Lecturer	01.02.2005	Full time	Sarjana Muda Kejuruteraan Mekanika(Bahan), Sarjana Pendidikan Teknik dan Vokasional	AUTODESK CERTIFIED PROFESSIONAL_Inventor 2015	BEM		16 years						
23	NURHIDAYA BT MUSA	Lecturer	01.09.2003	Full time	Diploma Kejuruteraan Mekanikal (CNC), KUiTTHO'2003 Sijil Kejuruteraan Mekanikal, Politeknik PD 1999	Microsoft Office Specialist EXCEL 2019 Associate.	1. (BEM) Board of Engineers Malaysia 2. (PSIMA)Persatuan Psikologi Malaysia 3. (MEPS)Malaysia Educational Psychology Society	NZ WHEELS SDN BHD STMicroelectronics Sdn. Bhd	21 years						
24	NORLIDAWATI BT MOHAMAD	Lecturer	01.04.2002	Full time	Diploma Kejuruteraan Mekanikal Serta Pendidikan, KUiTTHO'2001	SIJIL KEMAHIRAN MALAYSIA - fabrikasi logam Level 3 PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS,	BEM, MBOT,NUTP		22 years						
25	WAN NORHAZLIM BT WAN MUSTAFA	Lecturer	01.04.2008	Full time	Sarjana Pendidikan Teknik dan Vokasional Sarjana Muda Kejuruteraan Mekanikal , KUiTTHO'2000	SKM 3- FABRIKASI LOGAM, MINYAK & GAS (2023)PROFESSIONAL CERT - BASIC OF PNEUMATIC/ ELECTRO-PNEUMATICS	NUTP, BEM		15 yeras						

JABATAN SOKONGAN

1	NOOR HAYATI BINTI MAT TAIB	Senior Lecturer	16.01.2004	Full time	Sarjana Pendidikan Teknik & Vokasional, KUITTHO,2003 Sarjana Muda Kejuruteraan Bahan USM, 2001		BEM, NUTP		21 years						

Appendix C5-1c

Industry Certification/Competency/Professional Certificate

No	Name	Program	Professional Qualifications
1	MUHAMMAD FAIZ B. ABDULLAH	DKM	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3
2	MOHD SHARIZAN B MOHD SHARIF	DKM	SIJIL KEMAHIRAN MALAYSIA - Mesin Level 3
3	DR. NORASIAH BINTI MUHAMMAD	DKM	SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3
4	SHARIZA AZWIN BINTI YAHYA	DKM	SIJIL CIDB MALAYSIA - CONSTRUCTION SITE SUPERVISOR (MECHANICAL WORKS) (LEVEL 4)
5	ZETTY ROHAIZA BINTI MOHD SAHAK @ ISHAK	DKM	Profesional Certificate in System Integration (2021) (European International Universiti).
6	MOHAMAD KHIRUDIN AMDAN	DKM	Dip Advance Welding - SLV Duisburg SIJIL KEMAHIRAN MALAYSIA TAHAP 1 - Jurukimpal Arka
7	WAN MAJDAH BINTI TON MAMAT	DKM	Penyelia Tapak Binaan (Kerja Mekanikal)(Tahap 4) Profesional Certificate in KNX Systems (Basic)
8	NURAZLINDA BINTI YAHYA @ MUHAMMED	DKM	AUTODESK CERTIFIED PROFESSIONAL: Inventor
9	AHMAD FAKARUDDIN BIN MOHD FAUZI	DKM	Autodesk Certified User: Inventor
10	NOORAZLAN BIN MOHD SAMSUDDIN	DKM	SIJIL KEMAHIRAN MALAYSIA (Jurukimpal Arka Tahap 1 & Tahap 3)) WELDING MASTER (Manual Metal Arc Welding) (Germany) WELDING MASTER (Matel Active Gas Welding - Steel) (Germany)
11	ASRI BIN MAT DESA	DKM	International Cert. Sevices in Welding Inspection & NDT-CSWIP 3G Welder Certification (SMAW) Shielded Metal Arc Welding Process (Level 3)
12	ALIAS BIN OTHMAN	DKM	Approved welder, TWI
13	TEOH THEAN HIN	DKM	Microsoft Office Specialist PowerPoint 2013
14	ASMIRA BIN ASHARI	DKM	IRCA UK (Lead Auditor OSHMS) No. 193967
15	DR. KHAIRULNIZAM BIN KASIM	DKM	nan
16	ZULKHAIRI BIN KHAIRUDIN	DKM	SIJIL KEMAHIRAN MALAYSIA - Kimpalan Level 3
17	DR. MAZYAN BINTI YAHAYA	DKM	SKM - Pelukisan Pelan Mekanikal Level 3, SKM-Smart Home (modular), Profesional Certificate in KNX Systems (Basic/Advanced/Tutor), CIDB-SKKP Dye Penetrant Testing (PT) Level 2, CIDB-SKKP Magnetic Particle Testing (MT) Level 2, TWI-CSWIP 3.0 Visual Welding Inspector, CIDB Greencard, NIOSH-OGSP, NIOSH-AESP, Google Certified Educator Level 2(expired 2025)
18	MOHD NASIR BIN KAMARUDDIN	DKM	Autodesk Certified User: Inventor (competency)
19	SYAHRULAZMIN BIN SARMIN	DKM	AUTODESK CERTIFIED PROFESSIONAL_Inventor 2015
20	NURHIDAYA BT MUSA	DKM	Microsoft Office Specialist EXCEL 2019 Associate.
21	TS. DR. MOHD ELIAS BIN DAUD	DMP	- Sijil Profesional Basic of Pneumatics / Electro Pneumatics (2023). -SIJIL KEMAHIRAN MALAYSIA (AUTOMASI INDUSTRI Level 3) - Certified KNX Partner (Basic, Advanced, Tutor) , International certification (2023) - Profesional Certificate in System Integration (2021) (European International Universiti).
22	SOM CHAI A/L ENOI	DMP	Sijil Profesional Basic of Pneumatics / Electro -pneumatics (2023), Professional Technologist (2022)
23	NOOR HAZNIDA BINTI BAKAR	DMP	Microsoft Office Specialist EXCEL 2019 Associate.
24	ISNURAINI BINTI KASSIM	DMP	SIJIL KEMAHIRAN MALAYSIA - Pemesinan Level 3

25	BRYAN HEE TZEE KEON	DMP	Sijil Autodesk Inventor Certified Professional (2010, 2012, 2016) & Sijil Autodesk AutoCAD Certified Profesional (2000,2004,2005,2007,2010, 2011, 2012), SIJIL KEMAHIRAN MALAYSIA - Pelukisan Pelan Mekanikal Level 3, DIPLOMA KEMAHIRAN MALAYSIA - Pengajaran TVET Level 4

26	NGAI CHOOI HOONG	DMP	nan
27	NUR FARAHAIZAN BT IDRIS	DMP	SIJIL PROFESIONAL BASIC OF PNEUMATICS / ELECTRO - PNEUMATICS
28	NORSAAIDAH BT SAAID	DMP	nan
29	SKH MUHAMMAD	DMP	Sijil Kemahiran Malaysia: Operasi Pemesinan Tahap 3, Professional Certificate Basic Of Pneumatic, Microsoft Office Specialist EXCEL 2019 Associate.
30	MOHD ZULKARNAEN BIN MOHD IBRAHIM	DMP	nan
31	ROSLAN BIN KAMARUDIN	DMP	Basic Occupational First Aid, SIJIL CIDB MALAYSIA - CONSTRUCTION SITE SUPERVISOR (MECHANICAL WORKS) (LEVEL 4)

BIL	NAMA PENSYARAH		KURSUS PROGRAM DKM														JUMLAH JAM MENGAJAR
			KURSUS 1 (P/AKHIR)	JAM1	KURSUS 2 (PROJEK)	JAM2	KURSUS 3 (BENGKEL)	JAM3	KURSUS 4 (BENGKEL)	JAM4	KURSUS 5 (BENGKEL)	JAM5	KURSUS 6 (xPA)	JAM6	KURSUS 7 (KOKO)	JAM7	ASSIST	
1	AHMAD FAKARUDDIN BIN MOHD FAUZI	FKR			DJJ50193	4	DJJ30302	8	SJK30344	7			DJJ10223	4				23
2	ALIAS BIN OTHMAN	ALO	DJJ30323	4	DJJ40182	2	DJJ10232	4	DJJ30302	8								18
3	ASMIRA BIN ASHARI	AMA			DJJ50193	4	DJJ10232	4	DJJ20252	4			DUW10042	2	MPU24121	2		16
4	ASRI BIN MAT DESA	AMD	DJJ30103	4	DJJ40182	2							DJJ10223	12				18
5	ISHAK BIN HASSAN	ISH	DJJ30093	4	DJJ50193	4	DJJ10232	4	SJK10184	8					MPU24031	2		22
6	KHAIRULNIZAM BIN KASIM	KNZ	DJJ30293	4	DJJ50193	4	DJJ10232	4	SJK30254	8								20
7	MAZYAN BINTI YAHAYA	MZY	DJJ40163	4	DJJ50193	4	DJJ10232	4									4	12
8	MOHAMAD KHIRUDDIN BIN AMDAN	MKA			DJJ50193	4	DJJ10232	4	SJK30244	8			DUW10042	2				18
9	MOHD FAUZI BIN DERANI	FAD	DJJ20053 DJJ20263	8	DJJ40182	2	DJJ40142	4							MPU24031	2		16
10	MOHD HARIZ BIN SAMIAN	HRZ	DJJ10243	3	DJJ50193	4	DJJ10232	8							MPU24031	2		17
11	MOHD NASIR BIN KAMARUDDIN	NSR			DJJ50193	4	DJJ30302	8	SJK20324	7			DJJ10223	4				23
12	MOHD SHARIZAN BIN MOHD SHARIF	SMS			DJJ50193	4	DJJ30302	4	DJJ40142	4								12
13	MUHAMMAD FAIZ BIN ABDULLAH	MFZ			DJJ50193	4			SJK20324	7								11
14	NOORAZLAN BIN MOHD SAMSUDDIN	AZL	DJJ10243	6	DJJ50193	4							MPU22012	6			2	16
15	NORASIAH BINTI MUHAMMAD	AC	DJJ30293	4	DJJ50193	4	DJJ10232	8									2	16
16	NORLIDAWATI BINTI MOHAMAD	LID					DJJ10232	4	DJJ30302	8			DUW10042	6	MPU24041	2		20
17	NURAZLINDA BINTI YAHYA	LIN			DJJ50193	4					DJJ10223	12	DJJ20282	3				19
18	NURHIDAYA BINTI MUSA	HID					DJJ10232	4	DJJ20252	4			MPU22012	9	MPU24041	2		19
19	SHARIZA AZWIN BINTI YAHYA	SAY	DJJ30323	4			DJJ20252	4	DJJ40142	4			DJJ20282	3			2	15
20	SYAHRULAZMIN BIN SARMIN	SAZ	DJJ30313	4	DJJ50193	4	DJJ10232	4					DJJ30332	4			2	16
21	TEOH THEAN HIN	TTH	DJJ30293	4	DJJ50193	4	DJJ30302	4					DJJ50212	4			2	16
22	WAN MAJDAH BINTI TON MAMAT	WMJ	DJJ20073	8	DJJ50193	4	DJJ10232	4							MPU24031	2		18
23	WAN NORHAZLIM BINTI WAN MUSTAFA	WNH	DJJ30323	4	DJJ50193	4	DJJ10232	4			DJJ42032	4	DJJ50212	2				18
24	ZETTY ROHAIZA BINTI MOHD SAHAK @ ISHAK	ZET	DJJ30313	4	DJJ50193	4	DJJ10232	4	DJJ30302	4							2	16
25	ZULKHAIRI BIN KHAIRUDIN	ZKI	DJJ10243	6	DJJ50193	4	DJJ10232	4					DJJ50203	4				18

Summary of Staff Involvement in Research /Publication /Presentation

No	Staff member (Name)	Achievement/Involvement		
		Research/Collaboratio	Publication	Presentation/Exhibition
1	MOHAMAD KHIRUDIN BIN AMDAN		1. MIRD 2024, Engieering and Economic Feasibility of Portable EggmBreaker and Yolk Separator Machines for Small-Scale Food Processing.	1. MICE 2024, Lazy Desk.
2	DR. NORASIAH BINTI MUHAMMAD	1. Correlation Between Mechanical Properties, Fatigue Strength and Grain Morphology of Austenitic Stainless Steel (SS316) Produced by Wire Arc Additive Manufacturing (WAAM), 2023	1. 1st International Conference on Robotics, Engineering, Science, and Technology (RESTCON 2024), Development and Analysis of an Optimized Heat Source Model for Wire Arc Additive Manufacturing Using Numerical Simulation	1. Malaysia Technology Expo (MTE 2023)-Gold, Smart Grocery Cart.
		2. Geran TVET T-ARGS 2025, Solar Drain System	2. MATERIALS SCIENCE AND ENGINEERING POLYTECHNIC SERIES, 2023, Penerbit Ehsan, W.P Kuala Lumpur. 162 pages, ISBN: 9789670032627	2. International Borneo Innovation Exhibition and Competition 2023 (IBIEC 2023), Advanced Corroded Pipe Stuctural Integrity System - Silver and Smart Grocery Cart-Silver
			3. Mechanical Innovation, Research and Development (MIRD2024), Unit Penerbitan Politeknik Sultan Salahuddin Abdul Aziz Shah, eISBN: 978-629-7667-11-9,123 pages.	3. VII ASC Spring Congress 2024, DEVELOPMENT OF THE DRAIN CLEANER TECHNOLOGY
			4. MIRD 2024, Development of the Smart Grocery Cart.	4.International Virtual Innovation Competition, PORTABLE DRAIN CLEANER TECHNOLOGY WITH IOT SYSTEM
				5. PITEC 7 (2024), Automated Solar Drain Cleaning System (ASDCS).
3	SHARIZA AZWIN BINTI YAHYA		1. MIRD 2024, Development and Evaluation of a Biometric Fingerprint Locker System with IoT Intergration for Enhanced Security and Management.	
4	ZETTY ROHAIZA BINTI MOHD SAHAK @ ISHAK	1. Geran Program University-Community Social Enterprise (Ucse) Dan University Social Enterprise Competition (Usec) Kementerian Pendidikan Tinggi 2024, Ez Pot	1. INNOPLEN 2023 eProceeding, Enhancing Precision and Practicality: Mobile CNC Plasma Machines for Streamlined Cutting Processes and Technological Education, page 118-120.	1. Icompex 2023, 3rd Eye for Blind-Gold, Mobile CNC Plasma-Gold and EZ Pot-Gold.
		2. Geran Pembangunan Produk Inovasi MOSTI MyGRIs 2023 , Kekabu Pro Machine	2. INNOPLEN 2023 eProceeding, Third Eye X: Obstacle Detection and Notification for The Blind and Visually Impaired, page 142-144.	2. Karnival Inovasi Sosial (KIIS 2023), Third Eye for Blind-Gold, Mobile CNC Plasma-Gold and EZ Pot- Gold
		3. Geran TVET T-ACGS 2025, EZ Cookware	3.National Polycc Technology Transfer Conference 2024 Peringkat Kebangsaan	3. Innovation Product Launching and Entrepreneuership Competition (INNOPLEN 2023), Enhancing Precision and Practicality: Mobile CNC Plasma Machines for Streamlined Cutting Processes and Technological Education-Silver
		4. Juri Karnival Kebolehpasaran Murid Berkeperluan Pendidikan Khas Negeri Selangor Tahun 2025	4. MIRD 2024, Development of the Smart Window System	4. Innovation Product Launching and Entrepreneuership Competition (INNOPLEN 2023), Third Eye X: Obstacle Detection and Notification for The Blind and Visually Impaired - Gold and Lemang EZ Pot: Pendekatan Inovatif untuk mengekalkan Keaslian Rasa melalui Reka Bentuk yang Diperbaharui - Gold
				5. Anugerah Inovasi Negeri Selangor (AINS 2024), Daerah Kuala Selangor dan Shah Alam.
				6. Pameran Majlis Peluncuran Malaysia Artificial Intelligence Nexus 2024.
				7. Program Showcase POLYCC JPPKK 2024.
				8. Pameran Sambutan Hari Intelek Negara 2024

				9. International Conference on Engineering, Technology & Social Science (ICETSS 2024), EMPOWERING SAFETY : INNOVATIONS IN DISABILITY-SPECIFIC SAFETY SYSTEMS
				10. PERISA 2024-Gold
				11. Virtual Innovation Competition (VIC 2025), EZ Problade-Gold and Elevator X-Gold.
				12. Icompex 2025, Next-Generation Hydraulic Footjack for People with Disabilities - Silver
5	ASRI BIN MAT DESA	1. Geran TVET T-AIGS 2025, Next-Generation Hydraulic FootJack for People with Disabilities.		1. Virtual Innovation Competition (VIC 2025), Next- Generation Hydraulic Footjack for People with Disabilities -Gold
				2. Icompex 2025, Next-Generation Hydraulic Footjack for People with Disabilities - Silver
				3. Indonesia Inventors Day 2025 (IID2025), Next- Generation Hydraulic Footjack for People with Disabilities-Silver dan Special Awards.
6	NURAZLINDA BINTI YAHYA@MUHAMMED		1. MIRD 2024, A Design of Study Portable Involving the Internet of Think.	1. MICE 2024, Semi-auto Coconut Grinding and Trolley Lifter Punching Bag.
7	WAN MAJDAH BINTI TON MAMAT		1. INNOPLEN 2023 eProceeding, Advanced Ladder, page 511-513	1. Innovation Product Launching and Entrepreneuership Competition (INNOPLEN 2023), Advanced Ladder-Bronze
				2. Pertandingan Inovasi dan TVET 2023 anjuran Kolej Vokasional Miri, Sarawak.
				3. International Conference on Engineering, Technology & Social Science (ICETSS 2024) EMPOWERING SAFETY : INNOVATIONS IN DISABILITY-SPECIFIC SAFETY SYSTEMS
				4. PITEC 7 (2024), Development of a Solar-Powered Automatic Irrigation System.
8	TEOH THEAN HIN	1. Geran TVET T-AIGS 2025, Next-Generation Hydraulic FootJack for People with Disabilities.		1. Virtual Innovation Competition (VIC 2025), Next- Generation Hydraulic Footjack for People with Disabilities -Gold
				2. Icompex 2025, Next-Generation Hydraulic Footjack for People with Disabilities - Silver
				3. Indonesia Inventors Day 2025 (IID2025), Next-Generation Hydraulic Footjack for People with Disabilities-Silver dan Special Awards.
9	ASMIRA BIN ASHARI			1. PITEC 7(2024) and MICE 2024, Rice Washer.
				2. MICE 2024, Egg Lanudry.
10	DR. KHAIRULNIZAM BIN KASIM	1. Geran TVET T-ARGS 2025, Solar Drain System	1. Mechanical Innovation, Research and Development (MIRD2024), Unit Penerbitan Politeknik Sultan Salahuddin Abdul Aziz Shah, eISBN: 978-629-7667-11-9,123 pages.	1. PITEC 7 (2024), Automatic Scarecrow.
		2. (2025) Research Collaboration with Politeknik Caltex Riau (PCR) and UiTM Shah Alam on Evaluation of Battery Performance and Casing Durability of a LoRa-Based GPS Collar for Elephant Tracking.	2. MIRD 2024, Innovative Design and Functional Integration of a Multi-Purpose Physiotherapy Wheelchair.	
11	AHMAD FAKARUDDIN BIN MOHD FAUZI	1. Geran TVET T-ACGS 2025, EZ Cookware	1. MIRD 2024, Design and Implementation of a Pneumatic Can Crusher for Efficient Waste Management	1. PITEC 4(2023) and MICE 2023-Gold, Alternator Test Bench.
				2. MICE 2023, Pneumatic Can Crusher-Bronze
12	ZULKHAIRI BIN KHAIRUDDIN			1. Mechanical Innovation Challenge and Exhibition (MICE 2023), Smart Lightboard.
				2. PITEC 4 (2023) and MICE 2023-Silver, Foldable Motorized Multi Grill.
			1. Asas Permainan Woodball, 2023, Unit Penerbitan Politeknik Sultan Salahuddin Abdul Aziz Shah, eISBN: 9789670032603,69 pages.	1. PITEC 4(2023) and MICE 2023-Silver, Air Portable Dryer.

13	MOHD FAUZI BIN DERANI		2. MIRD 2024, Rehabilitation Chair	2. International Virtual Innovation Competition REHABILITATION CHAIR
				3. Virtual Innovation Competition (VIC 2025), Hot Drop -Bronze
14	MOHD NASIR BIN KAMARUDDIN		1. MIRD 2024, Development of Siol Moisture Sensor	
15	MUHAMMAD FAIZ BIN ABDULLAH	1. Geran TVET T-AIGS 2025, Next-Generation Hydraulic FootJack for People with Disabilities.	1. Mechanical Innovation, Research and Development (MIRD2024), Unit Penerbitan Politeknik Sultan Salahuddin Abdul Aziz Shah, eISBN: 978-629-7667-11-9,123 pages.	
		2. (2025) Research Collaboration with Politeknik Caltex Riau (PCR) and UiTM Shah Alam on Evaluation of Battery Performance and Casing Durability of a LoRa-Based GPS Collar for Elephant Tracking.		
16	MOHD SHARIZAN BIN MOHD SHARIF	1. Geran TVET T-ARGS 2025, Solar Drain System	1. MIRD 2024, Automatic Sand Sieving Machines	1. PITEC 4 (2023)-Gold and MICE 2023-Gold, Soil PH Monitoring System.
				2. PITEC 4(2023)-Gold and MICE 2023-Silver, Development of Automatic Sand Sieving Machine.
				3. PITEC 7(2024), Extendable Flood Barrier Door.
17	ISHAK BIN HASAN			1. PITEC 4 (2023) and MICE 2023-Gold, Arc Welding Machine Simulator.
				2. PITEC 4 (2023)-Gold and MICE 2023-Silver, Cloth Hanging Warmers.
18	MOHD HARIZ BIN SAMIAN			1. MICE 2024, Sanibed and Motorcycle Blind Spot Indicator.
19	WAN NORHAZLIM BT WAN MUSTAFA	1. Geran TVET T-ACGS 2025, EZ Cookware	1. MIRD 2024, Development of the Smart Window System	1. MICE 2024, Smart Window and Bicycle Kit Generator.
20	DR. MAZYAN BINTI YAHAYA	1. Geran TVET T-AIGS 2025, Next-Generation Hydraulic FootJack for People with Disabilities.		1. Virtual Innovation Competition (VIC 2025), Elevator X-Gold
		2. Juri Karnival Kebolehpasaran Murid Berkeperluan Pendidikan Khas Negeri Selangor Tahun 2025		2. 7th International Conference on Chemistry and Material Sciences (IC2MS 2025), Mechanical Properties of Butt Joint using Friction Stir Welding for Aluminum Alloy Plates (AA6061).
				3. Icompex 2025, Next-Generation Hydraulic Footjack for People with Disabilities - Silver
				4. Indonesia Inventors Day 2025 (IID2025), Next- Generation Hydraulic Footjack for People with Disabilities-Silver dan Special Awards.
21	NORLIDAWATI BINTI MOHAMAD		1. MIRD 2024, Development of the Smart Window System	
22	NURHIDAYA BINTI MUSA		1. MIRD 2024, Development of Smart Green Watering System.	

Appendix C5-2c

Bil	Nama	Industri	Aktiviti
1	Ts. Norsham Bin Ismail	Ideas Cad Technology Sdn. Bhd.	Panel Penilai PITEX
2	Ts. Muhammad Faqrul Reduan	HICOM Diecastings Sdn. Bhd.	Projek Pelajar bersama Industri
3	En. Mohd Fadhil bin Aziz	Panasonic Appliances Air Conditioning Malaysia Sdn Bhd	Program lawatan dan Latihan Penyaman Udara
4	Dr Izhar Abd Aziz	3d Gens Sdn. Bhd.	Lawatan Industri
5	Mohd Hisham Bin Abdul Mutalib	Penang Skill Development Center (PSDC)	Lawatan Industri
6	Romzi Hassan Husin	Ktechno SDN BHD	Lawatan Industri

PERANCANGAN DAN PELAKSANAAN AKTIVITI KOLABORASI TAHUN 2024

(DKM)

BIL	NAMA PROGRAM	INDUSTRI/ INSTITUSI/ORGANISASI	TARIKH
1.	Lawatan Dan Perbincangan Kerjasama Bersama Universiti Of Indonesia (UI)	• Universiti Of Indonesia (UI)	23-25 Januari 2024
2.	"Sustainability in Engineering : Combining Technological Innovation with Social and Environmental Responsibility'' **(Pelajar)** "Exploring Opportunities for Collaboration in Technical and Vocational Education and Training (TVET) to Address Industrial Needs". **(Pensyarah)**	• UEM Edgenta Berhad	28 Februari 2024
3.	Program Bersama Ceo@Polycc (Sukan Bersama Industri)	• Panasonic Appliances Air-Conditioning Malaysia Sdn. Bhd. (PAPAMY)	11 September 2024
3.	Lawatan Industri – Metal 3D Printer	• 3D Gens Sdn Bhd	2 Oktober 2024
4.	Seminar Dan Perkongsian Pengalaman, Proses Keselamatan	• Petronas Global Technical Solutions Sdn. Bhd.	9 Oktober 2024
5.	Program Mobiliti Pelajar, Pengukuhan Kerjasama, Dan Khidmat Masyarakat	• Politeknik Caltex Riau (PCR)	16-18 Disember 2024

PERANCANGAN DAN PELAKSANAAN AKTIVITI KOLABORASI TAHUN 2025

(DKM)

BIL	NAMA PROGRAM	INDUSTRI/ INSTITUSI/ORGANISASI	TARIKH
1.	Pelaksanaan Program Sinergi Pendidikan Tinggi: Pemantapan Program dan Akreditasi melalui Kolaborasi • Lawatan Penandaarasan ke IKM Jitra • Sesi Perkongsian Ilmu dan Kepakaran Bersama UNIMAP • Lawatan dan Perbincangan Bersama Lumat Naval Shipyard Sdn. Bhd. (LUNAS) • Perkongsian Bahasa Isyarat Perlancongan kepada pelajar KK Langkawi	• IKM Jitra • UNIMAP • Lumat Naval Shipyard Sdn. Bhd. (LUNAS) • KK Langkawi	23-26 Februari 2025
2.	Program Lawatan Akademik Dan Pengantarabangsaan Program Dkm "Towards Global Technical Excellence @Japan 2025	• Toyota Japan • Manufacturing World 2025, Port Messe, Nagoya • Yamanashi Prefectual Maglev Exhibition • The University of Tokyo • CSR - FujiKawaguchiko Masjid & Community Centre	8-14 April 2025
3.	Seminar Pembungkusan & Perkongsian Ilmu: Proses Pembuatan Dan Reka Bentuk Paper Canister	• Can Jaya Sdn. Bhd.	11 April 2025
4.	Lawatan Eksplorasi Industri & Pemerkasaan TVET 2025, Jabatan Kejuruteraan Mekanikal (JKM)	• Unikl MS, Kulim • Kulim Hitech • Each Pack Machineary sdn. Bhd • PSDC Bayan lepas	9-11 Julai 2025

5.	Industrial Talk: CEO@PolyCC: “Brands Yourself”	Panasonic Appliances Air-Conditioning Malaysia Sdn. Bhd. (PAPAMY)	1 Oktober 2025
6.	Coolcare: Latihan Penyelenggaraan Penghawa Dingin	Panasonic Appliances Air-Conditioning Malaysia Sdn. Bhd. (PAPAMY)	10 september 2025
7.	Lawatan Program DKM	SMC AUTOMATION (MALAYSIA) SDN BHD	9-12 september 2025
8.	Lawatan Teknologi & Operasi: Trichy Flour Mill	Syarikat Trichy Flour Mill (M) Sdn. Bhd.	2 Oktober 2025
9.	Lawatan	Konecranes Material Handling (Malaysia) Sdn Bhd	14 Oktober 2025
10.	Program Transformasi Pendidikan Teknikal : Menggerakkan Inklusiviti, Merevolusi Pendidikan Kejuruteraan untuk Masa Depan Global ke Korea Selatan	• Kedutaan Malaysia di Seoul. • Korea Polytechnic, Seoul, Korea • Seoul National University of Science & Technology (SeoulTech) • Lawatan ke Samsung Electronics Digital Innovation Centre • Korean Sign Language Institute • Hyundai MOTORS • Korean Federation of the Deaf	28 Oktober 2025- 2 November 2025

Appendix C5-5a

Professional Certified

Nama Peserta	Tajuk Kursus / Program	Tarikh	Tempat / Anjuran	Dikeluarkan Oleh / Penganjur	Kategori
Ahmad Fakaruddin Bin Mohd Fauzi	Fast Evaluation and User-Friendly Using Scanning Electron Microscope (Thermo Fisher Phenom Pure)	22–23/10/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Ahmad Fakaruddin Bin Mohd Fauzi	Advanced Ultrasonic Flaw Detector: Sonatest	04–05/11/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Ahmad Fakaruddin Bin Mohd Fauzi	Creaform HandySCAN Silver Scanning Essential Training	03–04/10/2024	Digital Manufacturing Solutions	Digital Manufacturing Solutions	Profesional / Teknikal
Alias Bin Othman	Ultrasonic Flaw Detector Training	15-16 Aug 2024	CIAST	CIAST	Profesional / Teknikal
Alias Bin Othman	Creaform HandySCAN Silver Scanning Essential Training	03–04/10/2024	Digital Manufacturing Solutions	Digital Manufacturing Solutions	Profesional / Teknikal
Asri Bin Mat Desa	Creaform HandySCAN Silver Scanning Essential Training	03–04/10/2024	Digital Manufacturing Solutions	Digital Manufacturing Solutions	Profesional / Teknikal
Dr. Norasiah Binti Muhammad	Fast Evaluation and User-Friendly Using Scanning Electron Microscope (Thermo Fisher Phenom Pure)	22–23/10/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Dr. Norasiah Binti Muhammad	Advanced Ultrasonic Flaw Detector: Sonatest	04–05/11/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Mohd Fauzi Bin Derani	KNX Tutor	2024	KNX	KNX Association	Profesional / Teknikal
Mohd Hariz Bin Samian	Fast Evaluation and User-Friendly Using Scanning Electron Microscope (Thermo Fisher Phenom Pure)	22–23/10/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Mohd Hariz Bin Samian	Advanced Ultrasonic Flaw Detector: Sonatest	04–05/11/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Mohd Nasir Bin Kamaruddin	KNX Basic Course (KNX Partner)	09/02/2024	KKKL	KNX Association	Profesional / Teknikal
Mohd Nasir Bin	Pneumatic & Electropneumatic	2023	PSA	Festo	Profesional /

Kamaruddin					Teknikal
Muhammad Faiz Bin Abdullah	Pneumatic & Electropneumatic	2023	PSA	Festo	Profesional / Teknikal
Shariza Azwin Binti Yahya	KNX Basic Course (KNX Partner)	09/02/2024	KKKL	KNX Association	Profesional / Teknikal
Teoh Thean Hin	Fast Evaluation and User-Friendly Using Scanning Electron Microscope (Thermo Fisher Phenom Pure)	22–23/10/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Teoh Thean Hin	Advanced Ultrasonic Flaw Detector: Sonatest	04–05/11/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Wan Majdah Binti Ton Mamat	Fast Evaluation and User-Friendly Using Scanning Electron Microscope (Thermo Fisher Phenom Pure)	22–23/10/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Wan Majdah Binti Ton Mamat	Advanced Ultrasonic Flaw Detector: Sonatest	04–05/11/2024	Atomic Solutions Sdn Bhd	Atomic Solutions Sdn Bhd	Profesional / Teknikal
Wan Majdah Binti Ton Mamat	KNX Basic Course (KNX Partner)	09/02/2024	KKKL	KNX Association	Profesional / Teknikal

Appendix C5-5b

PERMOHONAN PERUNTUKAN OS29000 LATIHAN BAGI TAHUN 2026

BIL	TAJUK	JABATAN/ PUSAT/ UNIT	CADANGAN TARIKH	JUMLAH PERMOHONAN RM	CATATAN
1	Train of Trainers CAD CAM	JKM	Jun-26	**6,200.00**	Kepakaran bidang ini terhad yang menyebabkan kursus ni berada tahap kritikal dari segi pelaksanaan dalam jadual waktu kelas waktu kelas
2	Pensijilan Profesional Autodesk Autocad	JKM	Jun-26	**8,000.00**	Keperluan pensijilan profesional bagi pensyarah yang telah mahir dalam bidang Autocad berdasarkan pengalaman mengajar. Namun tidak memiliki sijil profesional untuk bidang ini
3	Seminar Keperluan AI/IOT dalam Pendidikan TVET Politeknik Bersama Industri & Pelajar	JKM	Jun-26	**3,650.00**	Perbincangan kepentingan AI/IOT dalam TVET Politeknik bersama industri melibatkan gabungan pensyarah dan pelajar
4	Pensijilan Profesional Mastercam 2D Basic	JKM	Julai 2026	**10,000.00**	Kepakaran bidang ini terhad yang menyebabkan kursus ni berada tahap kritikal dari segi pelaksanaan dalam jadual waktu kelas

5	TOT Penyelenggaraan Kereta dan Motosikal	JKM	Julai 2026	**8,000.00**	Kepakaran bidang ini terhad yang menyebabkan kursus ni berada tahap kritikal dari segi pelaksanaan dalam jadual waktu kelas dan juga untuk keperluan Akreditasi MQA
6	Kursus Optimization Methods for Additive Manufacturing Applications. using Altair Inspired Software.	JKM	Julai 2026	**3,900.00**	Kursus diperlukan bagi memperkasakan COT ADMC.
7	Kursus Advanced Robotic Welding and Control Techniques for Wire Arc Additive Manufacturing Process.	JKM	Julai 2026	**5,900.00**	Kursus diperlukan bagi meemperkasakan COT ADMC.
8	Kursus Bahasa Isyarat Teknikal	JKM	Julai 2026	**3,450.00**	Kepakaran bidang ini terhad yang menyebabkan kursus ni berada tahap kritikal dari segi pelaksanaan dalam jadual waktu kelas dan juga untuk keperluan Akreditasi MQA Akreditasi MQA
9	TOT Kimpalan	JKM	Julai 2026	**2,850.00**	Kepakaran bidang ini terhad yang menyebabkan kursus ni berada tahap kritikal dari segi pelaksanaan dalam jadual waktu kelas dan juga untuk keperluan

10	IOT Workshop For FYP	JKM	Julai 2026	**2,500.00**	IOT Workshop For FYP: Hands on Learnig Experience diperlukan untuk membantu pelajar menghasilkan idea dan inovasi yang kreatif selari dengan tuntutan Revolusi Industri 4.0.
11	Kursus Penjajaran Dublin Profile (DK,DP,NA dan SDG)	JKM	Julai 2026	**2,700.00**	Kursus Penjajaran Dublin Profile (DK,DP,NA dan SDG) perlu diadakan untuk meningkatkan pemahaman pensyarah terhadapat kurikulum baru versi 2024. Mengenal pasti secara khusus hubungkait DK, DP, NA dan SDG supaya dapat membangunkan hasil pembelajaran (Pentaksiran Berterusan) Kursus/Bengkel/Amali mencapai kualiti standard yang telah ditetapkan.
12	Kursus Persediaan Worldskills Malaysia Belia	JKM	Julai 2026	**3,600.00**	Kursus Kejurulatihan bidang MECAD melibatkan software dan teknologi terkini
13	Kursus Profiling Subject Matter Expert (SME) TVET Staf Mekanikal	JKM	Ogos 2026	**20,000.00**	Kursus menganalisa kepakaran staf untuk keperluan Subject Matter Expert (SME)
14	Kursus CSTP Pensyarah	JKM	Ogos 2026	**2,000.00**	Kepakaran bidang ini terhad yang menyebabkan kursus ni berada tahap kritikal dari segi pelaksanaan dalam jadual waktu kelas dan juga untuk keperluan Akreditasi MQA

APPENDIX C5-6a

Summary of Staff Involvement in Consultancy Activities

No	Staff member (Name)	Achievement/Involvement
		Consultancy
1	MOHAMAD KHIRUDIN BIN AMDAN	Hakim Pertandingan Kemahiran Polteknik dan Kolej Komuniti (POLYCCSKILLS) 2025.
2	ZETTY ROHAIZA BINTI MOHD SAHAK @ ISHAK	1. JURUAUDIT DALAMAN UNIT AUDIT DALAMAN PSA 2. JURI PERTANDINGAN INOVASI 2024 3. PAKAR RUJUK BAGI PRODUK INOVASI INDUSTRI 4. MENTOR BAGI PROGRAM PERINTIS KEUSAHAWANAN PELAJAR JABATAN PERDAGANGAN 2024 5. PENCERAMAH MEET & GREET BERSAMA USAHAWAN PSA 2024 6. JAWATANKUASA PERSIDANGAN 5TH NATIONAL CONFERENCE ON TVET FOR UNGRADUATE STUDENTS (2025)
3	ASRI BIN MAT DESA	Hakim Pertandingan Kemahiran Polteknik dan Kolej Komuniti (POLYCCSKILLS) 2025.
4	NOORAZLAN BIN MOHD SAMSUDDIN	1. Hakim Pertandingan Kemahiran Polteknik dan Kolej Komuniti (POLYCCSKILLS) 2025.
5	MOHD NASIR BIN KAMARUDDIN	1. Panel Pakar Bengkel Kajian Pembentukan dan Kebolehlaksanaan Kerangka Kompetensi Pekerjaan bagi Sistem Pensijilan Kemahiran Malaysia - UPUM SDN BHD (2023)
		2. Panel Penilai Bidang Pelukisan Pelan Mekanikal Untuk Pentauliahan Akreditasi ILP KL 2023
		3. Panel Penilaian WIM Pelukisan Pelan Mekanikal
		4. Fasilatator Pemetaan Kurikulum ADI JPPKK
6	MUHAMMAD FAIZ BIN ABDULLAH	Hakim Pertandingan Kemahiran Polteknik dan Kolej Komuniti (POLYCCSKILLS) 2025.
7	DR. MAZYAN BINTI YAHAYA	1. Juri Karnival Kebolehpasaran Murid Berkeperluan Pendidikan Khas Negeri Selangor Tahun 2025 2. Penilai (Reviewer) bagi Kertas Penyelidikan International AgroFood and Biotechnology Festival @ Special Education Needs 2025 (iFAMB@SEN2025)

Appendix C5-7a

Staff Enhancement Programme PPK & CPCM

BIL	NAMA	NO K/P	PPK	TAHUN	CPCM	TAHUN
1	DR. NORASIAH BINTI MUHAMMAD	770510036216	AUTOCAD FOR MECHANICAL	2024	TVET RESERCH ON GENERATIVE AI	2024
2	ZETTY ROHAIZA BINTI MOHD SAHAK @ISHAK	761101025730	PNEUMATIC/ELECTRO-PNEUMATIC SERIES	2024	PENYELIAAN DAN KEPIMPINANA ORGANISASI	2024
3	SHARIZA AZWIN BT YAHYA	760619105298	AUTOCAD FOR MECHANICAL	2024	PENYELIAAN DAN KEPIMPINANA ORGANISASI	2024
4	TEOH THEAN HIN	810204035681	AUTOCAD FOR MECHANICAL	2024	TVET RESERCH ON GENERATIVE AI	2024
5	ASRI BIN MAT DESA	720408025689	VISUAL WELDING INSPECTION	2025	TVET RESERCH ON GENERATIVE AI	2025
6	MOHAMAD KHIRUDIN BIN AMDAN	720115065601	AUTOCAD FOR MECHANICAL	2023	TVET RESERCH ON GENERATIVE AI	2024
7	WAN MAJDAH BT TON MAMAT	811009-11-5330	AUTOCAD FOR MECHANICAL	2024		
8	AHMAD FAKARUDDIN BIN MOHD FAUZI	821127086189	PNEUMATIC/ELECTRO-PNEUMATIC SERIES	2024		
9	ALIAS BIN OTHMAN	760101038369	AUTOCAD FOR MECHANICAL	2024		
10	MOHD FAUZI B DERANI	800519085115	PNEUMATIC/ELECTRO-PNEUMATIC SERIES	2024	HIGH IMPACT PRESENTATION USING CANVA	2024
11	SYAHRULAZMIN BIN SARMIN	800130045035	VISUAL WELDING INSPECTION	2025	HIGH IMPACT PRESENTATION USING POWTOON	2024
12	MOHD HARIZ BIN SAMIAN	830112015243	VISUAL WELDING INSPECTION	2025	PENYELIAAN DAN KEPIMPINANA ORGANISASI	2024
13	ISHAK BIN HASAN	810223115281	VISUAL WELDING INSPECTION	2025	INOVASI DAN ICT DALAM PENGAJARAN DAN PEMBELAJARAN TVET	2024
14	MOHD SHARIZAN BIN MOHD SHARIF	800210145925			INOVASI DAN ICT DALAM PENGAJARAN DAN PEMBELAJARAN TVET	2024

Appendix C5-7b.

Staff Development Activities

Nama Peserta	Tajuk Kursus / Program	Tarikh	Tempat / Anjuran	Dikeluarkan Oleh / Penganjur	Kategori
Alias Bin Othman	Plastic Film Tear Tester	21/07/2025	Winpower Corporation (M) Sdn Bhd	Winpower Corporation (M) Sdn Bhd	Industri / Kolaborasi
Asri Mat Desa	Train the Trainer for Altair Inspire Suite	8-17 May 2024	Politeknik PSA	Altair Engineering Sdn. Bhd.	Industri / Kolaborasi
Mohd Fauzi Bin Derani	Bengkel Persediaan Pasukan & Perancangan PKAT / Penyelaras Atlet Politeknik Malaysia	14–15/01/2025	Politeknik Nilai, Negeri Sembilan	Politeknik Nilai / JPPKK	Pembangunan / Akademik (CQI/Workshop)
Norasiah binti Muhammad	Seminar on Empowering TVET for Future Development Series 4	21 Feb 2024	UKM	UKM	Pembangunan / Akademik (CQI/Workshop)
Norsa`Aidah binti Sa`Aid	Train the Trainer for Altair Inspire Suite	8-17 May 2024	Politeknik PSA	Altair Engineering Sdn. Bhd.	Industri / Kolaborasi
Nurazlinda binti Yahya @ Muhammed	Train the Trainer for Altair Inspire Suite	8-17 May 2024	Politeknik PSA	Altair Engineering Sdn. Bhd.	Industri / Kolaborasi
Teoh Thean Hin	Train the Trainer for Altair Inspire Suite	8-17 May 2024	Politeknik PSA	Altair Engineering Sdn. Bhd.	Industri / Kolaborasi

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

APPENDICES C6:

FACILITIES

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)
DIPLOMA IN MECHANICAL ENGINEERING (DKM)

Physical Facilities and Equipment

No	Laboratory/ Workshop	Number Of Equipments
1	Welding Workshop	60
2	Fitting & Machine Workshop	71
3	Foundry Workshop	15
4	Makmal ADMC	42
5	Strength of Material & Mechanics of Machine Laboratory	22
6	Pneumatic & Hydraulic Lab	9
7	Control Lab	15
8	CADCAM & Manufacturing Lab	19
9	Fluid Mechanics & Thermodynamics Lab	10
10	Metallurgy Lab	36
11	Maintenance Lab	5
12	Packaging Workshop	16
13	Packaging Testing Lab	24
14	Plastic Workshop	13

APPENDIX C6-1b

List of Course Involving with Practical Work

NO	CODE	COURSE	LECTURER	BLOCK	STATUS
1	DJJ10232	MECHANICAL WORKSHOP PRACTICE 1	NORSA'AIDAH BINTI SA'AID	KH	
			NORLIDAWATI BINTI MOHAMAD	KH	
			DR. KHAIRULNIZAM BIN KASIM	KG	
2	DJJ20252	MECHANICAL WORKSHOP PRACTICE 2	ISNURAINI BINTI KASSIM @ ISMAIL	KF	
			NURHIDAYA BINTI MUSA	KH	
			SHARIZA AZWIN BINTI YAHYA	KG	
3	DJJ30302	MECHANICAL WORKSHOP PRACTICE 3	ZETTY ROHAIZA BINTI MOHD SAHAK@ISHAK	KH	
			AHMAD FAKARUDDIN BIN MOHD FAUZI	KD	
			ALIAS BIN OTHMAN	KD	
4	DJJ40142	MECHANICAL WORKSHOP PRACTICE 4	BRYAN HEE TZE KEON	KD	
			MOHD SHARIZAN BIN MOHD SHARIF	KD	
			ROSLAN BIN KAMARUDDIN	KD	

APPENDIX C6-1b

NO	CODE	COURSE	LECTURER	BLOCK	STATUS
1	DJJ10223	ENGINEERING DRAWING	BRYAN HEE TZE KEON	KC / JMSK	
2	DJJ20282	COMPUTER AIDED DESIGN	NURAZLINDA BINTI YAHYA	JMSK	
3	DJJ20263	ELECTRICAL AND ELECTRONIC TECHNOLOGY	MOHD FAUZI BIN DERANI	KD	
4	DJJ20273	FLUID MECHANICS	TS. WAN MAJDAH BINTI TON MAMAT	KE	
5	DJJ30293	THERMODYNAMICS	DR. NORASIAH BINTI MUHAMMAD	KE	
6	DJJ30313	ENGINEERING MECHANICS	SOMCHAI A/L ENOI	KE	
7	DJJ30323	STRENGTH OF MATERIALS	SHARIZA AZWIN BINTI YAHYA	KE	
8	DJJ30113	MATERIAL SCIENCE AND ENGINEERING	DR. NORASIAH BINTI MUHAMMAD	KD	
9	DJJ40163	MECHANICS OF MACHINES	DR. MAZYAN BINTI YAHAYA	KE	
10	DJJ40153	PNEUMATIC AND HYDRAULICS	DR. MOHD ELIAS BIN DAUD	KE	
11	DJJ40173	ENGINEERING DESIGN	NOOR HAZNIDA BINTI BAKAR	KE	
12	DJJ50203	TROUBLESHOOTING AND MAINTENANCE FOR MECHANICAL COMPONENTS	ZULKHAIRI BIN KHAIRUDIN	KE	

Workshops

NO	COURSE	TOPIC	TOTAL HOURS	BLOCK	EQUIPMENT / APPARATUS
1	DJJ10232	Fitting	20 Jam	Fitting Workshop	Vernier Caliper, Bench Drill, Height Vernier Caliper, Hack saw
2		Machining	18 Jam	Machine Workshop	Lathe Machine
3		Welding	18 Jam	Welding Workshop	SMAW & GMAW Welding Machine
4	DJJ20252	Foundry	20 Jam	Foundry Workshop	Striking Board, Sprue, Gate Cutter, Rammer, Riddle, Strike Off Bar, Hand Drill Machine, Sawing Machine
5		Machining	18 Jam	Machine Workshop	Lathe Machine
6		Welding	18 Jam	Welding Workshop	TIG & MIG Welding Machines
7	DJJ30302	Machining	56 Jam	Machine Workshop	Milling Machine & Surface Grinding Machine
8		Programming Software		CAD/CAM	CAD/CAM Software
9		CNC/EDM		CAD/CAM	EDM or CNC Milling/Lathe
10	DJJ40142	Surface Grinding	56 Jam	Machine Workshop	Surface Grinding Machine
11		Read the Drawing and Write Programs		CAD/CAM	EDM and CNC Milling/Lathe Light Box and Optical Set
12		Sketch Object In 2D		CAD/CAM	CAD/CAM Software
13		Read the Drawing		CAD/CAM	EDM and CNC Milling/Lathe
14		Write Programs		CAD/CAM	EDM and CNC Milling/Lathe

Laboratories

NO	COURSE	TOPIC	TOTAL HOURS	BLOCK	EQUIPMENT / APPARATUS
1	DJJ10223 - ENGINEERING DRAWING	Introduction to Engineering Drawing	56 HOURS	DRAWING LAB CAD 1, CAD 2, KAM 2, JMSK	Kertas lukisan Peralatan melukis Autodesk AutoCAD Certified
		Orthographic Projection and Isometric			
		Computer Aided Design (CAD)			
		Creating Drawing			
		Annotation and Drawing Organization			
		Orthographic and Isometric			
		Sectional View, Hatching Object and Reusable Content			
		Plotting			
2	DJJ20282 - COMPUTER AIDED DESIGN	Introduction To CAD	42 HOURS	CAD 2 JMSK	Autodesk Inventor Certified
		Sketching and Constraints Techniques			
		3D Part Modeling Techniques			
		Dimension and Annotation in Drawing			
		Assembly Design			
3	DJJ20263 - ELECTRICAL & ELECTRONIC TECHNOLOGY	Measurement Color Code	10 HOURS	Control Lab	a) Analog Multimeter
		Ohm's law			a) Analog Multimeter b) DC Power Supply
		Series Circuit			a) Analog Multimeter b) DC Power Supply
		Parallel Circuit			a) Analog Multimeter b) DC Power Supply
4	DJJ20273 - FLUID MECHANICS	Physical properties of fluid	10 HOURS	Fluid Mechanic Lab	Pressure Gauge
		Calibration of pressure gauge			Manometer U Tube (Vertical & Inclined)
		Fluid static			Venturi Meter
		Bernoulli theorem			Venturi Meter with Manometer U Tube
		Flow measurement			
		Losses in pipeline system			
5	DJJ30293 - THERMODYNAM	Perfect gas	10 HOURS	Fluid Mechanic	Vapor Pressure Power
		Properties of pure substances			
		First law of thermodynamics			

	ICS	Second law of thermodynamics		Lab	
6	DJJ30313 - ENGINEERING MECHANICS	Fundamentals of statics	10 HOURS	Engineering Mechanics Lab	Force In Mechanical System
		Equilibrium			Force Crane Apparatus
		Structure			Incline & Friction Plane
		Velocity and acceleration			Incline & Friction Plane
		Force and motion			
		Work and energy			
7	DJJ30323 - STRENGTH OF MATERIALS	Tensile test	10 HOURS	Engineering Mechanics Lab, ADMC	Shear Force Apparatus
		Thermal stress test			Beam Apparatus
		Shear stress test			Euler Struts Apparatus
		Bending stress test			Euler Struts Apparatus
		Beam deflection test			Universal Testing Machine
		Torsional test			
8	DJJ30113 – MATERIAL SCIENCE AND ENGINEERING	Dye penetration test	10 HOURS	Metallurgy Lab, ADMC	Cleaner/Remover, Penetrant, Developer
		Microstructure analysis			Abrasive Cut-Off Wheels Hot mounting press Grinder (Coarse to Fine Grinding Stages) Diamond abrasives polisher Ultrasonic cleaner Optical microscope
		Vickers hardness test			Vickers hardness testing machine
		Heat treatment			High temperature oven Metallographic grinding equipment Hardness tester (Rockwell Type)
9	DJJ40163 - MECHANICS OF MACHINES	Friction	10 HOURS	Engineering Mechanics Lab	Friction Inclined Plane Kit
		Slider crank			Slider Crank Chain Mechanism
		Link mechanism			Four Bar Link Mechanism
		Simple Harmonic motion			Compound Pendulum
10	DJJ40153 - PNEUMATIC AND HYDRAULICS	Construct a circuit on Pneumatic	10 HOURS	Pneumatic Lab	SMC Electro-Pneumatic Training Set
		Construct a circuit on Electro pneumatic			
		Construct a circuit on Hydraulic			
		Construct a circuit on Electro hydraulic			

11	DJJ40173 - ENGINEERING DESIGN	Perform 3D printing on product design.	28 HOURS	ADMC	3D Printing Machine
12	DJJ50203 - TROUBLESHOOTING AND MAINTENANCE FOR MECHANICAL COMPONENTS	Assemble and disassemble of mechanical components	28 HOURS	Maintenance Lab	- Assembly & Maintenance Centrifugal Pump Trainer - Assembly Piston Compressor Trainer - Hydrodynamic Journal Bearing Trainer

Operating hours of PSA Library

Lecture Session	Semester Break
Monday - Friday 7.30 a.m. – 4.30 p.m.	Open only during office hours (Library closed during break time)
Saturday, Sunday & Public Holidays Closed	

List of References Book Related To Programme (Diploma in Mechanical Engineering)

NO	TITLE	WRITER	YEAR	QUANTITY
1	Life cycle of sustainable packaging: from design to end of life	Rafael A. Auras, Susan E.M. Selke	2023	1
2	Autodesk Inventor 2023: A Power Guide for Beginner and Intermediate Users	Sandeep Dogra	2021	1
3	Introduction to Hydraulics and Pneumatics	Ilango Sivaraman	2021	2
4	Occupational Safety and Health Act and Regulations	Penasihat Undang-undang MDC	2021	1
5	Hydraulics engineering: problems and solutions	Amat Sairin Demun	2020	5
6	Autodesk Inventor 2021: A Tutorial Introduction	L. Scott Hansen, Ph.D.	2020	1
7	3D Printing: Technology, Applications And Selection	Rafiq Noorani	2020	1
8	Product Design And Development	Karl T. Ulrich	2020	1
9	Technical Drawing 101 With AutoCAD 2021: A Multidisciplinary Guide To Drafting Theory And Practice With Video Instruction	Douglas Smith	2020	1
10	Machinery component maintenance and repair	Heinz P. Bloch, Fred K. Geitner.	2020	1
11	Foundations of Materials Science And Engineering	William Smith	2020	1
12	Machinery component maintenance and repair	Heinz P. Bloch, Fred K. Geitner.	2019	1
13	Foundations of Materials Science And Engineering	William Smith	2019	1
14	Composites Materials For Food Packaging	Guiseppe Cirillo	2018	2
15	Packaging Logistics: Understanding And Managing The Economic And Environmental Impacts Of Packaging In Supply Chains	Henrik Palsson.	2018	2
16	Fundamentals of industrial instrumentation and process control	William C. Dunn.	2018	1
17	Principles of industrial process instrumentation	Idongesit Sampson	2018	1
18	Autodesk Inventor 2019: A Tutorial Introduction	Hansen, L. Scott,	2018	1
19	Refrigeration and air conditioning technology	John Tomczyk, Eugene Silberstein, Bill Whitman, Bill Johnson.	2017	1
20	Programmable logic controllers	Frank Petruzella	2017	1

NO	TITLE	WRITER	YEAR	QUANTITY
21	Managing Packaging Design For Sustainable Development: A Compass For Strategic Directions	Daniel Hellstrom	2017	1
22	Food Packaging Materials: Testing & Quality Assurance	Preeti Singh	2017	1
23	Food packaging materials	Luciano Piergiovanni, Sara Limbo.	2016	2
24	Multilayer flexible packaging	John R Wagner Jr..	2016	2
25	Fluid mechanics	Frank M. White; adapted by Professor Rhim Yoon Chul.	2016	2
26	Agro food processing and packaging technology	Engineers India Research Institute.	2016	1
27	Thermodynamics	BS Ubhi.	2016	1
28	New structural packaging: gold edition.	Josep Maria Garrofe	2016	1
29	Modern packaging technology: for processed food, bakery, snack foods, spices & allied food products	Sudhir Gupta.	2016	1
30	Integrating the packaging and product experience in food and beverages: a road-map to consumer satisfaction	Peter Burgess.	2016	1
31	Vector mechanics for engineers: statics and dynamics	Ferdinand Beer, E. Russell Johnston.	2016	1
32	Handbook of aseptic processing and packaging	Jairus R.D. David, Ralph H. Graves, Thomas Szemplenski.	2016	1
33	Introduction To Maintenance Engineering: Modeling, Optimization, and Management	Mohammed Ben-Daya	2016	1
34	Technical Drawing With Engineering Graphics	Frederick E. Giesecke	2016	1
35	Takeaway Food Packaging Now	Yvett Arzate Gomez	2016	1
36	Mechanics of solids and structures	David W.A. Rees	2016	1
37	Introduction To Basic Manufacturing Processes And Workshop Technology	Rajender Singh	2016	1
38	Eco Packaging Now	Tony Ibbotson	2016	1
39	Brand Protection, Security Labeling And Packaging: Technologies And Strategies For Optimum Product Protection : Illustrated	Plimmer, Jeremy	2016	1
40	Mechanics of Materials	Egor P. Popov	2016	1
41	Mechanics Of Structures Vol. 1 [Strength Of Materials]	Dr. H. J. Shah.	2016	1

NO	TITLE	WRITER	YEAR	QUANTITY
42	Plastics packaging: properties, processing, applications, and regulations	Susan E.M. Selke, John D. Culter.	2016	1
43	Workshop processes, practices and materials	Bruce J. Black.	2015	4
44	Applied fluid mechanics	Robert L. Mott, Joseph A. Untener.	2015	6
45	Mechanics of materials	Ferdinand P. Beer, E. Russell Johnston, John T. Dewolf, David F. Mazurek,.	2015	3
46	Beginning AutoCAD 2015: exercise workbook	Cheryl R. Shrock, Steve Heather.	2015	2
47	Automotif Kenderaan: Tingkatan 4 Dan 5	Abu Bakar Md. Jelas	2015	2
48	Menservis Peralatan Penyejukan Dan Penyaman Udara: Tingkatan 5	Shawaluddin bin Md. Aris.	2015	2
49	Thermodynamics: an engineering approach	Yunus A. Cengel, Michael A. Boles.	2015	1
50	Polymers for packaging applications	Sajid Alavi, Sabu Thomas, K.P. Sandeep, Nandakumar Kalarikkal, Jini Varghese, and Srinivasarao Yaragalla.	2015	1
39	Technology of polymer packaging	Arabinda Ghosh.	2015	1
40	Pharmaceutical packaging technology	Suidha Rayhana.	2015	1
41	Hydraulics and pneumatics	A.K. Upadhyay.	2015	1
42	Plastics packaging: properties, processing, applications, and regulations	Susan E.M. Selke, John D. Culter.	2016	1
43	Workshop processes, practices and materials	Bruce J. Black.	2015	4
44	Applied fluid mechanics	Robert L. Mott, Joseph A. Untener.	2015	6
45	Mechanics of Materials	Ferdinand P. Beer, E. Russell Johnston, John T. Dewolf, David F. Mazurek,.	2015	3
46	Beginning AutoCAD 2015: exercise workbook	Cheryl R. Shrock, Steve Heather.	2015	2
47	Automotif Kenderaan: Tingkatan 4 Dan 5	Abu Bakar Md. Jelas	2015	2

NO	TITLE	WRITER	YEAR	QUANTITY
48	Menservis Peralatan Penyejukan Dan Penyaman Udara: Tingkatan 5	Shawaluddin bin Md. Aris.	2015	2
49	Thermodynamics: an engineering approach	Yunus A. Cengel, Michael A. Boles.	2015	1
50	Polymers for packaging applications	Sajid Alavi, Sabu Thomas, K.P. Sandeep, Nandakumar Kalarikkal, Jini Varghese, and Srinivasarao Yaragalla.	2015	1
51	Technology of polymer packaging	Arabinda Ghosh.	2015	1
52	Pharmaceutical packaging technology	Suidha Rayhana.	2015	1
53	Hydraulics and pneumatics	A.K. Upadhyay.	2015	1
54	Mechanics of materials	Ferdinand Beer, E. Russell Johnston, Jr, John Dewolf, David Mazurek.	2015	1
55	Mastering AutoCAD 2016 and autoCAD LT 2016	George Omura with Brian C. Benton.	2015	1
56	Hydraulics and pneumatics	Jagadeesha T.	2015	1
57	Material innovation: packaging design	Andrew H. Dent & Leslie Sherr.	2015	1
58	Packaging and transportation forensics: reducing risk and liability	Singh, S. Paul	2015	1
59	Industrial Engineering And Management	Ravi, V	2015	1
60	Handbook On Printing Technology (Offset, Flexo, Gravure, Screen, Digital, 3D Printing With Book Binding And CTP)	NIIR Board Of Consultants & Engineers.	2015	1
61	Innovations in food packaging	Jung H. Han.	2014	8
62	Basic engineering mathematics	John Bird.	2014	5
63	Fun packaging: package designs from around the world	Miquel Abellan.	2014	3
64	Fluid mechanics: fundamentals and applications	Yunus A. Cengel, John M. Cimbala.	2014	3
65	Schaum's outlines: strength of materials	Nash, William | Potter, Merle.	2014	3

NO	TITLE	WRITER	YEAR	QUANTITY
66	Plastic molding: an introduction to the materials, equipment and methods used in the fabrication of plastic products	Louis F. Rahm.	2014	1
67	Schaum's outlines: fluid mechanics and hydraulics	Ranald V. Giles, Jack B. Evett, Cheng Liu.	2014	1
68	Food packaging applications of polylactic acid	Kojo Afrifah.	2014	1
69	Outlines of Food Packaging	Amol P. Khapre.	2014	1
70	Application of modified atmosphere packaging on quality of selected vegetables	Ioannis Arvanitoyannis, Achilleas Bouletis, Dimitrios Ntionias.	2014	1
71	The importance of packaging design for the chemistry of food products	Giovanni Brunazzi, Salvatore Parisi, Amina Pereno.	2014	1
72	Conventional label printing processes	John Morton and Robert Shimmin.	2014	1
73	Digital label and package printing: terminology, technology, materials, management and performance	Michael Fairley.	2014	1
74	Engineering mathematics	K.A. Stroud, with Dexter J. Booth.	2013	5
75	Food packaging: principles and practice	Gordon L. Robertson.	2013	5
76	Kinematics and dynamics of machinery	Robert L. Norton.	2013	2
77	Engineering mechanics: statics & dynamics	Francesco Costanzo, Michael E. Plesha, Gary L. Gray.	2013	2
78	Advanced engineering mathematics	Peter V. O'Neil.	2013	2
79	Mechanics of materials	James M. Gere, Barry J. Goodno.	2013	2
80	Applying AutoCAD 2013	Terry T. Wohlers.	2013	2
81	Packaging design	Chris van Uffelen.	2013	3
82	The packaging designer's book of patterns	George L Wybenga and La´szlo Roth	2013	3
83	Plastic films in food packaging: materials, technology and applications	Sina Ebnesajjad.	2013	3
84	Handbook of paper and paperboard packaging technology	Mark J. Kirwan.	2013	3

NO	TITLE	WRITER	YEAR	QUANTITY
85	Automotif Mekanik: Panduan Membaiki Kereta	Jamil Hashim	2013	3
86	Engineering design	George E. Dieter, Linda C. Schmidt.	2013	1
87	Lukisan kejuruteraan: teknik umum ke spesifik (UKeS) whole to parts	Zainal Abidin Akasah, Maizam Alias, Liaw Yin Huat.	2013	1
88	Machines & mechanisms: applied kinematic analysis	David Myszka.	2013	1
89	Maintenance and reliability best practices	Gulati, Ramesh | Smith, Ricky.	2013	1
90	AutoCAD 2014 and AutoCAD LT essentials 2014: essentials	Scott Onstott.	2013	1
91	Manual of engineering drawing: technical product specification and documentation to British and international standards	Waltham [Mass.] Elsevier/Butterworth-Heinemann	2012	4
92	AutoCAD 2012 instructor: a student guide to complete coverage of AutoCAD's commands and features	James A. Leach, Thomas D. Bledsaw.	2012	4
93	An introduction to combustion: concepts and applications	Turns, Stephen R.	2012	2
94	AutoCAD 2013 and AutoCAD LT 2013 essentials: AutoDesk official training guide	Onstott, Scott.	2012	2
95	Principles of composite material mechanics	Ronald F. Gibson.	2012	2
96	Electrical principles	Stephen L. Herman.	2012	2
97	Air conditioning and refrigeration	Rex Miller, Mark R. Miller.	2012	2
98	Emerging food packaging: principles and practice	Kit L. Yam and Dong Sun Lee.	2012	3
99	Maintenance engineering and management	R. C. Mishra and K. Pathak.	2012	3
100	Packaging machinery handbook: the complete guide to automated packaging machinery including packaging line design	Henry, John R.	2012	3
101	Packaging technology: fundamentals, materials and processes	Anne Emblem and Henry Emblem.	2012	3
102	Packaging design: successful product branding from concept to shelf	Marianne Rosner Klimchuk and Sandra A. Krasovec.	2012	3
103	Occupational Safety and Health Act 1994 (Act 514) & regulations: (law stated is as at 5 April 2012).		2012	1
104	Power plant equipment operation and maintenance guide: maximizing efficiency and profitability	Kiameh, Philip.	2012	1

NO	TITLE	WRITER	YEAR	QUANTITY
105	Mechanics of fluids	Massey, B S (Bernard Stanford) | Ward-Smith, A J Alfred John	2012	1
106	Mechanics of materials	Andrew Pytel, Jaan Kiusalaas.	2012	1
107	Fluid Mechanics 7th Edition	Frank M. White	2011	2
108	Understanding hydraulics	Les Hamill	2011	5
109	Pneumatics & hydraulics	Sydnes	2011	2
110	Introduction to Pneumatics	Festo Didactic	2011	1
111	Workshop processes, practice and material	Bruce J. Black	2010	8
112	Workshop processes, practice and material	Bruce J. Black	2010	8
113	Workshop processes, practice and material	Bruce J. Black	2010	8
114	CAD/CAM principles and applications	Rao, P. Nageswara	2010	3
115	Foundations of materials science and engineering	William F. Smith, Javad Hashemi	2010	3
116	CAD/CAM principles and applications	Rao, P. Nageswara	2010	3
117	Entrepreneurship for engineers / Kenji Uchino	Kenji Uchino	2010	8
118	Fundamentals of thermodynamics SI version	Claus Borgnakke, Richard E. Sonntag	2009	1
119	Fluid Mechanics 6th Edition	Frank M. White	2008	2
120	Strength of material	Negi, L.S	2008	1
121	Automation, production systems, and computer-integrated manufacturing	Groover, Mikell P	2008	3
122	Thermodynamics an engineering approach, 6th edition	Yunus A. Cengel and Michael A. Boles	2008	2
123	Automation, production systems, and computer-integrated manufacturing	Groover, Mikell P	2008	3
124	Maintenance Engineering Handbook	Keith Mobley, Lindley R. Higgins, Darrin J. Wikoff.	2008	1
125	Maintenance Engineering and Management	CIBSE guide M--London	2008	1
126	Maintenance Engineering Handbook	. Keith Mobley, Lindley R. Higgins, Darrin J. Wikoff.	2008	1
127	Maintenance Engineering and Management	CIBSE guide M--London	2008	1
128	Electrical technology	Uday A. Bakshi	2007	5

NO	TITLE	WRITER	YEAR	QUANTITY
129	Workshop projects fixtures & tools for a successful shop	Donald W. Moffat	2007	2
130	Workshop projects fixtures & tools for a successful shop	Donald W. Moffat	2007	2
131	Workshop projects fixtures & tools for a successful shop	Donald W. Moffat	2007	2
132	AutoDesk Inventor 10 essentials plus	Daniel T. Banach, Travis J. Jones, Alan J. Kalameja	2006	2
133	Fluid mechanics fundamentals and applications	Yunus A. Cengel, John M. Cimbala	2006	2
134	Fluid mechanics fundamentals and applications	Yungas A.Cengel, John M. Cimbala	2006	4
135	Foundations of materials science and engineering	William F. Smith, Javad Hashemi	2006	4
136	Maintenance planning and scheduling handbook	Doc Palmer	2006	1
137	Maintenance planning and scheduling handbook	Doc Palmer	2006	1
138	Technology of Machine Tools	Steve F. Krar, Arthur R. Gill	2005	3
139	Mastering CAD/CAM	Ibrahim Zeid	2005	2
140	Pengukuran & instrumentasi elektrik	Ruzairi Hj. Abdul Rahim	2005	1
141	Mastering CAD/CAM	Ibrahim Zeid	2005	2
142	Autodesk inventor 9 an introduction	Ron K. C. Cheng	2004	4
143	Strength of materials a unified theory	Patnaik, Surya	2004	1
144	Project-based AutoCAD	Darren J. Manning	2004	1
145	Fluid Mechanics 5th Edition	Frank M. White	2003	1
146	Fluid mechanics	Pijush K. Kundu, Ira M. Cohen	2003	1
147	Safety promotion and injury prevention	Krishnan Rajam and Krishna Gopal Pampal	2003	1
148	Industrial instrumentation and control	S. K. Singh	2003	2
149	AutoCAD R14 fundamentals	William F. Riley, Leroy D. Sturges	2002	1
150	Fluid mechanics with engineering applications	E. John Finnemore, Joseph B. Franzini	2002	2
151	Project management practical tools for success	Haynes, Marion E.	2002	1
152	Manufacturing Engineering &Technology	Serope Kalpakjian	2001	3
153	Fluid mechanics	John F. Douglas, Janusz M. Gasiorek, John A. Swaffield	2000	2

NO	TITLE	WRITER	YEAR	QUANTITY
154	Fluid Mechanics 4th Edition	John F. Douglas, Janusz M. Gasiorek, John A. Swaffield	2000	1
155	Fluid Mechanics 4th Edition	Frank M. White	1999	3
156	Strength of materials and structures	John Case, Lord Chilver, Carl T. F. Ross	1999	1
157	Mechanics of machines advanced theory and examples	John Hannah and R. C. Stephens	1999	1
158	Pneumatics System Principles and Maintenance	MC GRAW HILL, S. J. MAJUMDAR	1999	8
159	Engineering design principles	Kenneth S. Hurst	1999	1
160	Facility manager's operation and maintenance handbook / Bernard T. Lewis	Lewis, Bernard T.	1999	8
161	Engineering mechanics. Vol. 2 dynamics / J. L. Meriam, L. G. Kraige	J. L. Meriam, L. G. Kraige	1998	2
162	AutoCAD R14 advanced features		1998	5
163	AutoCAD 14 companion / James A. Leach	James A. Leach	1998	2
164	Computer aided manufacturing	Tien Chien Chang, Richard A. Wysk, Hsy Pin Wang	1998	6
165	Fundamentals of thermodynamics	Richard E. Sonntag, Claus Borgnakke, Gordon J. Van Wylen	1998	5
166	Project management a systems approach to planning, scheduling and controlling	Harold Kerzner	1998	1
167	Control engineering	W. Bolton	1998	3
168	Design of machine elements	Spotts, M. F.	1998	10
169	Entrepreneurship / Robert D. Hirsch, Michael P. Peters	Robert D. Hirsch, Michael P. Peters	1998	2
170	Engineering drawing problem series 1	Frederick E. Giesecke	1997	1
171	Project management principles and practices	M. Pete Spinner	1997	1
172	Project risk management processes, techniques, and insights	C. B. Chapman	1997	1
173	Modern control engineering /	Katsuhiko Ogata	1997	5

NO	TITLE	WRITER	YEAR	QUANTITY
174	Design and analysis of experiments	Montgomery, Douglas C.	1997	8
175	Introduction to statistical quality control	Montgomery, Douglas C.	1997	2
176	Engineering drawing and design	David A. Madsen; Terence M., Shumaker, J. Lee Turpin, Catherine Stark	1996	1
177	Engineering drawing	A. W. Boundy	1996	1
178	Workshop technology	H. S. Bawa	1996	5
179	Workshop technology	H. S. Bawa	1996	5
180	Safety and environmental management	Daniel Della-Giustina	1996	5
181	Communication for engineering students / John W. Davies	John W. Davies	1996	8
182	Communication skills for business and professions / Paul R. Timm, James A. Stead	Paul R. Timm, James A. Stead	1996	5
183	Workshop technology	H. S. Bawa	1996	5
184	Engineering mechanics statics & dynamics / written by Andrew Pytel, Jaan Kiusalaas	Andrew Pytel, Jaan Kiusalaas	1996	8
185	Engineering mechanics dynamics / written by William F. Riley, Leroy D. Sturges	William F. Riley, Leroy D. Sturges	1996	1
186	Workshop technology	H. S. Bawa	1996	5
187	The engineering design process	Atila Ertas	1996	1
188	Engineering design a modern approach	B. S. Dhillon	1996	1
189	Engineering drawing interpretation	Ron Tully--Melbourne: Nelson	1995	1
190	Engineering experimentation planning, execution, reporting	Ernest O. Doebelin	1995	5
191	Safety engineering	James CoVan	1995	8
192	Theory of machines and mechanisms	Joseph Edward Shigley, John Joseph Uicker, Jr.	1995	4
193	Parametric and feature-based CAD/CAM concepts, techniques, and applications	Jami J. Shah, Martti Mantyla	1995	1

NO	TITLE	WRITER	YEAR	QUANTITY
194	Parametric and feature-based CAD/CAM concepts, techniques, and applications	Jami J. Shah, Martti Mantyla	1995	1
195	Theory of machines and mechanisms	Joseph Edward Shigley, John Joseph Uicker, Jr.	1995	4
196	Project planning, scheduling and control in construction an encyclopedia of terms and applications	Calin M. Popescu, Chotchai Charoenngam	1995	1
197	Parametric and feature-based CAD/CAM concepts, techniques, and applications	Jami J. Shah, Martti Mantyla	1995	1
198	Engineering experimentation planning, execution, reporting	Doebelin, Ernest O.	1995	3
199	Standard handbook of plant engineering	Robert C. Rosaler editor	1995	5
200	Plant services and operations handbook	Anthony Lawrence Kohan	1995	1
201	Safety instructions for personal protection	Neville Williams	1994	2
202	Engineering design methods strategies for product design	N. Cross	1994	1
203	Experimental methods for engineers	J. P. Holman	1994	3
204	Applied statistics and probability for engineers	Montgomery, Douglas C	1994	2
205	Entrepreneurship starting your own business / Roger Hutt	Roger Hutt	1994	5
206	Applied Thermodynamics For Engineering Technologist, 5th edition	Easteop, T.D & McConkey	1993	0
207	Applied Thermodynamics For Engineering Technologist, 5th edition	Easteop, T.D & McConkey	1993	0
208	The engineering design process	Atila Ertas, Jesse C. Jones	1993	1
209	Plant engineer's portable problem solver	Donald W. Moffat	1993	2
210	Mechanics of machines	G. H. Ryder and M. D. Bennett	1990	3
211	Mechanics of machines	G. H. Ryder and M. D. Bennett	1990	3
212	Mechanics of machines	Samuel Doughty	1988	3
213	Mechanisms and dynamics of machinery	Hamilton H. Mabie, Charles F. Reinholtz	1987	1
214	Strength of materials; B.Sc. Engg. and diploma courses) (MKS and S.I. units)	R. S. Khurmi	1982	1
215	Electrical technology	Edward Hughes	1960	8

Description of Online Application

No.	Application	Description
Online Application:		
1	PSA email	Link to 1GovUC PSA email (gmail)
2	eMeet@PSA	Minutes of meeting management system
3	DDMS 2.0	Digital Document Management System
4	E-UIDM	Audio visual equipment and service application
5	Sistem Pengurusan Maklumat Perpustakaan	ILMU and OPAC management system
6	e-PnP	Teaching and learning planning system
7	e-Aduan Lab	PSA laboratory and workshop maintenance report form
8	e-Fasiliti	Meeting room reservation system and PSA facility for staff and student use
9	e-Kenderaan	System that manages and processes vehicle reservations for staff
10	SPMP	Polytechnic Academic Information Management System
11	e-Senggaraan	The platform mechanical, electrical, civil, and landscape damages complaints
12	Sistem Penilaian Prestasi Pembekal	Application to evaluate suppliers who have rendered service in PSA
e-Government Applications		
1.	HRMIS	HRMIS (Human Resource Management Information System) is an application system that encompasses all aspects of human resource management from a civil servant's appointment to his retirement
2	e-Perolehan	e-Perolehan is an electronic procurement system that enables suppliers to sell products and services to the Government through the Internet. It also connects communities of buyers and sellers in a safe and secured environment.
3	EPSA	EPSA is a Government of Malaysia initiative and INTAN is given the mandate to promote the use of ICT to civil

		servants for their continuous and lifelong learning. Every civil servant either pre, in or post service are eligible for EPSA® membership that are free and easy. All membership is, however, subject to the privacy policy set.
No.	**Application**	**Description**
4	SPA	Asset Management Monitoring System (SPPA) is an application developed for the control and monitoring of assets for all ministries and federal agencies
MOHE Applications		
1	ESIS	ESIS is the database interactive form of web-based that developed based on four main objectives of increasing efficiency data management training of staff, as record career development work, streamlining data of posts and streamlining any information related services staff and officials in the head office of Education Polytechnic (JPP) and Department of Education and Community College (JPKK) also Polytechnic Institutions and Community College

ICT PSA Staff Qualifications

No.	Name	Designation	Qualification
1.	Azran Bin Zainal Abidin	F10	• Master's degree in Computer Science
2.	Ts. Mahyuni Binti Mohd Idris	F10	• Ijazah Sarjana Muda Sains Komputer (Rangkaian Komputer)
3.	Nurul Fazilah binti Samuri	F10	• Bachelor's Degree of Information System
4.	Ts. Nor Azian Binti Ahmad	F10	• Bachelor's Degree in Computer Science (Information System) • Professional Technologist in field Information & Computing Technology
5.	Marziana Binti Mahamud	FA6	• Diploma in Electrical Engineering (Electronics)
6.	Khairul Azizi Bin Saderi	FA6	• Diploma Interaktif Multimedia
7.	Intan Suriani Binti Abdul Razak	FA5	• Computer System Certificate And Support
8.	IlavarasanA/L Nadarajan	FA5	• Diploma KejuruteraanElektrik (Electronic) • Certificate in Electrical Engineering (Computer)
9.	Nanthakumar A/L Subramaniam	FA5	• Certificate in Computer Technology
10.	Yusri Bin Ahmad	FA5	• Professional Certificate in RF dan Microwave System • Diploma in Electrical Engineering • Certificate in Electronic Engineering Department in Computers
11.	Mohd Irwan Bin Ibrahim	F2	• Sijil Pelajaran Malaysia
12.	Siti Hasliana Binti Thalji	F2	• Bachelor's Degree in Computer Science (Software Engineering) • Diploma Teknologi Kejuruteraan Komputer • Diploma Kemahiran Malaysia Tahap 4 (Sistem Komputer)
13.	Nur Aimi Amanina Binti Mohd Zulkiffli	F1	• Diploma Kemahiran Malaysia (Teknologi Maklumat dan Komunikasi)

Licensed software

No	Software
1	Autodesk Education 2022 (3 year's Maintenance) • AutoCad (all) • Civil 3D (JKA) • Inventer Pro (JKE) • Revit (JKA) • Naviswork Managemant (JKA)
2	Autodesk Education 2023 (3 year's Maintenance) • AutoCad (JKM, JMSK) • Inventer Pro (JKM) • Fusion 360 (JKM)
3	Mastercam 2017 (JKM)
4	Microsoft Office 365
5	Microsoft Office LTSC Professional Plus 2021

List of Sports and Recreational Facility and Infrastructure

No	Facilities	Quantity	Actual
1.	Futsal Court with Roof	1 court	-
2.	Futsal Tennis Dual Function Court	2 court	-
3.	Tennis	8 court	3 court (2 *under maintenance*)
4.	Tennis Volleyball Dual Function	4 court	-
5.	Tennis Training Machine	1 unit	-
6.	Volleyball	2 court	2 court
7.	Volleyball with Roof	1 court	-
8.	Sepak Takraw	4 court	4 court
9.	Sepak Takraw Badminton Dual Function	2 court	-
10.	Badminton	4 court	3 court
11.	Football Rugby Dual Function Court	1 court	1 court (*under maintenance*)
12.	Softball	1 court	1 court (*under maintenance*)
13.	Squash Dancing Room Dual Function	2 court	1 court (*under maintenance*)
14.	Ping Pong	1 table	2 table
15.	Taekwondo Mat	1 court	1 court
16.	Badminton Mat	1 court	2 court
17.	Netball	4 court	1 court
18.	Flexible netball	2 Set = 4 tiang	1 set = 2 pole
19.	Archery	1 court	1 court
20.	Archery Equipments	Samick Mind = 3 unit Compound = 2 unit	2 unit (*under maintenance*) 1 unit (*under maintenance*)
21.	Modern Music Studio	1 room	1 room
22.	Petanque	1 court = 4 unit	1 court = 4 unit (*under maintenance*)
23.	Basketball	2 court	1 court (*under maintenance*)

Indoor Social Game		Quantity	Actual
1.	Chess	15 unit	15 unit
2.	Scrabble	15 unit	15 unit
3.	Sahibba	15 unit	15 unit
4.	Carom Target	10 unit	10 unit

Appendix C6-3b (i): Details of PSA Vehicle

No	Vehicle	Quantity
1.	Car	2
2.	Van	1
3.	Pajero	1
4.	Lorry	1
5.	Bus	3
6.	Mini bus	1
7.	Coaster	1

No	Name	Position
1.	Hamdan Bin Abdul Ghani	Lead Driver
2.	Samsur Kamal Bin Othman	Driver
3.	Mazahar Bin Ismail	Driver
4.	Mohammad Abu Hamzalah Bin Baharun	Driver
5.	Muhd Nizam Bin Ismail	Driver
6.	Shahrul Rohaizad Bin Jaiman	Driver
7.	Wan Razali Bin Tajuddin @ Wan Yunus	Driver
8.	Muhammad Nurfaiz Bin Ismail	Driver

Objectives of TECC

Objectives	Description
1. Enhance Learning Outcomes	Improve student engagement and comprehension through interactive and collaborative technology.
2. Foster Innovation	Encourage creative problem-solving and innovative thinking among students and faculty.
3. Support Collaboration	Facilitate seamless collaboration among students, educators, and external partners
4. Integrate Technology	Seamlessly incorporate cutting-edge technology into the curriculum to allow the learning experience to break away from traditional borders.
5. Skill-Based Training	Utilize virtual reality (VR) and augmented reality (AR) to simulate real-world environments for hands-on skill development in a safe, controlled setting
6. Digital Literacy	Integrate digital literacy into the curriculum to ensure students are proficient in using technology and can navigate digital environments effectively.

The generic list of equipment

Equipment	Description
Smart TV c/w Stand	A mobile and versatile display solution, perfect for showcasing educational content, interactive applications, or VR explorations in high definition. The stand facilitates easy relocation, making it ideal for dynamic classroom layouts.
Workstation	High-performance computing stations designed to support the intensive requirements of VR and interactive 3D applications. These workstations facilitate seamless running of complex simulations and design software, essential for immersive learning experiences.
VR Devices	Cutting-edge virtual reality hardware that allows users to dive into fully immersive 3D environments for exploration, simulation, and interactive learning. These devices are central to experiencing virtual reality's full potential in education.

Green Screen c/w Active Sound System + Motion Capture + Studio Lighting	A comprehensive setup for creating immersive virtual content, including video production and interactive VR simulations. The green screen enables background customization, motion capture records precise movements, and studio lighting ensures optimal visibility, all complemented by high-quality sound.
Software for Interactive 3D Virtual Reality (VR)	Specialized software platforms that allow educators and students to create, manipulate, and experience 3D virtual environments. These tools are crucial for developing interactive VR content tailored to specific learning objectives.
Wireless Presenter	An essential tool for educators, facilitating smooth navigation through presentations and interactive content. It enhances the delivery of lessons and presentations, allowing for a more engaging and fluid educational experience.
Video Presentation Module	A dedicated setup for creating and displaying video presentations of projects, findings, or educational content. This module supports multimedia learning, enabling students to express their ideas visually and audibly.
Computer Tables and Chairs	Ergonomically designed furniture that provides comfortable and supportive seating for students and educators, optimizing engagement and productivity during long hours of learning and project development.
Discussion Magnetic Wall Glasses	Innovative spaces for brainstorming and collaborative work, these magnetic glass walls support visual thinking and creative problemsolving, allowing ideas to be visually mapped out and shared.
Digital Wall Panel	An interactive display that enhances learning through touch and engagement, allowing users to interact with digital content in a tactile manner. It serves as a dynamic tool for instruction and collaboration.
Artificial Grass for Time-Out Area	A designated relaxation area featuring artificial grass to create a calming, natural environment within the educational space. This area is designed to offer students a mental break, promoting wellbeing and creativity.
Discussion Table set	A furniture set designed to facilitate group discussions and collaborative work, enhancing the interactive learning experience. The layout encourages open communication and teamwork among students.
Ergonomic Seat	Comfortable and health-conscious seating options that support proper posture and reduce strain during extended periods of study or project work, essential for maintaining focus and well-being in an educational setting.

Layout of TECC

KEMENTERIAN PENDIDIKAN TINGGI
MINISTRY OF HIGHER EDUCATION
Bahagian Biasiswa
Scholarship Division
Aras 2, No. 2, Menara 2
Jalan P5/6, Presint 5
62200 PUTRAJAYA
MALAYSIA

Tel : 603-8870 6000
Hotline : 603-8888 1616 / 6787
Faks : 603-8870 6839

TERIMA
26 OCT 2023
Pejabat Pengarah
Politeknik Sultan Salahuddin
Abdul Aziz Shah

Ruj. Kami : KPT-700/3/1/1 JLD 2(42)
Tarikh : 24 Oktober 2023

SENARAI EDARAN SEPERTI DI LAMPIRAN

YBhg. Datuk/Dato'/Prof./Dr./Tuan/Puan,

PELAWAAN KEMUDAHAN PENAJAAN UNTUK PEGAWAI PENDIDIKAN PENGAJIAN TINGGI DI PERINGKAT SARJANA DAN KEDOKTORAN (PH.D) SEPENUH MASA BAGI SESI PENGAJIAN 2024/2025 KEMENTERIAN PENDIDIKAN TINGGI

Dengan hormatnya saya diarah merujuk kepada perkara di atas.

2. Sukacita dimaklumkan, Kementerian Pendidikan Tinggi (KPT) akan menawarkan penajaan **Hadiah Latihan Persekutuan (HLP)** bagi **Pegawai Pendidikan Pengajian Tinggi Sesi Pengajian 2024/2025.**

3. Sehubungan itu, pegawai-pegawai yang berminat dan berkelayakan berdasarkan kepada syarat-syarat permohonan seperti di **Lampiran A**, dialu-alukan untuk memohon secara atas talian di pautan **https://biasiswa.mohe.gov.my/hlp/index_login.php** melalui portal rasmi Kementerian Pendidikan Tinggi www.mohe.gov.my. Permohonan hendaklah dibuat secara atas talian sepenuhnya dengan mengikuti panduan yang telah disediakan dan tiada sebarang dokumen perlu dihantar secara manual ke Bahagian Biasiswa bagi permohonan tersebut. Tawaran ini akan dibuka untuk permohonan mulai 24 Oktober 2023 hingga 3 Disember 2023.

4. Permohonan yang diterima selepas jam 5 petang, 3 Disember 2023 tidak akan **diproses dan sebarang rayuan tidak akan dipertimbangkan.** Sebarang pertanyaan berkaitan tawaran ini boleh hubungi:

PEJABAT PENGARAH SULTAN SALA...
PIC | TINDAKAN | /
UNTUK PERHATIAN
CADANGAN
SILA HADIR
SELARASKAN
MAKLUM BALAS
MAKLUMAN
FAIL
26/10

Seksyen Latihan Dalam Perkhidmatan
Bahagian Biasiswa
Kementerian Pendidikan Tinggi
Aras 2, No. 2, Menara 2
Jalan P5/6, Presint 5
62200 PUTRAJAYA

(u.p : Puan Nur Farhana binti Baharuddin / Puan Mazalina binti Ali / Cik Nor Azlinda binti Azahar / Puan Siti Shamimi bin Sadri)
No. Tel : 03-8888 1616 / 03-8870 5011 / 03-8870 6338 / 03-8870 4950 / 03-8870 6361
Faks : 03-88706839
E-mel : hlp@mohe.gov.my

Sekian, terima kasih.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(FAIZUL RAHMAN BIN SJAFRI)
b.p. Ketua Setiausaha
Kementerian Pendidikan Tinggi
No. Tel : 03-8870 6344
Emel : faizul.sjafri@mohe.gov.my

SENARAI EDARAN

1. Ketua Pengarah
   Jabatan Pendidikan Tinggi
   Kementerian Pendidikan Tinggi

2. Ketua Pengarah
   Jabatan Pendidikan Politeknik dan Kolej Komuniti
   Kementerian Pendidikan Tinggi

3. Setiausaha Bahagian
   Bahagian Pengurusan Sumber Manusia
   Kementerian Pendidikan Tinggi

4. Ketua Seksyen Hal Ehwal Korporat
   Unit Komunikasi Korporat
   Kementerian Pendidikan Tinggi

PELAWAAN KEMUDAHAN PENAJAAN UNTUK
PEGAWAI PENDIDIKAN PENGAJIAN TINGGI (PPPT) BAGI
HADIAH LATIHAN PERSEKUTUAN (HLP) SECARA SEPENUH MASA
BAGI SEMESTER 1 2024/2025

Kementerian Pendidikan Tinggi menawarkan penajaan Hadiah Latihan Persekutuan (HLP) dengan kemudahan Cuti Belajar Bergaji Penuh (CBBP) bagi mengikuti pengajian kursus-kursus jangka panjang secara **SEPENUH MASA** di peringkat **Sarjana dan Ph.D di Institusi Pengajian Tinggi Awam di Dalam Negara dan Universiti Luar Negara** bermula Sesi Pengajian **Semester 1 2024/2025**.

Tawaran ini dibuka khusus untuk Pegawai Kumpulan Pengurusan dan Profesional didalam skim perkhidmatan Pegawai Pendidikan Pengajian Tinggi (PPPT) Skim DH di Politeknik, Kolej Komuniti dan Kementerian Pendidikan Tinggi (KPT) sahaja.

Bidang-bidang yang ditawarkan adalah berdasarkan unjuran keperluan yang dikeluarkan oleh Bahagian Kompetensi dan Peningkatan Kerjaya, Jabatan Pendidikan Politeknik dan Kolej Komuniti seperti berikut:

a. Peringkat Sarjana Dalam Negara (Lampiran 1)
b. Peringkat Ph.D Dalam Negara (Lampiran 2)
c. Peringkat Sarjana Luar Negara (Lampiran 3)
d. Peringkat Ph.D Luar Negara (Lampiran 4)

Calon-calon yang berminat hendaklah memohon secara atas talian sepenuhnya di pautan berikut : **https://biasiswa.mohe.gov.my/hlp/index.php** atau melalui portal rasmi Kementerian Pengajian Tinggi (rujuk **Pautan Pantas > Permohonan / Semakan Dibuka**). Permohonan akan dibuka mulai **24 Oktober 2023 jam 5.00 petang hingga 3 Disember 2023 jam 5.00 petang**. Permohonan yang tidak menepati syarat yang ditetapkan, mengandungi maklumat yang tidak benar, tidak lengkap, dokumen sokongan yang tidak disahkan atau borang permohonan yang lewat diterima tidak akan dipertimbangkan. Hanya calon yang layak dan melepasi tapisan sahaja akan dipanggil untuk urusan temu duga.

SYARAT-SYARAT & KELAYAKAN

A. SYARAT UMUM

Pegawai-pegawai yang diperakukan untuk mengikuti kursus ijazah lanjutan hendaklah mempunyai pengetahuan, kemahiran, pengalaman, minat dan perwatakan/sikap yang sesuai bagi menentukan kejayaan dalam pengajian dan seterusnya berupaya memberi sumbangan ke arah meningkatkan keberkesanan perkhidmatan dan organisasi. Mereka juga hendaklah mempunyai kelayakan ijazah pertama yang diiktiraf atau kelayakan yang setaraf dengannya.

SYARAT KHUSUS

i. Pada **Tahun 2024**, pegawai mestilah berumur tidak lebih daripada **45 tahun** bagi pengajian **peringkat kedoktoran (Ph.D)** dan **50 tahun** bagi pengajian **peringkat Sarjana**;

i. Telah disahkan dalam perkhidmatan terkini pada tarikh tutup permohonan;

ii. Telah berkhidmat sekurang-kurangnya selama tiga (3) tahun dalam skim perkhidmatan Pegawai Pendidikan Pengajian Tinggi (PPPT) (**gred 41 dan ke atas)** pada tarikh tutup permohonan;

iv. Mencapai purata **markah Laporan Nilaian Prestasi Tahunan (LNPT) purata 85% ke atas** bagi tempoh **tiga (3) tahun skim perkhidmatan terkini secara berturut- turut (2020, 2021 & 2022). Penilaian setahun LNPT hendaklah genap 12 bulan**;

v. Kursus yang diikuti adalah berkaitan dengan tugas pegawai/bidang pengajian Sarjana Muda yang telah diikuti dan diperlukan demi kepentingan perkhidmatan;

vi. Memiliki Ijazah Sarjana Muda bagi pengajian peringkat Sarjana dan Ijazah Sarjana yang baik bagi pengajian peringkat Ph.D (pencapaian CGPA minimum 2.50);

vii. Belum memiliki kelayakan Ijazah Lanjutan di peringkat yang sama tanpa mengira bidang pengkhususan.

viii. Mematuhi syarat genap tempoh tamat mengikuti kursus jangka panjang/pendek sebelumnya seperti yang dinyatakan dalam Pekeliling Perkhidmatan Bilangan 6 Tahun 2005 (jika berkenaan).

ix. Masih belum mendapat tempat di mana-mana institusi pengajian tinggi sama ada di luar atau dalam negara;

atau

telah mendapat tempat pengajian tetapi belum memulakan pengajian di mana-mana institusi pengajian tinggi sama ada di luar atau dalam negara (sesi pengajian perlu bermula pada Sesi Pengajian Semester 1 2024/2025);

*Tawaran HLP akan terbatal sekiranya pegawai tidak menghadiri Kursus Persediaan HLP KPT yang dianjurkan Kementerian sebelum memulakan pengajian.

x. Pegawai hanya dibenarkan memohon pengajian di peringkat Ijazah Sarjana yang menawarkan pengajian tanpa perlu mengikuti kursus pra syarat;

xi. Mematuhi syarat yang ditetapkan dalam Garis Panduan Kemudahan Cuti Belajar kepada Penjawat Awam seperti berikut:

- Pegawai yang telah mengikuti cuti belajar melebihi 12 bulan di dalam atau luar negara, boleh dipertimbangkan untuk mengikuti kursus jangka sederhana atau kursus jangka panjang yang berikutnya sama ada di dalam atau luar negara selepas genap **dua (2) tahun** tamat mengikuti kursus yang terdahulu dengan jayanya;
- Pegawai yang telah mengikuti cuti belajar kurang 12 bulan tetapi melebihi 3 bulan di dalam atau luar negara, boleh dipertimbangkan untuk mengikuti kursus jangka sederhana atau kursus jangka panjang yang berikutnya sama ada di dalam atau luar negara selepas genap **satu (1) tahun** tamat mengikuti kursus yang terdahulu dengan jayanya.

xii. Telah mengisytiharkan harta (termasuk pengisytiharan harta tambahan) dalam tempoh 5 tahun kebelakangan;

xiii. Tidak tersenarai dalam senarai hitam pinjaman PTPTN atau Tabung Pinjaman Pelajaran (TPP);

xiv. Pegawai bebas daripada sebarang penyakit kronik (Lampiran 5).

*Ahli keluarga pemohon yang dibawa bersama (pengajian luar negara) perlu bebas daripada penyakit kronik. Sekiranya laporan perubatan mengesahkan pegawai atau ahli keluarga yang dibawa bersama (pengajian luar negara) menghidap penyakit kronik seperti di Lampiran 6, penawaran HLP pegawai akan dibatalkan.

xv. Bersih daripada pertuduhan/tindakan tatatertib dan bebas daripada dakwaan Mahkamah;

xvi. Menyediakan kertas cadangan pengajian (*proposal*) dan hendaklah dimuat naik serta diserahkan kepada urus setia semasa calon menghadiri temu duga. **Kulit depan** kertas cadangan hendaklah mematuhi format seperti yang telah disediakan; dan

xvii. Syarat Tambahan bagi Permohonan Pengajian di Luar Negara (boleh diduduki selepas calon berjaya ditawarkan Hadiah Latihan Persekutuan oleh Kementerian ini).

a) Mempunyai kemahiran Bahasa Inggeris sama ada TOEFL 600 (paper-based) atau 240 (computer-based) atau 92 (internet-based) atau lulus IELTS dengan keputusan keseluruhan band 6.5. Tempoh sah laku adalah 2 tahun dari tarikh sijil dikeluarkan bagi pengajian ke Luar Negara; dan
b) Lulus tapisan keselamatan bagi penawaran ke Luar Negara.

xviii. Tempat pengajian bagi dalam negara adalah seperti di Lampiran 6 dan bagi penawaran ke luar negara, tuan/puan dikehendaki mendapat tempat pengajian di institusi yang mengenakan yuran percuma/yuran minimum, penajaan lebih fokus berasaskan kepakaran universiti pengajian dan

pemilihan tempat pengajian mendapat penarafan daripada *QS World University Rankings, Times Higher Education World University Rankings atau Academic Ranking of World Universities / Shanghai Rankings.*

*Tuan/puan dikehendaki mengemukakan surat tawaran penuh daripada institusi pengajian bersama-sama Borang Permohonan Cuti Belajar [KPT (HLP) 1A/06] kepada Kementerian ini setelah ditawarkan surat tawaran bersyarat daripada Kementerian ini.

TANGGUNGJAWAB KETUA JABATAN

i. Ketua Jabatan adalah dinasihatkan supaya membuat semakan yang teliti dan memberi sepenuh perhatian kepada syarat-syarat yang ditetapkan. Sehubungan itu, adalah menjadi tanggungjawab Ketua Jabatan untuk memperakukan pegawai-pegawai yang sesuai serta memenuhi syarat- syarat yang ditetapkan.

ii. Sebelum mengemukakan pencalonan, Ketua Jabatan adalah diminta untuk membuat perancangan yang teliti dan hanya memperakukan calon yang boleh dilepaskan oleh Ketua Jabatan pada tahun 2024 kelak. Sekiranya kesemua calon yang diperakukan oleh Jabatan berjaya ditawarkan HLP ini, Ketua Jabatan berkenaan adalah dikehendaki memberi pelepasan kepada mereka untuk menjalani pengajian.

PEMILIHAN

i. Hanya permohonan yang lengkap dan memenuhi syarat-syarat ditetapkan sahaja akan dipanggil untuk sesi temu duga.

ii. Pemilihan muktamad akan diputuskan oleh Mesyuarat Jawatankuasa Kerja Penajaan, Kementerian Pengajian Tinggi

PERMOHONAN

Calon-calon yang berminat hendaklah memohon secara atas talian sepenuhnya di talian sepenuhnya di pautan berikut : **https://biasiswa.mohe.gov.my/hlp/index.php** atau melalui portal rasmi Kementerian Pengajian Tinggi (rujuk **Pautan Pantas > Permohonan / Semakan Dibuka**). Kesemua dokumen sokongan serta borang perakuan Ketua Jabatan hendaklah dimuatnaik kembali dan permohonan adalah dianggap lengkap dan telah dihantar apabila pemohon menekan butang 'Sah & Hantar' pada paparan yang disediakan. Permohonan akan mula dibuka pada **24 Oktober 2023 jam 5.00 petang hingga 3 Disember 2023 jam 5.00 petang. Permohonan yang diterima selepas jam 5.00 petang tidak akan diproses. Sebarang rayuan tidak akan dipertimbangkan.**

Senarai salinan dokumen sokongan yang diperlukan ialah seperti berikut :

BIL	DOKUMEN	FORMAT	SAIZ MAKSIMA
1.	Gambar berukuran pasport	JPEG	280kb
2.	Rancangan Penyelidikan (proposal) yang disahkan *Ketua Jabatan / Penyelia (Lampiran A)	PDF	1.0mb
3.	Transkrip Ijazah Pertama / Sarjana ATAU kedua-duanya (disahkan)	PDF	300kb
4.	Lampiran Senarai Tugas Terkini (disahkan) (Lampiran B)	PDF	320kb
5.	Borang Perakuan Ketua Jabatan	PDF	400kb
6.	Pelan Pengajian	PDF	1.0mb

Sila rujuk pada pautan **Borang** sebagai panduan :

- Panduan mengimbas dokumen sokongan
- Panduan menukar format dokumen ke format PDF

PERTANYAAN

Untuk sebarang pertanyaan, sila hubungi :

Seksyen Latihan Dalam Perkhidmatan
Bahagian Biasiswa
Kementerian Pendidikan Tinggi
Aras 2, No. 2, Menara 2,
Jalan P5/6, Presint 5,
Pusat Pentadbiran Kerajaan Persekutuan
62200 PUTRAJAYA

(u.p. : Puan Nur Farhana binti Baharuddin / Puan Mazalina binti Ali / Cik Nor Azlinda binti Azahar / Puan Siti Shamimi binti Sadri)
No. Telefon : 03-8888 1616 / 03-8870 5011 / 03-8870 6338 / 03-8870 4950 / 03-8870 6361
Faks : 03-8870 6839
E-mel : hlp@mohe.gov.my
Untuk masalah **teknikal permohonan**, sila hubungi :
No. Telefon : 03-8870 6319 / 03-8870 6317

ENGINEERING TECHNOLOGY ACCREDITATION COUNCIL

External Examiner Report

PROGRAMME DETAILS	
PROGRAMME NAME	Diploma in Mechanical Engineering
IHL NAME	Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)

AUDITOR'S DETAILS	
NAME	Associate Prof. Dr. Raja Izamshah Bin Raja Abdullah
TELEPHONE NO.	013-3921979
EMAIL	izamshah@utem.edu.my
DATE OF VISIT	2-3 Oct 2023

General Remarks

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA), previously known as Politeknik Shah Alam, is an educational institution dedicated to fulfilling the semi-professional needs of the country in various industries. PSA was established in 1997 by the Malaysian Ministry of Education under the Department of Polytechnic and Community College Education (DPCCE).

PSA has successfully obtained gold award for Asian Pacific Accreditation and Certification Commission (APACC) accreditation started from 2015. The accreditation covered seven criteria which are Governance and Management, Teaching and Learning, Faculty and Staff, Research and Development, Extension, Consultancy and Linkages, Resources, and Support to Students. In addition, PSA has also opted for MS ISO quality management system since the year of 2000 (MS ISO 9002:1994, MS ISO 9001:2000, MS ISO 9001:2008 and MS ISO 9001:2015, ISO 45001:2018), starting from that point PSA has managed to renew its certification.

Diploma in Mechanical Engineering (DKM) programme has been offered at Mechanical Engineering Department, PSA since 2002. This programme is led by a Head of Programme and supported by 25 competent staff.

The purpose of external examiner visit is to evaluate Diploma in Mechanical Engineering (DKM) programme conducted at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA). The external examiner evaluation consists of related information of the programme covering the seven criteria stated in the ETAC's Engineering Technician Programme Accreditation Manual 2020.

The current evaluation was conducted on 2nd and 3rd October 2023 at Department of Mechanical Engineering, PSA. The commitment of the IHL on this programme is well reflected by the attendance of the top management of the department and academic staff during the opening and exit meetings. In general, the curriculum structure and contents cover the depth and breadth of the mechanical engineering technician education which

refers to the full span of knowledge of subject and specific topics are focused upon, amplified and explored. The analysis during the external examiner visit indicates that the programme **has satisfied all eight (8) qualifying requirements for ETAC's Engineering Technician Programme Accreditation**.

CRITERION 1: PROGRAMME EDUCATIONAL OBJECTIVES **(U = Unsatisfactory, S = Satisfactory, G = Good)**				
Performance Indicators				
1.1	**Statements are well-defined, measurable and achievable.**	**U**	**S**	**(G)**
	Comment: 4 PEOs were formulated to define attributes of the graduates after 3-5 years after graduation. The PEOs stated in the SAR are formulated appropriately and fit into the definition of a programme objective. The PEOs are associated with the Vision and Mission of Department of Polytechnic Education and other stakeholders' requirements.			
1.2	**Statements are well published and publicised.**	**U**	**S**	**(G)**
	Comment: The PEO statements have been extensively published in the academic handbook and also available on the Department website. In addition, other publicised medium includes posters, bunting and hand-outs were found at strategic locations within the Department.			
1.3	**Clear linkage between Programme Educational Objectives and Programme Outcomes.**	**U**	**S**	**(G)**
	Comment: The PEOs were aligned and mapped to the Vision, Mission and the Stakeholders of the IHL. The linkage between PEO and PO has been established through a relation matrix presented during the visit.			
1.4	**Important stakeholders provide inputs in the process.**	**U**	**S**	**(G)**
	Comment: The process to establish and review of PEOs with the appropriate stakeholders are in place. The review is carried out based on Stakeholders' feedback. In addition, appointed IAP's and external examiner are involves in reviewing and improving the program through a specific meeting.			
1.5	**A documented and effective process, involving programme stakeholders, for the periodic review and revision.**	**U**	**S**	**(G)**
	Comment: Periodic review and revision of the statement are well-documented in the form of minute of meeting and report of the above-mentioned meetings.			

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	1. Vision, Mission, PEOs and POs are clearly mapped.
Weakness	
Concern	
Opportunity for Improvement	

CRITERION 2: PROGRAMME OUTCOMES **(U = Unsatisfactory, S = Satisfactory, G = Good)**				
Performance Indicators				
2.1	**Statements are well-defined, measurable and achievable.**	**U**	**S**	**G**
	Comment: There were 12 POs statements defined for the programme. They cover the general 12 graduate attributes as stipulated in the Engineering Technician Accreditation Standard 2020, as the expected attainment of an engineering technology student within the practice-oriented learning environment. The POs were mapped and linked to the programme PEOs accordingly. The PO statements sufficiently cover the requirements for engineering technician diploma programme inclusive of four (4) POs related to the cognitive domain, two (2) POs related to the psychomotor domain and the remaining six (6) POs related to the affective domain that reflects to engineering knowledge, well-defined problem analysis, design solution for well-defined engineering technology problem, investigation, modern tool usage, the engineer and society, environment and sustainability, ethics, individual and team work, communication, project management and finance and life-long learning.			
2.2	**Statements are well published and publicised.**	**U**	**S**	**G**
	Comment: As with PEOs, PO statement are well publicised in academic handbook and also available on the Department website. In addition, other publicised medium includes posters, bunting and hand-outs were found at strategic locations within the Department.			
2.3	**A documented process for assessing and evaluating the extent to which the Programme Outcomes are being attained has been established.**	**U**	**S**	**G**
	Comment: The processes and procedures to formulate and review of the PO are in place. Mapping of assessments components (i.e. coursework: assignment, test, quiz and final exam) to course outcomes (COs), courses to POs are in place. The IHL has set one course to several PO with certain percentages. The attainment of PLOs is shown to be supported by the assessment and attainment of CLOs from the downstream end, and supporting the evaluation of PEOs attainment on the upstream end. Based on findings during the visit also, different reports were used by the lecturer, course leader and programme coordinator for the purpose of Continuous Quality Improvement (CQI) at the end of semester using Online System platform namely Students Assessment System (SAS) and i-Exam System that enable the lecturers and course coordinator to link the CO and PO. This enable the attainment measurement be linked.			

	The IHL has structured a system of Three (3) CQI loops i.e., the inner loop: at Course Level – analysing CO attainment, the middle loop: at Programme Level – analysing PO attainment, the outer loop: at Programme Level – analysing PEO attainment. It is evidenced that CQI analysis is conducted and monitored by the IHL for all PO attainments (direct/indirect measure).			
2.4	**Important stakeholders provide inputs in the process.**	**U**	**S**	**G**
	Comment: The process to establish and review of POs with the appropriate stakeholders are in place. The review is carried out based on Stakeholders' feedback. In addition, appointed IAP's and external examiner are involves in reviewing and improving the program through a specific meeting.			
2.5	**A documented and effective process, involving programme stakeholders, for the periodic review and revision.**	**U**	**S**	**G**
	Comment: The involvement of external and internal stakeholders in the formulation, assessment, evaluation is in place. The review is carried out based on Stakeholders' feedback. In addition, involvement with the appointed Industrial Advisory Panels (IAP) and External Examiners (EE) also was observed through minutes of meeting and reports. The measurements of the PO are performed at every semester. This is then submitted to Department of Polytechnic Education to be reviewed. This included the analysis and the performance of the course at the end of the semester. Exit Survey Form was conducted for the students at the end of the program to evaluate student's perception on their achievement of each of the PO relating to their respective program. The Exit Survey Form also serves as an opportunity for students to provide feedback on their learning experience.			

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	1. Sistem Pengurusan Maklumat Politeknik (SPMP) and i-Exam System platform is a very commendable system to generate CO and PO performance.
Weakness	
Concern	
Opportunity for Improvement	

CRITERION 3: ACADEMIC CURRICULUM
(U = Unsatisfactory, S = Satisfactory, G = Good)

Performance Indicators

SLT credit units.

a) Total number of SLT credit units.	**U**	**S**	**G**

Comment:

The total number of SLT credit units is 94 which satisfies the requirement as detailed in ETAC Standard 2020 to have a minimum of 90 credit units.

b) Number of SLT credit units for engineering technician courses.	**U**	**S**	**G**

Comment:

65 SLT credit units are allocated for engineering technician courses, including 5 credits for FYP and 10 credits for industrial training.

c) Number of SLT credit units for other related general education courses	**U**	**S**	**G**

Comment:

29 SLT credit units are allocated for other related general education courses. This number is sufficient to complement the technical contents of the curriculum.

The Curriculum

a) Programme Structure, Course Contents, and Balanced Curriculum	**U**	**S**	**G**

Comment:

The programme structure covers all technical and nontechnical attributes listed in the Programme Outcomes which in line with PO that are outlined by ETAC. The programme has the breadth and depth required for engineering technician and has adopted OBE approach. The curriculum structure and its contents reflect the knowledge to be imparted on the student studying in Diploma in Mechanical Engineering specialization.

The programme is conducted over 3 years' period, equivalent to 6 semesters. There are 2 academic semesters: each with duration of 14 weeks, in each academic year excluding examination week and inter-session break. The structure of the curriculum complies with the requirement of ETAC Standard 2020.

Course contents are adequate with time and reflects the technological and knowledge development in the field of mechanical engineering. The course contents is balanced and includes all technical and non-technical attributes listed in the POs which provides students with ample opportunities for analytical, critical, constructive and creative thinking. The curriculum integrates theory with practice through adequate exposure to laboratory work and professional engineering practice.

b) Programme Delivery and Assessment Methods	**U**	**S**	**G**

Comment:

There is a good mix of delivery modes including lectures, tutorials, problem-based learning, project-based learning, project-oriented problem-based learning, laboratory works, design project, final year project, industry talk and industrial training. These include lectures, tutorials, group learning, interaction, lab works, industry talk, projects etc. The delivery method is appropriate and able to prepare the student for long life learning.

Students are assessed by different methods throughout the programmes with proper rubric towards the Programme Outcome. Theses assessment includes Theory Test, Final Examination, Quiz, Assignment, Presentation, Oral, Report, Reflection, Peer Assessment, Practical test, Practice Oriented Evaluation, Project and others. PO and CO mapping is prepared well in each course.

c) Practice-oriented components	**U**	**S**	**G**

Comment:

In the current curriculum, the presence of practice-oriented components is evident during the visit. Some courses have embedded practical elements and assessments, which constitute a total of 52% for practice-oriented components in engineering technology-related courses. In addition, student need to undergo for compulsory 10-credit-industrial training which exposes the students to an actual engineering practice at various industry/company locally or internationally.

Most of the theoretical courses in the programme are complemented by practical laboratories and workshops. In these practical activities, students work in a group of 3-4 and each course would normally be complemented by a few practical and laboratory tasks.

The assessment of practical and laboratory was made through psychomotor skills, observed during each session, together with the reports. Also, the psychomotor was also tested for each student through proper rubrics. The overall practice-oriented component of the programme is observed to be generally sufficient and satisfactory.

d) Final-Year Project	**U**	**S**	**G**

Comment:

Final Year Project (FYP) is compulsory for Diploma in Mechanical Engineering. This FYP course enables the students to apply their prior knowledge and skills, generate ideas into their creativity, innovation and problem solving into marketable projects. FYP is divided into two courses namely Project I (DJJ40182) offered in semester 4 and Final Year Project II (DJJ50193) offered in the 5th semester. Total 5 credits are allocate for the FYP and comply with the requirement of ETAC Standard 2020.

Mapping of Course Outcomes (COs) and Programme Outcomes (POs) of the FYP is observed to be generally sufficient and satisfactory. Evaluation for FYP by SV and panel of examiners divided into four categories: student's performance, student's logbook, student's report, and student's project presentation. SV will evaluate his/her student's performance, student's logbook, and student's report. The panel of examiners will evaluate the student's report and student's project presentations. After evaluating students, SV and examiners are responsible for submitting student marks to FYP Coordinator(s) using a suitable platform decided by Coordinator(s). Assessment is done by the SV and Panel of Examiners separately and discretely.

The FYP generally sufficient with the title, contents and elements that relate with the current engineering technology in mechanical engineering area. Students have shown the ability to use modern tools, especially computers and multimedia technology.

Department of Polytechnic has published a guidelines on the details planning, implementation and reporting of the final-year project that can be referred to 'Buku Panduan Pelaksanaan Projek Pelajar (Program Diploma) Politeknik Malaysia Edisi 2021' (Students' Project Guide Book (Diploma Programme) Malaysia Polytechnic 2021 Edition).

e) Industrial Training / WBL	**U**	**S**	**G**

Comment:

The Industrial Training course for this programme is DUT600610 Engineering Industrial Training, which is compulsory with 20 weeks' duration in the 6th semester, as a part of graduation requirements. The SLT credit allocated for this course is 10 SLT credits, which is good. All necessary information and assessment forms are extensively accessible through the IHL system and effective flow is evident during the visit. The overall Industrial Training process, guidelines and references for the industrial training course are visible and available for students. Overall, the assessment of the Industrial Training technical report is found to be satisfactory with a systematic marking system by both industry supervisors and visiting lecturers. Additionally, it provides exposure and experience to students in terms of mechanical engineering and technology, effective communication, practice social skills, teamwork and leadership, policies, safety procedures, rules and regulations, professional perspective and reporting. This course will build enthusiasm and a proactive attitude in students and hence boost their confidence to become a competence's engineers.

f) Training in Engineering Practice	**U**	**S**	**G**

Comment:

Training in engineering technology practice is observed through industrial visits and series of talk by the industry. The IHL has organized external industry talks and industry visits for the student in the programme. Based on documented evidence and interview with students from all years, it is noted that the activities for external industrial exposure were conducted. The number of industrial talks and seminars are sufficient. The programme organized talks and seminars to provide students with evolving technologies. External speakers from industries and alumni were invited to give talks regarding topics related to problems and issues in real and current working situations.

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	
Weakness	
Concern	
Opportunity for Improvement	

CRITERION 4: STUDENT (U = Unsatisfactory, S = Satisfactory, G = Good)			
Performance Indicators			
Student Admission			
a) Entry requirements (Academic)	**U**	**S**	**G**
Comment: The processes of student admission are described in detail in by the IHL. Students entering (entry requirements) the programme followed the criteria set in the standard with adequate mathematics and natural sciences or their equivalent. Student admission for the DKM programme is carried out twice a year, in June and December respectively. Both intakes process is done using online application procedures. Both intakes application is done through Centralised Admission Agency (UPU) at the Ministry of Education via the portal while application for the December intake is opened via the Student Admission Division portal at http://ambilan.mypolycc.edu.my . Admission requirements and all information related to admission can be obtained from the student admission portal at http://ambilan.mypolycc.edu.my.			
b) Transfer Policy/Selection Procedures/Appropriateness of arrangements for Exemptions from part of the programme	**U**	**S**	**G**
Comment: The policies and processes for credit transfer and course exemption are outlined in the Guidelines for Garis Panduan Pindahan Kredit & Pengecualian Kursus Program Pengajian Politeknik Edisi 2020 (Credit Transfer and Course Exemption for Polytechnic Programmes) edition 2020.			
Student Development			
a) Student counselling	**U**	**S**	**G**
Comment: The counselling and student support unit at IHL level offers professional counselling services to the students. There are three counsellors available with the primary objective to provide counselling services to the students along with the IHL's aspiration to produce a competent student.			
b) Workload	**U**	**S**	**G**
Comment: Student SLT is subjected to 15-18 credits per semester, with exception of industrial training which is 10 credits in the final semester. This is a balance and satisfactory SLT that enable student to involve in extracurricular activities. The average loading for student is 18 SLT credits. Students are required to get permission from academic advisor to permit enrolment of more than 21 or less than 12 credit hours per semester. This is also verified from the interview session with the student, and these satisfy the requirement as stipulated in the ETAC			

Standard 2020. In general, student workload is considered satisfactory and proven through interviews session with students.

c) Enthusiasm and motivation	U	S	G

Comment:

All interviewed students are found to be enthusiastic and motivated as observed during the interview session. The programme provides diversified teaching and learning activities, including e-learning. Based on the student's interview, most of them satisfied with the teaching-learning environment.

d) Co-curricular activities	U	S	G

Comment:

There were adequate Co-curricular activities through student development section throughout the programme in providing students with experience in developing holistic student. Students show commendable participation in extracurricular activities.

e) Observed attainment of Programme Outcomes by students	U	S	G

Comment:

Throughout the interview session with student representatives from Year 1 to Year 3, it was observed that the attainment of Programme Outcomes by students was found to be satisfactory. Moreover, they are aware on the reflect of the BEM accreditation result to their future career.

Students in Year 1 to 3 are aware and understand the approach of Outcome-Based Education (OBE) in their programme and what they are supposed to achieve at the end of their programme. It was observed that the students were well verse brief in the OBE concept and its advantages. The students can explain what OBE, CLO and PLO in their own understanding and is able to share their learning experience in IHL. The interviewed students demonstrated the achievement of the POs in terms of their knowledge and their ability to response and communicate effectively. Their awareness on career development as a professional is satisfactory.

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	
Weakness	
Concern	
Opportunity for Improvement	

CRITERION 5: TEACHING AND SUPPORT STAFF
(U = Unsatisfactory, S = Satisfactory, G = Good)

Performance Indicators

Teaching Staff

a) Number and Competency of Teaching staff	U	S	G

Comment:

DKM programme is supported by 25 competent teaching staff with more than 7 and maximum 35 years of teaching experience in the Engineering field with 3 PhD, 5 Master's degree holder, 14 of them have Bachelor's degree and 3 Diploma holder thus fulfilling the minimum ETAC requirement of 6 full-time academic staff for a programme. In addition, most of the teaching staff hold additional professional certificate such as Sijil Kemahiran Malaysia and Autodesk.

b) Qualification, industrial experience & development	U	S	G

Comment:

The number of full-time academic staff and their competencies is sufficient to cover all the courses in the programme. Teaching staff are always being encouraged to develop themselves through trainings managed by the Training and Continuing Education Unit (ULPL) of PSA such as in-service courses, PPK courses, CPCM courses, Industrial Attachment and Professional Industrial Certification. They are also encouraged to pursuit their study under the HLP schemes offered by the MOE with approval from Public Service Department.

c) Research/publication/consultancy	U	S	G

Comment:

The research activities were constantly promoted through the by the Research, Innovation and Commercialisation Unit of PSA. The unit always encourages more research done by the staff through research funds or grants such as PPRN and FRGS specifically allocated by the government of Malaysia to cultivate innovation culture amongst Malaysians. Apart from that, this unit also conducts seminars and colloquiums to provide comprehensive exposure for the staff, and encourage active participation and publication of research as well as innovation. It was evidently found during the visit, every DKM staff has moderate participation in either research, publication and consultancy.

d) Industrial involvement	U	S	G

Comment:

Staff are provided with the opportunity to establish active and close rapport with the industry in various disciplines. A list of staff and their involvement with the industry were observed during the visit. In addition, external qualified speakers are also invited from industries/public bodies to deliver lectures on experience/ engineering ethics/ professionalism for the students and academic staff.

e) Teaching load/contact hours	U	S	G

Comment:

Teaching staff of the programme teach courses and practical work with a minimum contact hour for each staff is 16 hours per week as stated in the Pekeliling Perkhidmatan Bilangan 33 Tahun 2007 (Service Circular No. 33 Year 2007). In order to ensure the effectiveness of their teaching and learning process, each staff is responsible to teach not more than three different theory courses in a semester.

f) Motivation and enthusiasm	U	S	(G)

Comment:

All staff are motivated and satisfied with their work environment from interview feedback. All the interviewed academic staff reported that they are satisfied with the working environment and that their welfare is well taken care.

g) Awareness of the Outcome-Based approach to education	U	S	(G)

Comment:

IHL has conducted several series of OBE related courses. Based on interviews, all academic staff understand and implement OBE in their teaching and learning. All academic staffs are directly responsible for all academic activities, including the laboratory sessions. There is evidence of plan for improvement of courses at the end of the semester after student's results has been generated. This indicated that the OBE approach has been the norm practice in the institution.

Support Staff (Laboratory and Administration)

a) Qualification and experience	U	S	(G)

Comment:

The qualification of the support staff is satisfactory to support the operation of the programme with each personnel have more than 18 and 20 years of experience.

b) Adequacy of support staff	U	(S)	G

Comment:

The programme is supported by two assistant engineer and one support staff to support mainly for the laboratory and workshop.

Development of Staff

a) Staff development	U	S	(G)

Comment:

Teaching and support staff of DKM programme are always encouraged to develop themselves through trainings managed by the Training and Continuing Education Unit (ULPL) of PSA such as in-service courses, PPK courses, CPCM courses, Industrial Attachment and Professional Industrial Certification. They are also encouraged to pursuit their study under the HLP and SLTP schemes offered by the MOE with approval from Public Service Department.

b) Staff assessment	U	S	(G)

Comment:

The yearly evaluation performance well understood by all staffs. From the interview, staff are generally aware of their annual assessment KPIs.

c) Academic staff: student ratio	U	S	(G)

Comment: The average ratio of the teaching staff to students for DKM programme is 1:10 which indicate that the programme has sufficient teaching staff to conduct the programme.			

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	
Weakness	
Concern	
Opportunity for Improvement	1. To increase number of participation of teaching staff in either research, publication and consultancy activity.

CRITERION 6: FACILITIES **(U = Unsatisfactory, S = Satisfactory, G = Good)**			
Performance Indicators			
a) Lecture rooms – quantity provided and quality of A/V	**U**	**S**	**(G)**
Comment: The number of lecture rooms and hall are found to be sufficient to run the programme. The IHL provides a strong support in the implementation of DKM. This department occupies 9 blocks of building and has separate building workshops. The teaching and learning facilities comprises of lecture rooms, laboratories, workshops, library, as well as computer and IT facilities. There are ample of instructional lecture facilities available to ascertain effective delivery of the programme. The available facilities are categorized into lecture rooms which enable the use of multimedia facilities, laboratory and a lecture hall. These facilities are located at blocks KA, KB, KC, KD, KE, KF, KG, KH and KI. There are 16 lecture rooms located at block KA building, each with an average to accommodate 30 students and 1 lecture hall with capacity of 80 students. Some lecture rooms are equipped with LCD projection systems that can be used with portable laptops, while for other rooms, portable LCD projectors and laptops are provided to further enhance teaching and learning process. Such facilities are also used for seminar sessions. Most lecture rooms are either furnished with tables and chairs, or flip chairs.			
b) Laboratory/workshop - student laboratory and equipment	**U**	**(S)**	**G**
Comment: Overall, the program possesses an adequate quantity of laboratory equipment. There is a total of 14 workshop/laboratories specifically designed to support courses and final year projects related to DKM. In terms of safety and health practices, it observed that they are being diligently followed. Clear and plentiful warning and safety signs are in place. Additionally, the policy regarding laboratory attire and safety protocols was prominently displayed during the visit and confirmed through interviews with students, academic staff, and technical support personnel.			

It also found that the first aid box is adequately stocked with medicine that is still valid. Furthermore, the fire extinguisher is in good condition and within its designated validity period.

c) IT/computer laboratory - adequacy of software and computers	U	S	(G)

Comment:

PSA ICT Unit is responsible to provide equipment, software and services related to the DKM program such as computer supplies, accessories, new software installation, periodical maintenance, repairing works, webmail services and internet access.

The IT facilities provided for the programme are adequate. There are adequate computer labs dedicated for DKM program such as AutoCad lab, CAD/CAM lab and PLC lab. All the related software (OS - Windows 7 Professional, Autodesk Inventor, Autodesk AutoCAD, Microsoft Office/Project/Visio and Adobe CC used for the programme are genuine and have valid licenses from the vendors.

d) Library/resource centre - quality and quantity of books, journals, and multimedia	U	S	G

Comment:

The library has sufficient resources of references and holds total collection includes approximately 37,530 volumes of monographs, 30 serial titles on subscription, 1500 volumes of bound serials and 2,661 units of audio-visuals. In addition to providing access to the internet, the library also subscribes to a number of online databases and electronic journals and e-books. The library uses the Library of Congress List of Subject Headings and the Library of Congress Classification Scheme to organize its collections.

The learning facilities including discussion rooms are available and adequate considering the current number of students. Library also provide facilities such as photocopying and printing services, locker, online public access catalogue, inter library loan, discussion rooms and internet access (WIFI).

e) Other supporting facilities	(U)	S	G

Comment:

The IHL provides residential colleges that can accommodate a capacity of 1272 students for every semester, health care centre, Islamic centre, cafeteria, and sickbays as well as sport and recreational facilities. Transportation is also provided for students to ensure the involvement of students in formal and informal activities. One thing to be highlighted during the facilities visit, it was observed that lack of maintenance been done on the sport facilities i.e. tennis court, futsal court, sport hall and outdoor gym. Furthermore, during the interview session, students also raised concerns regarding the sport and recreational facilities.

Comments/Remarks/Recommendations: *Unsatisfactory/~~Satisfactory~~

Strength	
Weakness	
Concern	1. To maintain on the sport facilities.
Opportunity for Improvement	

CRITERION 7: QUALITY MANAGEMENT SYSTEMS **(U = Unsatisfactory, S = Satisfactory, G = Good)**			
Performance Indicators			
Institutional Support, Operating Environment, and Financial Resources			
a) Sufficient to assure quality and continuity of the programme	**U**	**S**	**(G)**
Comment: PSA is fully sponsored by the Ministry of Education Malaysia under the Department of Polytechnic and Community College Education (DPCCE). DPCCE develops strategic plan, manages, monitors and evaluates all education programmes offered at all of its institutions. In terms of governance and management, polytechnic system is a centralised system in which policies and decisions are developed and agreed upon at the central office (DPCCE) with input and feedbacks from all institutions and major stakeholders. Hence, being a very large organisation, DPCCE and polytechnics organisational structure and its quality management system were very structured to define the hierarchy within its organization as each job, function and reporting mechanism are clearly identified towards ensuring the success of each operation and processes attain its stipulated vision and mission and allowed for future growth.			
b) Sufficient to attract and retain well-qualified teaching and support staff	**U**	**S**	**(G)**
Comment: The academic staffs are all highly motivated and enthusiastic. Most of the teaching staff have been working for polytechnic for more than 10 years which indicate the IHL capability to retain its academic staff. Procedures for promotion of staff are in place. In addition, opportunities for self-development such as industrial attachment and further studies are provided.			
c) Sufficient to acquire, maintain, and operate facilities and equipment	**U**	**(S)**	**G**
Comment: The top management commitment is well reflected in terms of the financial resources that have been allocated to run this programme. Evidence of budget proposal, and tenders of assets were sighted and found to be satisfactory. However, IHL need to apply for a budget especially for the T&L equipment and maintenance.			
Programme Quality Management and Planning			
a) System for programme planning, curriculum development, and regular review of curriculum and content	**U**	**(S)**	**G**
Comment: The academic committee is responsible for matters pertaining to teaching and learning activities especially in relation to syllabus interpretation and implementation, and curriculum review. The committee also looks into assessment matters including performance of			

students' course work, final examinations and industrial training which is rigorously monitored to ensure the attainment of its outcomes. The academic team is led by the Deputy Director (Academic) and the team members are the Heads of others Academic Departments such as Civil Engineering, Electrical Engineering, Mechanical Engineering, Information and Communication Technology, General Studies, Head of Examination Unit, and Head of Industrial Training Unit, Head of Quality Assurance & Accreditation Unit, and Head of Corporate Industrial Services & Employability Center (CISEC) Unit. Any issues related to curriculum will be discussed and the decision will be made during these meetings. Officers from the Quality Unit will be involved in the academic meetings when it is related to the quality documents and the procedures applied in teaching and learning activities.

External Assessment's Report and Advisory System

a) External examiners report and how these are being used for quality improvement	**U**	**S**	**G**

Comment:

The latest EE visits was on May 2021. Examiner input have been given relevant feedback and actions by the program. The improvement and CQI requirements based on the external examiner report has been observed during the visit. In addition, PSA is certified by SIRIM MS ISO 9001:2015 which requires undergoing surveillance audit once every year and recertification audit once in every three years. For the past two years, PSA has managed to continue with certification.

b) Advisory panel from industries and other relevant stakeholders	**U**	**S**	**G**

Comment:

The programme has strong support from the IAPs to enhance students' learning activities. IAP report is also available and actions have been taken by the program owners to address all the issues raised by the IAP. The support from the IAPs were evidence through their participation in the curriculum review process and assessment of examination. Their feedback was addressed in a specific department academic meeting.

Quality Assurance

a) System for student admission and teaching and learning	**U**	**S**	**G**

Comment:

IHL has a system in place for student admission as well as for the teaching and learning activities. These are documented in the ISO 9001 Quality Manual with the scope of providing education services at Diploma levels in the fields of engineering and commerce.

b) System of assessment and evaluation of examinations, projects, industrial training, etc. including preparation and moderation of examination papers	**U**	**S**	**G**

Comment:

The system for examination regulation is in place and found to be satisfactory. Evidence to documentation of examination regulation was sighted. The Department of Polytechnic Education (DPE) is responsible to monitor the workflow of the final examination regulations beginning with the preparation of the Final Examination Item Specification Table (FEIST), developing of final examination paper, implementation of final examination, moderation of students' answer script and the processing of final examination results. Each polytechnic is responsible in monitoring academic staff adherence to work processes.

Comments/Remarks/Recommendations: *~~Unsatisfactory~~/Satisfactory

Strength	
Weakness	
Concern	
Opportunity for Improvement	

Prepared by:

Signature	
Name	Assoc. Prof. Dr. Raja Izamshah Bin Raja Abdullah
Date	8 Nov 2023
Address	Faculty of Manufacturing Engineering, Universiti Teknikal Malaysia Melaka, 76100 Durian Tunggal, Melaka

Acknowledged by HOP:

Signature	
Name	
Date	
Address	

Approved by HOD:

Signature	
Name	
Date	
Address	

EXTERNAL EXAMINER'S EVALUATION FEEDBACK REPORT
DIPLOMA IN MECHANICAL ENGINEERING (DKM)

Name of Institution : Politeknik Sultan Salahuddin Abdul Aziz Shah
Faculty / Department : Department of Mechanical Engineering
Program Evaluated : Diploma in Mechanical Engineering (DKM)
Name of Panel : Profesor Madya Dr Raja Izamshah Bin Raja Abdullah
Date of Visit : 2 – 3 Oktober 2023

No.	CONCERN/ SUGGESTION/ OPPORTUNITY FOR IMPROVEMENT		
	Issue	**EE Comment & Recommendation**	**Action / Response**
1	CRITERION 5: TEACHING AND SUPPORT STAFF Research/publication/consultancy	**EE COMMENT** Every DKM staff has moderate participation in either research, publication and consultancy **OPPORTUNITY FOR IMPROVEMENT** To increase number of participations of teaching staff in either research, publication and consultancy activity	Diploma in Mechanical Engineering (DKM) always encouraged staff to participate in research, publication, consultancy activity by excitement through media and department meetings. DKM will plan and manage to increase the number of participants for the next semester. The latest data for participation of DKM staff will show from **Appendix 6F**

2	CRITERION 6: FACILITIES Other supporting facilities	**EE COMMENT** One thing to be highlighted during the facilities visit, it was observed that lack of maintenance has been done on the sport facilities i.e. tennis court, futsal court, sport hall and outdoor gym. Furthermore, during the interview session, students also raised concerns regarding the sport and recreational facilities. **CONCERN** To maintain the sports facilities.	The institution has acted on this concern and maintenance is in progress. Please refer to attachment ***Laporan Peruntukkan Penyelenggaraan Bangunan dan Aset Tak Alih PSA Tahun 2022 hingga 2024.***

Prepared by:

.....

(MOHD NASIR BIN KAMARUDDIN)
Head of DKM Program
Mechanical Engineering Department
Politeknik Sultan Salahuddin
Abdul Aziz Shah.

Confirmed by:

.....

(MUHAMMAD FAIZ BIN ABDULLAH)
Head of Mechanical Engineering Department
Politeknik Sultan Salahuddin
Abdul Aziz Shah.

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MEMO DALAMAN
PUSAT PEMBANGUNAN DAN SENGGARAAN INFRASTRUKTUR (PPSI)

Ruj. Kami: PSA. 200 – 3/1/1 (10)	Tarikh : 05 Ogos 2024
Perkara	**LAPORAN PERUNTUKKAN PENYELENGGARAAN BANGUNAN DAN ASET TAK ALIH PSA TAHUN 2022 HINGGA 2024**
Kepada	Ketua Jabatan / Pusat / Unit
Salinan	i. Pengarah ii. Timb. Pengarah Akademik iii. Timb. Pengarah Sokongan Akademik iv. Fail PPSI

Perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa bersama-sama ini dilampirkan satu salinan laporan peruntukkan penyelenggaraan bangunan dan aset tak alih di PSA bagi tahun 2022 hingga 2024 (rujuk lampiran) untuk makluman dan rujukkan pihak tuan.

3. Sehubungan dengan itu sebarang pertanyaan yang berkaitan pihak tuan boleh terus menghubungi Pusat Pembangunan dan Senggaraan Infrastruktur (PPSI) PSA.

Kerjasama dan perhatian daripada pihak tuan/puan amatlah dihargai.

Sekian, terima kasih.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah.

MOHAMAD KHIRUDIN BIN AMDAN
Ketua Pusat Pembangunan & Senggaraan Infrastruktur (PPSI)
Politeknik Sultan Salahuddin Abdul Aziz Shah

LAPORAN PRESTASI PERUNTUKAN PENYELENGGARAAN ASET TAK ALIH POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH BAGI TAHUN 2024

PERUNTUKAN OS28000 (BGK)									
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	TAJUK KERJA	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
1	91000972	29.01.24	Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	Dewan Kuliah Jabatan Akademik	Kerja-kerja Penyelenggaraan Lampu yang telah rosak pada ketinggian melebihi 5 meter dan Lain-lain Kerja Berkaitan Di Dewan Kuliah Jabatan		21.03.24	26.04.24	Tarikh siap sebenar 26.04.24 Selesai bayar 29.04.2024 No baucer 12000366

PERUNTUKAN OS32000 (BGK)									
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	MAKLUMAT TAMBAHAN (TAJUK KERJA)	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
- Tiada peruntukkan di terima -									

PERUNTUKAN OS33000 (BGK)									
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	MAKLUMAT TAMBAHAN (TAJUK KERJA)	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
Tiada peruntukkan di terima -									

PERUNTUKAN KECEMASAN (BGK)									
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	MAKLUMAT TAMBAHAN (TAJUK KERJA)	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
1	91001952		Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-kerja Penyelenggaraan Kerosakan Cooling Tower Bagi Sistem Penghawa Dingin Berpusat (WCPU) di Dewan Al-Jazari Termasuk Kerja-kerja yang Berkaitan di PSA		26/2/2024	26/3/2024	selesai
2			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-kerja pembaikan Paip Utama Pecah Di Dalam Kawasan PSA		26/2/2024	4/3/2024	selesai
3			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-kerja pembaikan Paip Utama Pecah Di Dalam Kawasan PSA		10.05.24	17.05.24	Selesai pembayaran 16.05.24 Baucer No 12000521

PERUNTUKAN KECEMASAN (BGK)										
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	SKOP KERJA (RUJUK SHEET YANG	MAKLUMAT TAMBAHAN (TAJUK KERJA)	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
Tiada peruntukkan di terima -										

LAPORAN PRESTASI PERUNTUKAN PENYELENGGARAAN ASET TAK ALIH POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH BAGI TAHUN 2024

PERUNTUKAN USANG (BPPI)									
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	MAKLUMAT TAMBAHAN (TAJUK KERJA)	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
1			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-Kerja Penggantian Alat Penghawa Dingin Yang Baharu Jenis Split Unit Serta Kerja-Kerja Yang Berkaitan Di Politeknik Sultan Salahuddin Abdul Aziz Shah.	22.03.24	24.06.24	14.10.24	Dalam perlaksanaan
2			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	JKA,JKM	Kerja-Kerja Menaiktaraf Makmal, Bengkel Dan Bilik Kuliah Serta Lain-Lain Kerja Berkaitan Di Jabatan Kejuruteraan Awam Dan Jabatan Kejuruteraan Mekanikal Di Dalam Kawasan Politeknik Sultan	21.03.24	05.06.24	31.07.24	Dalam perlaksanaan
3			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	JKA,JKM	Kerja-Kerja Menaiktaraf Papan Agihan (SSB), Sistem Pendawaian Serta Kerja-Kerja Berkaitan Di Bengkel Jabatan Kejuruteraan Awam Dan Jabatan Kejuruteraan Mekanikal Politeknik Sultan Salahuddin Abdul Aziz	15.03.24	10.06.24	30.09.24	Dalam perlaksanaan
4			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	FM	Kerja-Kerja Pembaikan Lantai Rosak Serta Lain-Lain Kerja Berkaitan Di Ruang Kerja Bilik E-Learning Dan Unit Peperiksaan Di Politeknik Sultan Salahuddin Abdul Aziz Shah	10.06.24	26.07.24	15.11.24	Dalam perlaksanaan
5			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	Pusat Islam, Kamsis	Kerja-Kerja Pembaikan Bumbung, Dinding Dan Lantai Serta Lain-Lain Kerja Berkaitan Di Pusat Islam Dan Kamsis Di Politeknik Sultan Salahuddin Abdul Aziz Shah	10.06.24	26.07.24	15.11.24	Dalam perlaksanaan
6			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-Kerja Membarumuka Dataran Dengan Menurap Semula (Resurfacing) Serta Lain-Lain Kerja Berkaitan Di Tempat Meletak Kenderaan Pelajar Di Politeknik Sultan Salahuddin Abdul Aziz Shah	10.06.24	26.07.24	23.08.24	Dalam perlaksanaan
✓			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-Kerja Pembaikan Kemudahan Sukan Dan Gelanggang Sukan Terbuka Serta Lain-Lain Kerja Berkaitan Di Politeknik Sultan Salahuddin Abdul Aziz Shah	10.06.24	26.07.24	15.11.24	Dalam perlaksanaan
8			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-Kerja Penggantian Alat Penghawa Dingin Baharu Jenis Split Unit Di Jabatan-Jabatan Akademik Di Politeknik Sultan Salahuddin Abdul Aziz Shah	20.06.24	26.07.24	15.11.24	Dalam perlaksanaan

PERUNTUKAN OS28000 (PSA)									
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	MAKLUMAT TAMBAHAN (TAJUK KERJA)	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
1			Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)	PSA	Kerja-kerja Menebang dan Memangkas Pokok Bersaiz Besar Di Dalam Kawasan PSA				Selesai

PERUNTUKAN AKAUN AMANAH									
BIL	NO WARAN	TARIKH WARAN	NAMA INSTITUSI	LOKASI PENYELENGGAR	MAKLUMAT TAMBAHAN (TAJUK KERJA)	TARIKH IKLAN	TARIKH MULA	TARIKH SIAP	STATUS TERKINI
Tiada peruntukkan di terima									

LAPORAN PRESTASI PERUNTUKAN PENYELENGGARAAN ASET TAK ALIH POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH BAGI TAHUN 2023

Bil	Tajuk Kerja / Sebutharga	Peruntukan	Tarikh Mula	Tarikh Siap	Lokasi
1	Kerja-kerja Penggantian Pintu, Kerangka Pintu Dan Lain-lain Kerja Berkaitan Pada Bilik GS1 & GS2 (BilikMuet) di Dalam Bangunan JPA, PSA	Akaun Amanah	16.02.23	16.03.23	Bilik GS1 & GS2 JPA
2	Kerja-kerja Menaiktaraf Tangga Di Luar Makmal Kalibrasi (CMET) di PSA	Akaun Amanah	16.02.23	16.03.23	CMET
3	Sebutharga Kerja-Kerja Mebekal dan Memasang Perabot Lekap Serta Kerja-kerja Lain Berkaitan di BangunanAnggerik Inn di PSA	Akaun Amanah	27.03.23	22.05.23	Anggerik Inn
4	Kerja-kerja Penyelenggaraan 14 unit Alat Penyaman Udara di Pejabat dan Lobi ULPL serta bilik seminarCMET, PSA	Akaun Amanah	6.3.23	20.3.23	Anggerik Inn, CMET
5	Kerja-kerja Penyelenggaraan dan Pendawaian Astro di Bangunan Anggerik Inn, PSA	Akaun Amanah	9.3.23	23.3.23	Anggerik Inn
6	Sebut Harga Kerja-Kerja Membuka, Membekal Dan Memasang Carbon Dioxide (Co2) Fire Suppression System Yang Baharu Di Bilik Pencawang Utama 11Kv dan 5 Pencawang Agihan Serta Kerja-Kerja BerkaitanDi Politeknik Sultan Salahuddin Abdul Aziz	B64 OS28000	10.4.23	19.6.23	Bilik Pencawang Utama 11Kvdan 5 Pencawang Agihan
7	Kerja-kerja Pembaikan Kerosakan Pintu, Tingkap, Kerangka Pintu, Kebocoran Bumbung dan Talang, serta lainlain Kerja Berkaitan di Jabatan Akademik Dalam Politeknik Sultan Salahuddin Abdul Aziz Shah, Selangor.	OS28000	26.4.23	21.6.23	Jabatan Akademik PSA
8	Kerja-kerja pemasangan alat hawa dingin di bilik makmal kooputer bengkel pembungkusan JKM, PoliteknikSultan Salahuddin Abdul Aziz Shah, Selangor.	Akaun Amanah	06.06.23	20.06.23	JKM
9	Kerja-kerja Penggantian Alatubah (Transformer) dan lain-lain kerja berkaitan di Sub Stesen PerpustakaanPoliteknik Sultan Salahuddin Abdul Aziz Shah, Selangor.	OS28000	03.07.23	25.09.23	Sub Stesen Perpustakaan
10	Kerja-Kerja Penggantian Alat Penghawa Dingin Yang Baharu Jenis Air Cooled Package Unit Serta Kerja-KerjaYang Berkaitan Di Jabatan Kejuruteraan Elektrik Dan Bilik Mesyuarat Utama Di Politeknik Sultan SalahuddinAbdul Aziz	OS28000	31.07.23	21.08.23	JKE dan BMU
11	Kerja-kerja penyelenggaraan alat pemadam api jenis serbuk kering (ABC) dan karbon monoksida (CO2)termasuk penggantian sijil bomba di Politeknik Sultan Salahuddin Abdul Aziz Shah, Selangor.	OS28000	10.08.23	05.10.23	PSA
12	Kerja-kerja menaiktaraf (awam) Kuarters C1 Kepada tabika kemas dan lain-lain kerja berkaitan di PoliteknikSultan Salahuddin Abdul Aziz Shah, Selangor.	OS32000	09.08.23	03.10.23	Kuarters C1
13	Kerja-kerja menaiktaraf (elektrik) Kuarters C1 Kepada tabika kemas dan lain-lain kerja berkaitan di PoliteknikSultan Salahuddin Abdul Aziz Shah, Selangor.	OS32000	09.08.23	03.10.23	Kuarters C1

LAPORAN PRESTASI PERUNTUKAN PENYELENGGARAAN ASET TAK ALIH POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH BAGI TAHUN 2023

Bil	Tajuk Kerja / Sebutharga	Peruntukan	Tarikh Mula	Tarikh Siap	Lokasi
14	Kerja-kerja penggantian pagar perimeter kawasan dan lain-lain kerja berkaitan di dalam Politeknik SultanSalahuddin Abdul Aziz Shah, Selangor.	OS28000	09.08.23	03.10.23	PSA
15	Kerja-kerja pembaikan paip utama dan lain-lain kerja berkaitan di dalam PSA	OS28000	21.7.23	28.9.23	PSA
16	Kerja-kerja pembaikan kerosakan dinding perpustakaan, laluan ramp oku bangunan pentadbiran, sinki pantrypejabat kewangan, satu tingkap dan 40 pintu kamsis serta lain-lain kerja berkaitan di dalam Politeknik Sultan Salahuddin Abdul Aziz Shah, Selangor.	OS28000	25.09.23	25.10.23	PSA
17	Kerja-kerja pembaikan dan selenggara menara pendingin *(cooling tower)* di DAJ, PSA	OS28000	16.11.23	23.11.23	JKA
18	Kerja-kerja Pembaikan Kebocoran Paip Di Jabatan Kejuruteraan Awam, Politeknik Sultan Salahuddin AbdulAziz Shah, Selangor.	OS28000	16.11.23	23.11.23	JKA
19	Kerja-kerja Menaiktaraf Longkang Perimeter dan lain-lain kerja berkaitan di dalam Politeknik Sultan SalahuddinAbdul Aziz Shah, Selangor.	OS32000	02.10.23	02.11.23	Anjung,DAJ
20	Kerja-Kerja Menaik Taraf Ruang Kelas Di Block MA Dan MD Jabatan Kejuruteraan Elektrik (JKE), PoliteknikSultan Salahuddin Abdul Aziz Shah (PSA).	OS28000	26.10.23	26.11.23	JKE

LAPORAN PRESTASI PERUNTUKAN PENYELENGGARAAN ASET TAK ALIH POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH BAGI TAHUN 2022

Bil	Tajuk Kerja / Sebutharga	Peruntukan	Tarikh Mula	Tarikh Siap	Lokasi
1	Kerja-kerja Menaiktaraf Tandas Orang Kelainan Upaya (OKU) Dan Lain-lain Kerja BerkaitanDi Jabatan Akademik (JKA, JKE, JKM) Blok Asrama (Aman, Damai, Sentosa) Di Dalam Politeknik Sultan Salahuddin Abdul Aziz Shah, Selangor Darul Ehsan.	P99		16/9/2022	Jabatan Akademik (JKA,JKE,JKM). Dan Blok Asrama (Aman, Damai, Sentosa)
2	Sebutharga penyelenggaraan dan pembaikan serta pengujian pada kabel 11KV daripadapencawang utama ke bangunan perpustakaan dan kafetaria.	OS28000	13/7/2022	14/7/2022	Hadapan Pusat Islam, Belakang Perpustakaan. Cable bawah tanah Saiz 185mm
3	kamsis sentosa (skop awam)	OS28000			kamsis sentosa (skop awam)
4	Kerja-kerja Penyelenggaraan Kabel Submain dan Kipas di Kamsis Sentosa Aras 2, PSA	OS28000	5/9/2022	26/9/2022	Aras 2 - kamsis sentosa (skop elektrik)
5	Kerja-Kerja Pembaikan Dinding, Pintu, Lantai, Siling Dan Perpaipan Serta Kerja-KerjaBerkaitan Di Bangunan Anggerik Inn PSA	Wang Amanah	19/9/2022	27/11/2022	Anggerik Inn
6	Kerja-Kerja Menyelenggara Bekalan Elektrik Dan Sistem Pengagihan Di Bangunan AnggerikInn PSA	Wang Amanah	19/9/2022	27/11/2022	Anggerik Inn
7	Kerja penggantian pintu kaca (Pintu Pejabat CMET)	Wang Amanah	3/10/2022	24/10/2022	CMET
8	Kerja-Kerja Penambahan Rak Pada Meja Makmal Sedia Ada Di Center For MedicalElectronic Technology (Cmet), PSA	Wang Amanah	25/10/2022	9/11/2022	CMET
9	Kerja-kerja Pendawaian di Centre For Medical Electronic Technology (CMET) di PSA	Wang Amanah	12/10/2022	23/11/2022	CMET
10	Sebutharga Kerja-kerja Pembaikan Kerosakan Bumbung, Paip Utama, Paip Dalaman, Pintudan Tingkap Serta Kerja-kerja Berkaitan Di Bangunan Akademik Dan Kamsis PSA	OS28000	26/9/2022	6/11/2022	
11	Sebut harga Kerja-kerja Menaiktaraf Tandas Orang Kelainan Upaya (OKU) Fasa 2 Dan Lain-lain Kerja Berkaitan di Bangunan Pentadbiran, Bangunan Jabatan Akademik (JMSK & JPA) Di Dalam PSA, Selangor DE.	P99	12/10/2022	23/11/2022	JPENT,JMSK,JPA

LAPORAN PRESTASI PERUNTUKAN PENYELENGGARAAN ASET TAK ALIH POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH BAGI TAHUN 2022

Bil	Tajuk Kerja / Sebutharga	Peruntukan	Tarikh Mula	Tarikh Siap	Lokasi
12	Kerja-kerja Penyelenggaraan Roller Shutter dan Lain-lain Kerja Berkaitan di PoliteknikSultan Salahuddin Abdul Aziz Shah.	OS28000			1.Bengkel Workshop ; 2 x 500kg 2.Bengkel Pembungkusan 1x300kg 3.Bengkel Mesin ; 2 x 400kg 4.AnjungIlmu ; 1 x 400kg 5.Kafeteria ; 1x
13	Kerja-kerja Pendawaian Elektrik Dan Pemasangan Lampu Kecemasan di Kamsis Sentosa,PSA	TAP	20/10/2022		Bilik Q0-01, Bilik Q0-02, Bilik Q0-03, BilikQ0-04, Bilik Q0-05, Bilik Q0-06, Bilik Q0-07, Bilik Q0-08, Bilik Q0-09, Bilik Q0-10, Bilik Q0-37
14	Kerja-kerja Senggaraan Lampu Jalan dan Lampu Kawasan di Beberapa Lokasi SekitarKampus, PSA	OS28000	10/10/2022	7/11/2022	Dalam kawasan PSA
15	Kerja-kerja Penggantian Dua Unit Motor Condenser Water Pump BG Unit WCPU di DewanAJ Serta kerja-kerja berkaitan di PSA	OS28000	13/10/2022	10/11/2022	DAJ
16	Kerja-kerja Membina Stor Simpanan Barang di Dewan AJ serta kerja-kerja Berkaitan di PSA	OS28000	25/10/2022	8/11/2022	DAJ dan kawasan sekitar PSA
17	Kerja-kerja Pendawaian Elektrik Dan Pemasangan Sistem Penggera KeselamatanBerlampu di Bengkel Dan Bilik Kuliah JKM, PSA	OS28000	10/10/2022	7/11/2022	Bengkel JKM
18	Kerja-kerja Pembaikan Serta Pengujian Pada Kabel 11Kv Dari Pencawang Utama KeBangunan Café di Psa	OS28000	16/11/2022	23/11/2022	Kabel HT Bawah Tanah Di Hadapan PI
19	Kerja-kerja Pembaikan Kebocoran PaipAir Dalaman, Utama dan Bumbung Serta Lain-lainkerja Berkaitan Pada Bangunan Jabatan Akademik, Kuarters, Kamsis di Dalam PSA	OS28000	24/11/2022	30/11/2022	
20	Kerja-kerja Pendawaian Elektrik Di Kamsis Sentosa 4 Aras 2 dan Kerja-kerjaMenyelenggara Lampu Highbay Di Bengkel Mesin Blok KH, JKM, PSA	OS28000	24/11/2022	30/11/2022	Kamsis & Bengkel Mesin
21	Kerja-kerja membuka dan menanggalkan Precison Air Conditioner Di Dalam Pusat Link, Makmal CAD 1 dan KAM 1 serta di Makmal CAD 2 dan KAM 2, JMSK, PSA	OS28000	24/11/2022	30/11/2022	JMSK

MINIT MESYUARAT
MESYUARAT JAWATANKUASA PENASIHAT INDUSTRI (JPI)
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

Tarikh	:	**14 November 2024**
Masa	:	**9.00 pagi – 12.30 tengahari**
Tempat	:	**Bilik Mesyuarat Utama, PSA**
Pengerusi	:	**Encik Melvin Lim Chun Hean,** **Pengarah Urusan** **Gentle Automatic Solution Sdn. Bhd.**

Kehadiran :

JAWATANKUASA PENASIHAT INDUSTRI:

1.	Encik Ahmad Zaidi Bin Md. Zain	Agromind Solution Sdn. Bhd.
2.	Encik Mohd Arbain B. Mohd Yahaya	Pautan Legasi Sdn. Bhd.
3.	Encik Mohd Hirwan Bin Othman	Integratus Energy Services Sdn. Bhd.
4.	Encik Mohd Ashraf Bin Mohd Ibrahim	Petronas Technical Solutions Sdn. Bhd.
5.	Puan Eamienor Zakiah Bt Md Zuki	Persekutuan Orang Pekak Malaysia (MFD)
6.	Encik Mohd Fadhil Bin Aziz	Panasonic Appliances Air Conditioning Malaysia Sdn. Bhd.
7.	Encik Muhammad Hafiezul Fais Bin Mohd Jahis	BEM Cooler Enterprise
8.	Dr. Izhar Bin Abdul Aziz	3D Gens Sdn. Bhd
9.	Encik Mohd Zaharul Bin Zaharudin	Sirim. Bhd
10.	Encik Mohd Shabuddin Bin Mat Hasan	Indsys Engineering Sdn. Bhd.

TURUT HADIR:

1.	Encik M Subki Bin Ahmad Fadzil	Petronas Technical Solutions Sdn. Bhd.
2.	Ts. Dr. Mohd Ridhuan Mohd Jamil	Universiti Pendidikan Sultan Idris (UPSI)
3.	Dr. Abdul Muqsith Bin Ahmad	Universiti Pendidikan Sultan Idris (UPSI)
4.	Puan Zainah Binti Rujihan	PSA
5.	Pgkb II (K) Ts. Dr. Ahmad Aftas Bin Azman	PSA
6.	Encik Muhammad Faiz Bin Abdullah	PSA
7.	Encik Mohd Sharizan Bin Mohd Sharif	PSA
8.	Encik Muhammad Hanif Bin Selamat	PSA
9.	Puan Nurus sadiqin Binti Abdul Razak Khan	PSA
10.	Puan Suaiza Binti Khairi	PSA
11.	Puan Noor Haznida Binti Abu Baka	PSA

12.	Dr. Norasiah Binti Muhammad	PSA
13.	Puan Nur Farahaizan Binti Idris	PSA
14.	Encik Ahmad Fakaruddin Bin Mohd Fauzi	PSA
15.	Ts. Wan Majdah Binti Ton Mamat	PSA
16.	Ts. Noorazlan Bin Mohd Samsudin	PSA
17.	Dr. Khairulnizam Bin Kasim	PSA
18.	Encik Mohd Zulkarnaen Bin Mohd Ibrahim	PSA
19.	Encik Mohd Nasir Bin Kamaruddin	PSA
20.	Puan Norlidawati Binti Mohamad	PSA
21.	Cik Haslinda Binti Abu Saman	PSA
22.	Encik Bryan Hee Tzekeon	PSA
23.	Puan Norsaáidah Binti Saáid	PSA

PENCATAT MINIT:

1.	Puan Shariza Azwin Binti Yahya	PSA
2.	Puan Amalina Kamilah Binti Ibrahim	PSA

1. PERUTUSAN PUAN ZAINAH BINTI RUJIHAN, PENGARAH POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

1.1 Ucapan selamat datang kepada semua yang hadir pada mesyuarat ini dan terima kasih kepada Encik Melvin Lim Chun Hean, Pengarah Urusan Gentle Automatic Solution Sdn. Bhd. sebagai Pengerusi Mesyuarat.

Makluman

1.2 Pengarah menyatakan mesyuarat ini bertujuan bukan sahaja untuk berkongsi ilmu, tetapi sebagai platform pindahan pengetahuan (*knowledge transfer*). Fokus utama adalah untuk memperkukuhkan lagi kerjasama antara industri dan akademia, terutamanya dalam bidang pengajaran dan pembelajaran (PdP), bagi memastikan manfaat yang lebih besar antara kedua-dua pihak.

Makluman

1.3 Selain itu pengarah menyatakan harapan agar pihak industri dapat memberikan token atau insentif kepada pelajar yang menjalani latihan industri untuk memberi semangat kepada pelajar dan meningkatkan motivasi mereka dalam menjalani latihan industri.

Makluman

1.4 Pengarah berharap perbincangan hari ini dapat memberi manfaat kepada semua pihak dan kerjasama antara industri dan akademia ini dapat membawa kejayaan yang lebih besar pada masa hadapan.

Makluman

2. ALUAN ENCIK MELVIN LIM CHUN HEAN, PENGERUSI MASYUARAT

2.1 Pengerusi membuka mesyuarat dengan mengucapkan selamat datang kepada semua ahli mesyuarat dan meminta semua Jawatankuasa Penasihat Industri (JPI), JKM untuk memperkenalkan diri.

Makluman

2.2 En. Ahmad Zaidi Bin Md. Zain dari Agromind Solution Sdn. Bhd. bertanya kepada pihak program bagaimana cara untuk memastikan program yang ditawarkan adalah relevan dengan keperluan industri.

Tindakan: Ketua Program DKM, DMP dan KMK

2.3 Pengerusi juga mengucapkan tahniah dan terima kasih kepada semua JPI yang telah memberikan komitmen untuk terus bekerjasama. Pengerusi menyatakan bahawa pihak industri akan terus komited untuk terus berkolaborasi dalam memperkukuh PdP di Jabatan Kejuruteraan Mekanikal (JKM), selaras dengan perkembangan semasa dan keperluan industri.

Makluman

2.4 Pengerusi juga menyatakan bahawa JPI berperanan penting dalam memberi input strategik dalam pembangunan kurikulum yang relevan, yang bukan sahaja memenuhi kehendak industri, tetapi juga memastikan para pelajar mendapat pendidikan yang berkualiti dan terkini.

Makluman

3. PENGESAHAN MINIT MESYUARAT

3.1 Minit Mesyuarat Jawatankuasa Penasihat Industri dan Alumni, Jabatan Kejuruteraan Mekanikal Bil 1/2023 telah disahkan. Minit mesyuarat dicadangkan untuk disahkan oleh Ts. Dr. Mohd Ridhuan Bin Mohd Jamil dan disokong oleh Dr. Izhar Bin Abdul Aziz.

Makluman

3.2 Maklumbalas Minit Mesyuarat Jawatankuasa Penasihat Industri dan Alumni, Jabatan Kejuruteraan Mekanikal Bil 1/2023 telah dibentangkan kepada ahli mesyuarat.

Makluman

4. PEMBENTANGAN KETUA PROGRAM

4.1 Pembentangan program telah disampaikan oleh Ketua Program (KP) Diploma Kejuruteraan Mekanikal (DKM), Diploma Kejuruteraan Mekanikal (Pembungkusan) dan Sijil Khas Penyenggaraan Mekanikal (KMK). Pembentangan dari KP program adalah merangkumi proses pembangunan kurikulum secara ringkasnya, pencapaian *Programme Educational Objectives* (PEO) dan *Programme Learning Outcomes* (PLO) serta data kebolehpasaran graduan program.

Makluman

4.2 Program DKM telah menggunapakai kurikulum baharu *Version* :06062024_1_*Effective: Session*_I_2024/2025 bermula Sesi I 2024/2025 bagi semester 1. Bagi semester 2 dan ke atas masih menggunapakai kurikulum sedia ada. Bagi program DMP, masih menggunapakai kurikulum sedia ada untuk semua semester.

Makluman

4.3 En. Ahmad Zaidi Bin Md. Zain mengemukakan pertanyaan mengenai peratusan kebolehpasaran graduan yang bekerja dalam bidang program DKM yang terkini, berdasarkan data *Graduate Employability* (GE) yang telah dibentangkan.

Tindakan: Ketua Program DKM

4.4 Dr. Izhar Bin Abdul Aziz dari 3D Gens Sdn. Bhd. meminta penjelasan mengenai kerelevanan kursus DJJ20263 *Electrical and Electronic Technology* ditawarkan dalam kurikulum program Diploma Kejuruteraan Mekanikal (DKM). En. Mohd Zulkarnaen bin Mohd Ibrahim menerangkan bahawa kurikulum DKM dibangunkan berdasarkan kepada *Body of Knowledge* (BoK) yang dibangunkan dan dipetakan dengan program setara dari institusi lain. Kursus ini dimasukkan kerana ia melengkapi aspek teknikal dalam kejuruteraan mekanikal dan memastikan graduan mempunyai keupayaan untuk memenuhi keperluan pelbagai industri berteknologi tinggi. Encik Mohd Hirwan Bin Othman dari Integratus Energy Services Sdn. Bhd. yang juga merupakan alumni program DKM di PSA turut menyokong dan menyatakan bahawa kursus ini diaplikasikan di industri.

Makluman

4.5 Dr. Izhar Bin Abdul Aziz ingin mengetahui sama ada pelajar berperanan dalam memberikan input atau maklum balas terhadap kurikulum program. Menjawab persoalan ini, TPA PSA memaklumkan bahawa maklumbalas kurikulum adalah terbuka kepada semua pemegang taruh yang terlibat dengan program seperti pihak industri, alumni dan ibu bapa.

Makluman

4.6 Dr. Izhar Bin Abdul Aziz turut bertanya mengenai pengiktirafan atau penilaian skor program oleh badan-badan yang diiktiraf. Menjawab persoalan ini, TPA PSA menjelaskan bahawa semua program pengajian di PSA telah memperoleh akreditasi daripada badan profesional yang relevan mengikut bidang masing-masing. Selain itu, bagi audit Penaziran Akademik (PeNA) di bawah Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK), PSA telah dianugerahkan penarafan 5 bintang. Di samping itu, PSA turut menerima pengiktirafan daripada SIRIM melalui pensijilan ISO 21001:2018 (*Educational Organizations Management Systems* – EOMS), sebagai bukti kepatuhan terhadap piawaian pengurusan organisasi pendidikan.

Makluman

4.7 Dr. Izhar Bin Abdul Aziz mencadangkan agar pensyarah lebih aktif melibatkan diri dalam mendapatkan geran penyelidikan bersama pihak industri untuk memperkukuh kerjasama strategik dan memperkayakan aktiviti penyelidikan berimpak tinggi.

Tindakan: Ketua Program DKM dan DMP

4.8 Dr. Izhar Bin Abdul Aziz telah mengemukakan maklum balas mengenai nama program Diploma Kejuruteraan Mekanikal (Pembungkusan) (DMP), yang dirasakan kurang mencerminkan perkembangan terkini dalam industri. Beliau mencadangkan agar pertimbangan dilakukan untuk penjenamaan semula program ini, dengan memilih nama yang lebih moden dan relevan. Ini diharapkan dapat memberikan gambaran yang lebih tepat mengenai cabang kejuruteraan ini, sekaligus menarik minat pelajar.

Tindakan: Ketua Program DMP

4.9 Selain itu, En. Ahmad Zaidi Bin Md. Zain mencadangkan agar pihak program DMP memperkaya kandungan kurikulum dengan mengikuti perkembangan terkini dalam industri. Pengerusi mesyuarat turut mencadangkan agar promosi program dipertingkatkan melalui platform media sosial untuk memperluas jangkauan dan meningkatkan kesedaran. Cadangan lain turut dikemukakan oleh Encik Mohd Shabuddin Bin Mat Hasan dari Indsys Engineering Sdn. Bhd., yang mencadangkan agar pihak program DMP menjalankan kajian pasaran terlebih dahulu sebelum melaksanakan penjenamaan semula nama program bagi memastikan kesesuaian dan keberkesanannya.

Tindakan: Ketua Program DMP

4.10 Ketua program KMK memohon pihak industri untuk memberikan maklumbalas berkaitan cadangan penukaran penamaan kursus bagi persediaan program KMK untuk menjawab maklumbalas akreditasi sementara dari pihak *Malaysia Qualification Agency* (MQA).

Makluman

4.11 Cadangan nama kursus yang akan ditukar adalah seperti berikut;

I. Kemahiran Kimpalan Arka ditukarkan kepada: **Teknologi Kimpalan Arka Logam Berperisai.**
II. Kemahiran Kimpalan Metal Inert Gas (MIG) ditukarkan kepada: **Teknologi Kimpalan Arka Gas Logam.**
III. Kemahiran Kimpalan Tungsten Inert Gas (TIG) ditukarkan kepada: **Teknologi Kimpalan Arka Gas Tungsten.**
IV. Kemahiran Mesin ditukarkan kepada: **Teknologi Permesinan Am.**
V. Kemahiran Penyaman Udara 1 ditukarkan kepada: **Teknologi Penyaman Udara 1.**
VI. Kemahiran Penyaman Udara 2 ditukarkan kepada: **Teknologi Penyaman Udara 2.**
VII. Kemahiran Penyenggaraan Motorsikal ditukarkan kepada: **Teknologi Penyenggaraan Motosikal.**
VIII. Kemahiran Penyenggaraan Kereta ditukarkan kepada: **Teknologi Penyenggaraan Kereta**

Makluman

4.12 Berdasarkan maklum balas yang diterima, hanya seorang wakil industri yang tidak bersetuju dengan cadangan nama baru kursus tersebut, manakala sembilan wakil industri lain bersetuju dengan cadangan nama baru. Walau bagaimanapun, bagi kursus Kemahiran Penyamanan Udara 1 dan 2, penukaran nama kepada yang baru perlu diselaraskan dengan terma sistem *Heating, Ventilation, and Air Conditioning* (HVAC System) untuk memastikan keselarasan dengan standard industri yang terkini.

Tindakan: Ketua Program KMK

5. PEMBENTANGAN: PENSIJILAN, *ADDITIVE MANUFACTURING CENTER* (ADMC), CADANGAN PENAWARAN PROGRAM BAHARU JKM DAN *INDUSTRY ON CAMPUS* (IOC).

5.1 Pembentangan berkaitan pensijilan telah dibentangkan oleh Encik Mohd Nasir bin Kamaruddin. Terdapat 6 jenis pensijilan di JKM iaitu *Mechanical Draughtsmanship*, CADD, PSH, *Digital Packaging*, ADMC dan *Welding*.

Makluman

5.2 En. Ahmad Zaidi Bin Md. Zain ingin mengetahui bilangan pensyarah JKM yang mempunyai sijil profesional dan pengalaman industri. Beliau mencadangkan pihak institusi menghantar pensyarah untuk memperoleh sijil profesional daripada badan profesional yang diiktiraf selain CIAST.

Tindakan: Tindakan: Ketua Program DKM, DMP dan KMK

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5.3 Encik Mohd Arbain B. Mohd dari Pautan Legasi Sdn. Bhd juga mencadangkan pensyarah mengambil sijil profesional dengan tempoh yang lebih panjang dan relevan bagi memastikan pensyarah memiliki pengetahuan terkini yang mendalam, selaras dengan keperluan industri terkini.

Tindakan: Tindakan: Ketua Program DKM, DMP dan KMK

5.4 En. Ahmad Zaidi Bin Md. Zain mencadangkan pendedahan teknologi terkini dalam semua program pengajian kepada pelajar bagi memperkukuh proses PdP. Pendekatan ini bertujuan melahirkan graduan yang versatile, kompetitif, dan mampu memenuhi tuntutan serta cabaran industri melalui penguasaan kemahiran yang relevan dan terkini.

Tindakan: Tindakan: Ketua Program DKM, DMP dan KMK

5.5 Selain itu, En. Ahmad Zaidi Bin Md. Zain turut mencadangkan agar tempoh Program Sangkutan Industri Pensyarah (SIP) dilanjutkan. Langkah ini bertujuan memberi peluang kepada pensyarah untuk memperoleh lebih banyak pendedahan dan pengalaman mendalam di industri, seterusnya meningkatkan kompetensi pengajaran selaras dengan keperluan semasa.

Tindakan: Tindakan: Ketua Program DKM, DMP dan KMK

5.6 Pembentangn berkaitan *Additive Manufacturing Center* (ADMC) telah disampaikan oleh Dr. Norasiah Binti Muhammad. Beliau memaklumkan kepada ahli mesyuarat bahawa penerimaan kesemua peralatan di ADMC telah selesai.

Makluman

5.7 Sekiranya pihak industri berminat untuk mengetahui dengan lebih lanjut berkaitan ADMC boleh terus berhubung dengan Dr. Norasiah Binti Muhammad dan En Somchai A/L Enoi.

Makluman

5.8 Pembentangan berkaitan Cadangan Penawaran Program Baharu di JKM dan *Industry on Campus* (IOC) telah dibentangkan oleh Dr. Khairulnizam Bin Kasim.

Makluman

5.9 Dr. Khairulnizam Bin Kasim memaklumkan kepada ahli mesyuarat bahawa terdapat dua program baharu yang dicadangkan iaitu Ijazah Sarjana Muda Teknologi Mekanikal secara separuh masa dengan mode penawaran *Work Based Learning* (WBL) serta program Diploma Teknologi Mekanikal yang merupakan cadangan pelan penggantian kepada program Diploma Kejuruteraan Mekanikal (Pembungkusan).

Makluman

5.10 Dr. Khairulnizam Bin Kasim juga memaklumkan bahawa kedua-dua program dirancang untuk memanfaatkan sepenuhnya kemudahan sedia ada, serta mengintegrasikan modul Diploma Kejuruteraan Mekanikal (DMP) dan *Additive Manufacturing*. Kedua-dua program dicadangkan diakreditasi di bawah *Malaysia Board of Technologies* (MBOT).

Makluman

5.11 Dr. Izhar Bin Abdul Aziz menggesa agar penawaran program baharu dipercepatkan untuk memastikan kurikulum sentiasa seiring dengan kemajuan teknologi yang pesat.

Tindakan : Dr. Khairulnizam Bin Kasim

5.12 Ts. Dr. Mohd Ridhuan Mohd Jamil mencadangkan integrasi pelbagai pendekatan pembelajaran dalam reka bentuk kurikulum untuk memastikan fleksibiliti dan keberkesanan dalam memenuhi keperluan pembelajaran abad ke-21.

Tindakan : Dr. Khairulnizam Bin Kasim

5.13 Encik Mohd Arbain B. Mohd Yahaya mencadangkan agar pihak program melaksanakan kajian keperluan program secara terperinci, khususnya berkaitan permintaan pelajar. Kajian ini bertujuan untuk memastikan pengambilan pelajar bagi program baharu dapat diselaraskan dengan trend pasaran, sekaligus mengelakkan isu kekurangan pengambilan pelajar di masa hadapan.

Tindakan : Dr. Khairulnizam Bin Kasim

6. HAL-HAL LAIN

6.1 Encik Mohd Ashraf Bin Mohd Ibrahim dari Petronas Technical Solutions Sdn. Bhd. memaklumkan bahawa maklumat berkaitan Akta Keselamatan dan kompetensi yang diperlukan dalam bidang Keselamatan dan Kesihatan Pekerjaan (OSH) boleh dirujuk melalui laman web rasmi Jabatan Keselamatan dan Kesihatan Pekerjaan (DOSH) untuk mendapatkan panduan dan keperluan terkini.

Makluman

6.2 Pengerusi Mesyuarat memaklumkan bahawa pihaknya berhasrat untuk mewujudkan sistem rangkaian (*networking system*) antara Jawatankuasa Penasihat Industri JKM bagi mempermudah dan mempercepatkan perkongsian maklumat serta komunikasi dalam kalangan ahli jawatankuasa.

Makluman

7. PENUTUP

7.1 Sebagai penutupan mesyuarat, Pengerusi mengucapkan setinggi-tinggi penghargaan dan terima kasih kepada semua ahli mesyuarat atas sumbangan, kerjasama, dan komitmen yang diberikan sepanjang perbincangan. Setiap cadangan dan pendapat yang dibentangkan amat bernilai dan diharapkan dapat memberi impak positif kepada kemajuan program. Mesyuarat telah ditangguhkan pada jam 12.30 tengah hari.

Makluman

Disediakan oleh:

(AMALINA KAMILAH BINTI IBRAHIM)
Pencatat Minit
Jabatan Kejuruteraan Mekanikal

Disahkan oleh:

GENTLE AUTOMATIC SOLUTION SDN BHD 684637-U

(MELVIN LIM CHUN HEANG)
Pengarah Urusan
Gentle Automatic Solution Sdn. Bhd.
Merangkap Pengerusi Mesyuarat

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
KEMENTERIAN PENDIDIKAN TINGGI
KEHADIRAN MESYUARAT PENASIHAT INDUSTRI BIL 1/2024

Bil. Mesyuarat : 1/2024	**Tarikh : 14 November 2024**	**Masa : 9.00 pagi**
Tempat : Bilik Mesyuarat Utama PSA (BMU PSA)		

JAWATANKUASA PENASIHAT INDUSTRI

BIL	NAMA	JAWATAN/SYARIKAT	EMEL/NO TEL	TANDATANGAN
1	Encik Melvin Lim Chun Hean **(Pengerusi)**	Gentle Automatic Solution Sdn. Bhd.	sales@gentle.com.my 012-2738827.	
2	Encik. Ahmad Zaidi Bin Md. Zain	Agromind solution Sdn. Bhd	zaidi1970@gmail.com 019-4809990	
3	Encik Mohd Arbain B. Mohd Yahaya	Pautan Legasi Sdn. Bhd.	arbah-galaxy@yahoo.com.my 012-3153700	
4	Encik Mohd Hirwan Bin Othman	Integratus Energy Services Sdn. Bhd.	hirwan@iess.com.my	
5	Encik Mohd Ashraf Bin Mohd Ibrahim	Petronas ~~Global~~ Technical Solutions Sdn. Bhd.	mohdashraf@petronas.com. 012-7357146.	
6	Puan Eamienor Zakiah Bt Md Zuki	Persekutuan Orang Pekak Malaysia (MFD)	eamie.semfol@gmail.com 018-8720275	
7	Encik Mohd Fadhil Bin Aziz	Panasonic Appliances Air Conditioning Malaysia Sdn. Bhd.	mohdfadhil.aziz@my.panasonic.com 019-6906909	
8	Encik Muhammad Hafiezul Fais Bin Mohd Jahis	BEM Cooler Enterprise	bemcooler@gmail.com 018-2421847	

9	Ts Dr Mohd Ridhuan Mohd Jamil	Jabatan Pengajian Pendidikan, Universiti Pendidikan Sultan Idris (UPSI)	mridhuan@fpm.upsi.edu.my 0137042727	
10	Dr Abdul Muqsith Bin Ahmad	Jabatan Pengajian Pendidikan, Universiti Pendidikan Sultan Idris (UPSI)	muqsith@ftv.upsi.edu.my 0176033403	
11	Dr. Izhar Abdul Aziz	3D Gens Sdn. Bhd	izhar@3dgens.com 0132469291	
12	Encik Mohd Zaharul Bin Zaharudin	Sirim. Bhd.	zaharul@sirim.my 013-8985158	
13	Encik M Subki Bin Ahmad Fadzil	Petronas ~~Global~~ Technical Solutions Sdn. Bhd.	Msubki_ahmadfadzil@petronas.com 0122612306	
14	Mohd Shabuddin Bin Mat Hasan	Indsys Engineering Sdn. Bhd.	Shabu.indsys@gmail.com 012-3070341	
15				

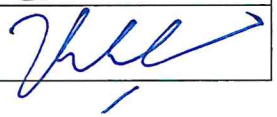
TURUT HADIR

BIL	NAMA	JAWATAN	TANDATANGAN
1	Puan Zainah Binti Rujihan	Pengarah PSA	
2	Ts. Dr. Ahmad Aftas Bin Azman	Timbalan Pengarah PSA	
3	Encik Muhammad Faiz Bin Abdullah	Ketua Jabatan Kejuruteraan Mekanikal	
4	Encik Mohd Sharizan Bin Mohd Sharif	Ketua Program Diploma Kejuruteraan Mekanikal (DKM)	
5	Ts. Muhammad Hanif Bin Selamat	Ketua Program Diploma Kejuruteraan Mekanikal (DMP)	

6	Puan Nurus Sadiqin Binti Abdul Razak Khan	Ketua Program Sijil Penyenggaraan Mekanikal Mekanikal (KMK)	
7	Puan Suaiza Binti Khairi	Penyelaras K1 JKM	
8	Puan Noor Haznida Binti Abu Bakar	Penyelaras K2 JKM	
9	Dr. Norasiah Binti Muhammad	Penyelaras K4 JKM	
10	Puan Nur Farahaizan Binti Idris	Penyelaras K5 JKM	
11	Encik Ahmad Fakaruddin Bin Mohd Fauzi	Penyelaras K6 JKM	
12	Ts. Wan Majdah Binti Ton Mamat	Penyelaras K7 JKM	
13	Ts. Noorazlan Bin Mohd Samsudin	Penyelaras Keusahawanan JKM	
14	Dr. Khairulnizam Bin Kasim	Penyelaras Pengantarabangsaan JKM	
15	Encik Mohd Zulkarnaen Bin Mohd Ibrahim	Penyelaras Kurikulum JKM	
16	Encik Mohd Nasir Bin Kamaruddin	Penyelaras Pentaksiran JKM	
17	Puan Norlidawati Binti Mohamad	Penyelaras Moderasi JKM	
18	Cik Haslinda Binti Abu Saman	Penyelaras Promosi JKM	
19	Encik Bryan Hee Tzekeon	Penyelaras Promosi JKM	

20	Puan Norsaáidah Binti Saáid	Penyelaras EKSA JKM	

PENCATAT MINIT

BIL	NAMA	JAWATAN	TANDATANGAN
1	Puan Shariza Azwin Binti Yahya	Pensyarah Utama, JKM	
2	Puan Amalina Kamilah Binti Ibrahim	Penyelaras Kualiti JKM	

MAKLUMBALAS MINIT MESYUARAT
MESYUARAT JAWATANKUASA PENASIHAT INDUSTRI (JPI)
JABATAN KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH (PSA)

BIL	PERKARA	TINDAKAN	MAKLUMBALAS
2.2	En. Ahmad Zaidi Bin Md. Zain dari Agromind Solution Sdn. Bhd. bertanya kepada pihak program bagaimana cara untuk memastikan program yang ditawarkan adalah relevan dengan keperluan industri.	**Ketua Program DKM, DMP dan KMK**	KP DKM - Kurikulum akan disemak setiap 5 tahun berdasarkan maklumbalas pemegangtaruh antaranya dari pihak industri sendiri. Antara program yang melibatkan pihak institusi dan industri adalah seperti berikut : 1. Mesyuarat Penasihat Industri Program (IAP) 2. INDUSTRY EXPERT ENRICHMENT PROGRAM (IEEP) 3. Sangkutan Industri Pensyarah (SIP) 4. Industry ON Campus (IOC) KP DMP - Tindakan meyemak semula kurikulum bersama industri dan bahagian kurikulum JPPKK KP KMK - Program memastikan kerelevanan dengan industri melalui penambahbaikan kurikulum secara berkala setiap dua tahun (CQI). Input diperoleh daripada kolaborasi dengan industri melalui

			kerjasama dan perbincangan dengan syarikat serta pakar industri, mesyuarat Industrial Advisory Committee (IAC) yang melibatkan wakil industri dalam perbincangan kurikulum, serta maklum balas syarikat semasa latihan industri bagi menilai kesesuaian kemahiran pelajar dengan keperluan pekerjaan sebenar.
4.3	En. Ahmad Zaidi Bin Md. Zain mengemukakan pertanyaan mengenai peratusan kebolehpasaran graduan yang **bekerja dalam bidang program DKM yang terkini,** berdasarkan data *Graduate Employability* (GE) yang telah dibentangkan.	**(K5)**	GE bekerja dalam bidang bagi tahun 2024: KJA: 57.10% DKM: 50.00% DMP: 31.60% GE bekerja dalam bidang bagi tahun 2023: KJA: - DKM: 44.00% DMP: 54.80% GE bekerja dalam bidang bagi tahun 2022: KJA: 40.00% DKM: 51.80% DMP: 36.80% Terdapat peningkatan dalam peratusan graduan KJA yang bekerja dalam bidang, dari tahun 2022 ke 2024. Ini menunjukkan penambahbaikan dalam kebolehpasaran graduan.
4.7	Dr. Izhar Bin Abdul Aziz mencadangkan agar pensyarah lebih aktif melibatkan diri dalam	**Ketua Program DKM dan DMP**	KP DKM - program sentiasa menggalakkan pensyarah melibatkan diri dalam geran

	mendapatkan geran penyelidikan bersama pihak industri untuk memperkukuh kerjasama strategik dan memperkayakan aktiviti penyelidikan berimpak tinggi.		penyelidikan Bersama pihak indutri. Berikut adalah data geran penyelidikan yang diperolehi oleh pensyarah DKM bagi tahun 2023-2025 KP DMP -Program sentiasa menggalakkan pensyarah melibatkan diri dalam geran penyelidikan bersama pihak industri. Berikut adalah data geran penyelidikan yang diperolehi oleh pensyarah DMP bagi tahun 2023-2025. Contohnya Pensyarah dari program DMP bersama pensyarah program DKM telah berjaya memperolehi geran T-ARGS,JPPKK,KPT 2025.

NAMA PENSYARAH	NAMA GERAN	NILAI	TEMPOH	TAJUK
Dr. Norasiah Binti Muhammad Dr. Khairulnizam Bin Kassim Roslan Bin Kamaruddin Asmira Bin Ashari Mohd Sharizan Bin Mohd Sharif	T-ARGS,JPPKK,KPT	RM79870.00	12 BULAN (10 FEB – 9 FEB 2026)	Development of Automated Solar Drain Cleaning system
Dr. Mohd Elias bin Daud Asri bin Mat Desa Muhamad Faiz Bin Abdullah Teoh Thean Hin Haslinda Binti Abu Saman Fairuz Sofia Kaharuddin	T-AIGS,JPPKK,KPT	RM46120.00	12 BULAN (10 FEB – 9 FEB 2026)	Next-Generation Hydraulic Foot Jack for people with disability
Zetty Rohaiza Binti Mohd Sahak @ Ishak Ahmad Fakaruddin Bin Mohd Fauzi Somchai a/l Enoi Wan Norhaslim Binti Wan Mustafa Tengku Nur Syarah BAriah TS. Mohd Firdaus Mohd RAdzi	T-ACGS,JPPKK,KOT	RM60000.00	12 BULAN (10 FEB – 9 FEB 2026)	EZ LEmang Cookware
Zetty Rohaiza Binti Mohd Sahak @ Ishak Haslinda Binti Abu Saman	Geran Pemula Program University-Community Social Enterprise 2024	RM35000.00	18 April 2024	Universal EZ pot
Zetty Rohaiza Binti Mohd Sahak @ Ishak	PROGRAM MAINSTREAMING GRASSROOTS INNOVATION (MAGRIs)	RM69500.00	1 mei 2023 – 31 okt 2023	Projek Kekabu Pro MAchine

NAMA PENSYARAH	NAMA GERAN	NILAI	TEMPOH	TAJUK
Dr. Norasiah Binti Muhammad Dr. Khairulnizam Bin Kassim Roslan Bin Kamaruddin Asmira Bin Ashari Mohd Sharizan Bin Mohd Sharif	T-ARGS,JPPKK,KPT	RM79870.00	12 BULAN (10 FEB – 9 FEB 2026)	Development of Automated Solar Drain Cleaning system
Dr. Mohd Elias bin Daud Asri bin Mat Desa Muhamad Faiz Bin Abdullah Teoh Thean Hin Haslinda Binti Abu Saman Fairuz Sofia Kaharuddin	T-AIGS,JPPKK,KPT	RM46120.00	12 BULAN (10 FEB – 9 FEB 2026)	Next-Generation Hydraulic Foot Jack for people with disability
Zetty Rohaiza Binti Mohd Sahak @ Ishak Ahmad Fakaruddin Bin Mohd Fauzi Somchai a/l Enoi Wan Norhaslim Binti Wan Mustafa Tengku Nur Syarah BAriah TS. Mohd Firdaus Mohd RAdzi	T-ACGS,JPPKK,KOT	RM60000.00	12 BULAN (10 FEB – 9 FEB 2026)	EZ LEmang Cookware
Zetty Rohaiza Binti Mohd Sahak @ Ishak Haslinda Binti Abu Saman	Geran Pemula Program University-Community Social Enterprise 2024	RM35000.00	18 April 2024	Universal EZ pot
Zetty Rohaiza Binti Mohd Sahak @ Ishak	PROGRAM MAINSTREAMING GRASSROOTS INNOVATION (MAGRIs)	RM69500.00	1 mei 2023 – 31 okt 2023	Projek Kekabu Pro MAchine

4.8	Dr. Izhar Bin Abdul Aziz telah mengemukakan maklum balas mengenai nama program Diploma Kejuruteraan Mekanikal (Pembungkusan) (DMP**)**, yang dirasakan kurang mencerminkan perkembangan terkini dalam industri. Beliau mencadangkan agar pertimbangan dilakukan untuk penjenamaan semula program ini, dengan memilih nama yang lebih moden dan relevan. Ini diharapkan dapat memberikan gambaran yang lebih tepat mengenai cabang kejuruteraan ini, sekaligus menarik minat pelajar.	**Ketua Program DMP**	-Program DMP telah mengadakan mesyuarat program pada 15 November 2024.Nama program yang baharu dicadangkan adalah DIPLOMA KEJURUTERAAN MEKANIKAL(PEMBUNGKUSAN INDUSTRI) dan proses pertukaran nama sedang diproses oleh Bahagian Kurikulum JPPKK.
4.9	Selain itu, En. Ahmad Zaidi Bin Md. Zain mencadangkan agar pihak program DMP memperkaya kandungan kurikulum dengan mengikuti perkembangan terkini dalam industri. Pengerusi mesyuarat turut mencadangkan agar **promosi program dipertingkatkan melalui platform media sosial** untuk memperluas jangkauan dan meningkatkan kesedaran. Cadangan lain turut dikemukakan oleh Encik Mohd Shabuddin Bin Mat Hasan dari Indsys Engineering Sdn. Bhd., yang mencadangkan agar pihak program DMP menjalankan kajian pasaran terlebih dahulu sebelum melaksanakan penjenamaan semula nama program bagi memastikan kesesuaian dan keberkesanannya.	**Ketua Program DMP**	Program DMP telah memperbaharui kurikulum dan dalam proses penilaian Bahagian Kurikulum JPPKK. Promosi membuat bahan video PODCAST secara langsung menerusi Facebook pada 24 April 2024. Mewujudkan akaun Tiktok Mechapack Polycc sejak bulan Mac 2024. Program DMP telah memohon untuk mengadakan promosi ke sekolah di negeri Selangor melalui Jabatan Pendidikan Negeri Selangor,namun sehingga akhir tahun 2024 tiada respon rasmi diterima.

<table>
<tr><td></td><td></td><td></td><td>Pihak JPN Selangor telah mengadakan Program Sukses di PSA bulan Julai 2024.

Program DMP juga telah dilawati oleh para pelajar tingkatan 5 SMK Bukit Mendi ,Pahang pada 24/7/24</td></tr>
<tr><td>4.12</td><td>Berdasarkan maklum balas yang diterima, hanya seorang wakil industri yang tidak bersetuju dengan cadangan nama baru kursus tersebut, manakala sembilan wakil industri lain bersetuju dengan cadangan nama baru. Walau bagaimanapun, bagi kursus Kemahiran Penyamanan Udara 1 dan 2, penukaran nama kepada yang baru perlu diselaraskan dengan terma sistem Heating, Ventilation, and Air Conditioning (HVAC System) untuk memastikan keselarasan dengan standard industri yang terkini.</td><td>Ketua Program KMK</td><td>Berikut merupakan dapatan maklum balas dimana majoriti bersetuju dengan penamaan baru berikut:
<table>
<tr><th>Nama Lama</th><th>Nama Baru</th></tr>
<tr><td>Kemahiran Kimpalan Arka</td><td>Teknologi Kimpalan Arka Logam Berperisai</td></tr>
<tr><td>Kemahiran Kimpalan MIG</td><td>Teknologi Kimpalan Arka Gas Logam</td></tr>
<tr><td>Kemahiran Kimpalan TIG</td><td>Teknologi Kimpalan Arka Gas Tungsten</td></tr>
<tr><td>Kemahiran Mesin</td><td>Teknologi Pemesinan Am</td></tr>
<tr><td>Kemahiran Penyaman Udara 1</td><td>Teknologi Penyamanan Udara 1</td></tr>
<tr><td>Kemahiran Penyaman Udara 2</td><td>Teknologi Penyamanan Udara 2</td></tr>
<tr><td>Kemahiran Penyenggaraan Motorsikal</td><td>Teknologi Penyenggaraan Motorsikal</td></tr>
<tr><td>Kemahiran Penyenggaraan Kereta</td><td>Teknologi Penyenggaraan Kereta</td></tr>
</table>
Bagi kursus Teknologi Penyamanan Udara 1 dan 2, kajian lebih menyeluruh bersama ILKA dan pakar akademik akan dilakukan bagi menilai kesesuaian penggunaan terma yang betul, selaras dengan sistem Heating, Ventilation, and Air Conditioning (HVAC System) serta standard industri terkini.</td></tr>
<tr><td>5.2</td><td>En. Ahmad Zaidi Bin Md. Zain ingin mengetahui bilangan pensyarah JKM yang mempunyai sijil profesional dan pengalaman industri. Beliau mencadangkan pihak institusi menghantar pensyarah untuk memperoleh sijil profesional daripada badan profesional yang diiktiraf selain CIAST.</td><td>Ketua Program DKM, DMP dan KMK

(K3)</td><td>KP KMK - seramai 4 orang pensyarah KMK mempunyai sijil professional manakala seramai 2 daripadanya pernah terlibat di Industri

KP DKM - seramai 17 orang pensyarah DKM mempunyai sijil professional</td></tr>
</table>

			manakala seramai 18 orang pernah terlibat di Industri KP DMP -Seramai 13 orang pensyarah DMP mempunyai sijil professional dalam bidang berkaitan mekanikal dan IOT. Pengumpulan maklumat keperluan kursus sedang dilakukan dalam memastikan pensyarah mendapat sijil profesional. KP KMK -Program komited dalam menyokong penglibatan pensyarah dalam persijilan dan pentauliahan profesional bagi memastikan kepakaran mereka selari dengan keperluan industri. Sejajar dengan usaha ini, pada tahun 2024, program telah melaksanakan kursus peningkatan kemahiran kepada: · 4 orang pensyarah dalam bidang Penyaman Udara dan Persijilan CSTP di ILP KL. · 4 orang pensyarah dalam bidang automotif di ILP KL. · 15 orang pensyarah dalam Program Reskilling Bahasa Isyarat Teknikal bersama Malaysia Federation of Deaf (MFD).

			Usaha ini akan diteruskan bagi memastikan pensyarah kekal berkemahiran dan relevan dengan perkembangan industri
5.3	Encik Mohd Arbain B. Mohd dari Pautan Legasi Sdn. Bhd juga mencadangkan pensyarah mengambil sijil profesional dengan tempoh yang lebih panjang dan relevan bagi memastikan pensyarah memiliki pengetahuan terkini yang mendalam, selaras dengan keperluan industri terkini.	**Ketua Program DKM, DMP dan KMK** **(K3)**	KP DKM -Program telah memberi cadangan yang dikemukan dalam platform Sistem Maklum Balas Pemegang Taruh Politeknik dan Kolej Komuniti (PFRS) untuk tindakan JPPKK KP DMP -Pengumpulan maklumat keperluan kursus sedang dilakukan dalam memastikan pensyarah mendapat sijil profesional. KP KMK - Pihak JPPKK telah menyediakan program pentauliahan professional selama 92 hari untuk pensyarah, namun penyertaan bergantung kepada kesediaan individu serta kesesuaian persijilan yang ditawarkan dengan bidang pengajaran masing-masing. Pihak program menggalakkan pensyarah untuk menyertai pentauliahan yang relevan bagi memastikan mereka memiliki pengetahuan terkini yang sejajar dengan keperluan industri.
5.4	En. Ahmad Zaidi Bin Md. Zain mencadangkan pendedahan teknologi terkini dalam semua program pengajian kepada pelajar bagi	**Dr. Khairulnizam Bin Kasim**	Kursus berkaitan IOT/AI dan IR 4.0 telah dijalankan kepada pensyarah sepanjang tahun 2024 seperti berikut:

	memperkukuh proses PdP. Pendekatan ini bertujuan melahirkan graduan yang versatile, kompetitif, dan mampu memenuhi tuntutan serta cabaran industri melalui penguasaan kemahiran yang relevan dan terkini.		● Kursus Train the Trainer for Altair Inspire Suite (8 -17 May 2024) ● Basic Training arc welding robot, offline FD-FT Software & Robot Language (2 – 6 Sept 2024) ● Training for Installation and commissioning for 3D printer BCN3D Epsilon (14 & 15 October 2024) ● Training for Handyscan 3D silver series (3 & 4 October 2024) ● Welding simulator SIMBOTT (9 October 2024) ● Training fast evolution and user friendly using scanning electron microscope (22 – 23 october 2024) ● Kursus Laser welding WELDMART (10 october 2024) ● Artificial Intelligence Tools Chat GPT. 15 Mac 2024
5.5	Selain itu, En. Ahmad Zaidi Bin Md. Zain turut mencadangkan agar tempoh Program Sangkutan Industri Pensyarah (SIP) dilanjutkan. Langkah ini bertujuan memberi peluang kepada pensyarah untuk memperoleh lebih banyak pendedahan dan pengalaman mendalam di industri, seterusnya meningkatkan kompetensi pengajaran selaras dengan keperluan semasa.	**(K3)**	Tempoh pelaksanaan SIP ditetapkan oleh pihak Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) selaku pihak berkepentingan di peringkat pusat. Sebagai institusi pelaksana, PSA tertakluk kepada garis panduan dan arahan semasa yang ditetapkan oleh pihak JPPKK. Walau bagaimanapun, pihak PSA amat menyambut baik cadangan ini dan bersedia mengangkat syor tersebut untuk

			pertimbangan pihak berautoriti sekiranya terdapat ruang penambahbaikan pada masa akan datang.
5.13	Encik Mohd Arbain B. Mohd Yahaya mencadangkan agar pihak program melaksanakan kajian keperluan program secara terperinci, khususnya berkaitan permintaan pelajar. Kajian ini bertujuan untuk memastikan pengambilan pelajar bagi program baharu dapat diselaraskan dengan trend pasaran, sekaligus mengelakkan isu kekurangan pengambilan pelajar di masa hadapan.	**Dr. Khairulnizam Bin Kasim**	*Programme Need Analysis* (PNA) bagi penawaran program baharu iaitu Ijazah Sarjana Muda Teknologi Mekanikal dan Diploma Teknologi Mekanikal telah dijalankan bagi mengetahui permintaan pelajar dan trend pasaran. Pembentangan PERMOHONAN CADANGAN PENAWARAN PROGRAM PENGAJIAN BAHARU akan diadakan pada 25 Februari 2025.

Disediakan oleh,

(AMALINA KAMILAH BINTI IBRAHIM)
Pensyarah Kanan
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

Disahkan oleh,

(MUHAMMAD FAIZ BIN ABDULLAH)
Ketua Jabatan
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

UniKL UNIVERSITI KUALA LUMPUR

LAPORAN LAWATAN AKADEMIK DAN PENANDA ARAS KE UNIVERSITI KUALA LUMPUR MALAYSIAN SPANISH INSTITUTE (UniKL MSI)

10 Julai 2025

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

UniKL UNIVERSITI KUALA LUMPUR

LAPORAN LAWATAN AKADEMIK DAN PENANDA ARAS KE UNIVERSITI KUALA LUMPUR MALAYSIAN SPANISH INSTITUTE (UniKL MSI)

Tarikh : **10 Julai 2025**
Masa : **8.30 pagi hingga 12.00 petang**
Lokasi : **UniKL MSI (Jabatan Akademik, Bengkel Permesinan, Makmal Pembuatan Termaju, Makmal Robotik), Kulim Kedah**

Objektif:

1. Untuk memenuhi keperluan akreditasi ETAC dan seterusnya TVET yang menekankan kepada konsep penanda aras dari sudut teknikal, vokasional dan pendidikan.
2. Perkongsian pengetahuan dan kepakaran berkaitan proses pembuatan dan kandungan kursus program.
3. Membuat kajiselidik berkaitan dengan kandungan kursus DKM.
4. Melihat lebih dekat teknologi dan peralatan terkini dalam makmal yang berkaitan.
5. Pemantapan jaringan kolaborasi antara PSA dan UniMAP

Pengenalan :

Pengahargaan kepada pegawai yang terlibat dalam menjayakan Lawatan Akademik dan Penanda Aras ke UniKL MSI. Pegawai dari kedua-dua belah pihak yang terlibat adalah;

Pegawai dari Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA)

- KJKM : En. Muhammad Faiz Bin Abdullah
- Ketua Program DKM : En. Mohd Sharizan Bin Mohd Sharif
- Ketua Program DMP : En. Ts. Muhammad Hanif Bin Selamat
- Pegawai Kualiti JKM : En. Mohd Zulkarnaen Bin Mohd Ibrahim
- Pensyarah : Pn. Norsa'aidah Binti Sa'aid
- Pensyarah : Pn. Amalina Kamilah Binti Ibrahim
- Pensyarah : Pn. Noor Haznida Binti Abu Bakar
- Pensyarah : Ts. Wan Majdah Binti Ton Mamat
- Pensyarah : En. Mohd Nasir Bin Kamaruddin
- Pensyarah : En. Syahrulazmin Bin Sarmin

Pegawai dari UniKL MSI

- Dekan : Prof. Madya Ir. Dr. Mohd Nizam Bin Ahmad
- Pegawai Akademik dan Staf Teknikal UniKL MSI

Pada 10 Julai 2025, Jabatan Kejuruteraan Mekanikal (JKM) telah menganjurkan lawatan akademik dan penanda aras ke UniKL MSI, Kulim Kedah. Delegasi lawatan diketuai oleh Ketua Jabatan Kejuruteraan Mekanikal, En. Muhammad Faiz Bin Abdullah serta sepuluh (10) orang pensyarah dari Jabatan Kejuruteraan Mekanikal.

Bermula seawal jam 8.30 pagi, delegasi tiba di UniKL MSI dan di sambut oleh Dekan UniKL MSI, Prof. Madya Ir. Dr. Mohd Nizam Bin Ahmad. Setibanya di bilik mesyuarat, untuk sesi pertama, Prof. Madya Ir. Dr. Mohd Nizam mempengerusikan majlis dengan memberikan kata aluan dan meneruskan taklimat berkenaan fakulti, program yang yang ditawarkan dan akreditasi program beserta fasiliti makmal dan bengkel yang disediakan kepada para pelajar. Selain itu, pelawat delegasi juga ditayangkan video ringkas mengenai pencapaian fakulti berkenaan. Sesi taklimat ini diteruskan dengan ucapan penghargaan dari wakil delegasi iaitu KJM PSA selaku ketua delegasi bagi lawatan ini.

Sesi Taklimat dan Perkongsian Ilmu di Bilik Mesyuarat Fakulti.

Selain daripada itu, terdapat perbincangan beraitan dengan beberapa kursus antara pensyarah PSA dan UniKL MSI. Antara kursus yang terlibat adalah *Engineering Drawing, Strength of Material, Project* dan *Pneumatic & Hidraulic.*

KP DKM juga telah mengedarkan soal selidik kepada pensyarah UniKL MSI bagi memberi pandangan dan komen terhadap struktur program DKM dan kandungan kursus. Hasil maklumbalas soal selidik adalah seperti berikut :

Lecturer	program	1	2	3	4		MAKLUMBALAS INSTITUSI
		1.Kandungan pengenalan dan sinopsis memberi gambaran yang tepat tentang kandungan program	2.Kompetensi yang dinyatakan dalam PEO merangkumi praktikal, intelektual dan kemahiran generik yang menepati keperluan industri	3.Kompetensi yang dinyatakan dalam PLO merangkumi kemahiran, pengetahuan dan kemahiran generic yang menepati keperluan industri bagi bidang berkaitan	4.Penawaran kursus-kursus untuk program ini adalah SESUAI/BERTEPATAN mengikut semester yang dicadangkan	COMMENT 1	
Noorhelinahani Bt Abu Bakar	DKM	SETUJU	SETUJU	SETUJU	SETUJU	PLO 11 spesific to Mechanical Eng. Refer *	

Maklumbalas Program

Lecturer	Subject	1	2	3	4	5			MAKLUMBALAS INSTITUSI
		Pernyataan CLO sesuai dengan keperluan program DIPLOMA KEJURUTERAAN MEKANIKAL	CLO kursus ini adalah bersesuaian dengan kehendak industri	Kandungan topik dalam kursus ini adalah relevan dan mencukupi untuk mencapai hasil pembelajaran (CLO).	Jumlah jam pertemuan kursus ini seminggu (4 jam seminggu X 14 minggu) adalah bersesuaian	Jenis aktiviti pentaksiran(assessment) adalah bersesuaian	COMMENT 1	COMMENT 2	
Fazidah Bt Saad	ENG. DRAWING	SETUJU	SETUJU	SETUJU	SETUJU	SETUJU	CLO3 have PLO7 which is not suitable for early semester students. CLO3 is more suitable to be map with PLO9 - Comunication as the indicate tahr the student need to present a project		
Dr. Faiza M. Nasir	STRENGHT	SETUJU	SETUJU	TIDAK SETUJU	SETUJU	TIDAK SETUJU	May need to consider thermalstress not be intensively covred in the sylibus	practical assessment may not be appropriate, as this is a therotical that need practice	
W. Faradiana Bt w. Maidin	PROJECT	SETUJU	SETUJU	SETUJU	SETUJU	SETUJU	overall relevant to thr industrial needs		
Shaullah Bin Shaharudin	PNEUMATIC & HIDRAULIC	SETUJU	SETUJU	SETUJU	SETUJU	SETUJU	Perlu ada penilaian bagi affective domain"untuk kursus ini bagi menilai pelajar ssama ada pelajar boleh memberi penerangan berkenaan bfar penumatic & hidraulic		

Maklumbalas Kursus

Berdasarkan maklumbalas ini, pihak JKM akan menghantar hasil maklumbalas ini kepada Sistem Maklum Balas Kurikulum (SMBK) JPPKK sebagai sebahagian daripada proses CQI bagi memantapkan lagi program di JKM.

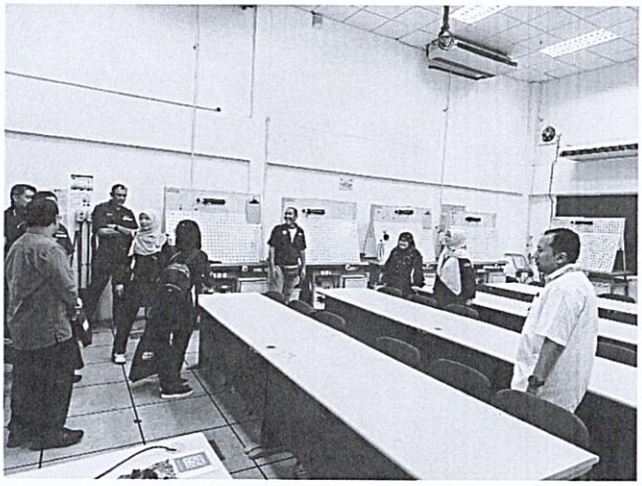
Sepanjang lawatan, para pensyarah telah diberi taklimat dan dibawa melawat ke beberapa bengkel dan makmal utama yang terdapat di UniKL MSI, antaranya adalah:

1. **Bengkel Mekatronik**

   Dilengkapi dengan modul latihan berkaitan sistem automasi, robotik, dan kawalan industri.

2. **Makmal Pneumatik & Hidraulik**

   Menyediakan peralatan latihan bagi memahami sistem pemacu bendalir dalam industri.



Pneumatic Trainer Kit

3. **Makmal Elektrik & Elektronik**

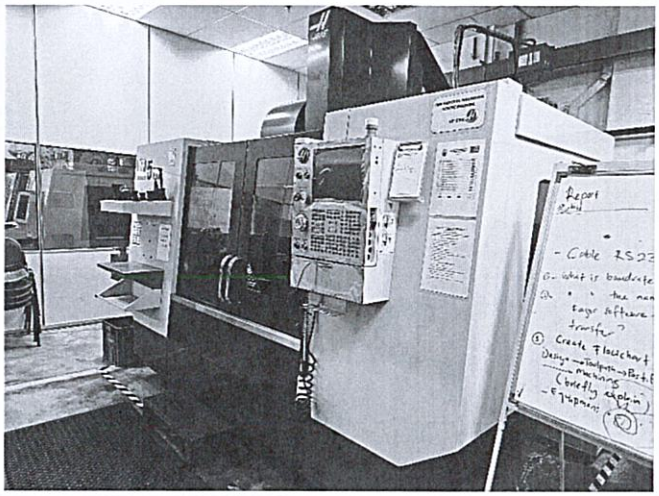
   Memberi latihan dalam pemasangan litar asas, PLC, serta microcontroller.

4. **Makmal Bahan (Materials Laboratory)**

   Digunakan untuk menguji kekuatan dan sifat bahan kejuruteraan melalui ujian mekanikal dan metallografi.

5. Makmal CAD/CAM & CNC

Dilengkapi dengan perisian reka bentuk dan mesin CNC untuk latihan dalam pembuatan berasaskan teknologi tinggi.



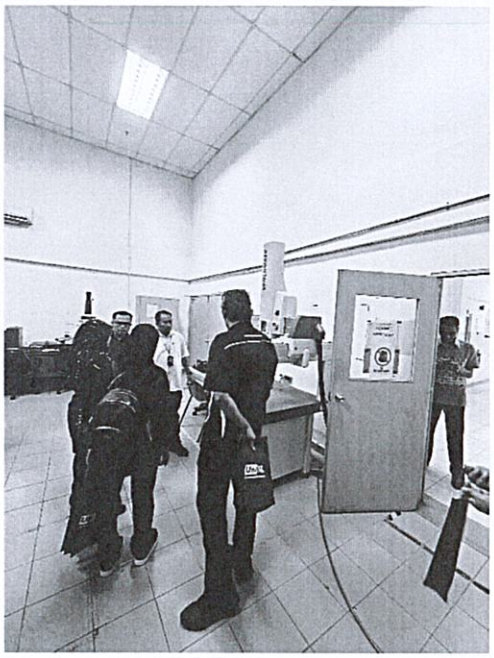
CNC Vertical Machine

6. Makmal Bahan (Materials Laboratory)

Digunakan untuk menguji kekuatan dan sifat bahan kejuruteraan melalui ujian mekanikal dan metallografi.

7. Makmal Metrologi

Menyediakan latihan pengukuran berketepatan tinggi menggunakan alat seperti CMM (Coordinate Measuring Machine) dan alat ukur digital.



Mesin CMM

Selesai sesi lawatan, sesi perbincangan di bilik mesyuarat diteruskan bersama Prof. Madya Ir. Dr. Mohd Nizam dan wakil UniKL MSI berkenaan dengan hala tuju untuk mencapai pemantapan dalam **jaringan kolaborasi antara pihak PSA khususnya JKM dan UniKL MSI**. Sesi lawatan ini diakhiri dengan penyerahan cenderamata dari PSA dan sesi fotografi.

Sesi Penyerahan Cenderamata

Sesi Bergambar Delegasi PSA JKM bersama Pengurusan Fasiliti Unimap

Secara keseluruhannya lawatan akademik dan penanda aras oleh Jabatan Kejuruteraan Mekanikal (JKM), Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) ke Universiti Kuala Lumpur Malaysian Spanish Institute (UniKL MSI) telah berjaya mencapai objektif yang ditetapkan. Delegasi PSA telah diberi pendedahan secara langsung kepada teknologi terkini, fasiliti makmal dan bengkel canggih, serta pendekatan pengajaran yang dilaksanakan oleh UniKL MSI.

Perkongsian maklumat dan perbincangan akademik antara pensyarah kedua-dua institusi telah membuka ruang kepada penambahbaikan kurikulum, khususnya bagi program Diploma Kejuruteraan Mekanikal (DKM), melalui maklum balas yang diperoleh daripada soal selidik. Selain itu, lawatan ini turut mengukuhkan jaringan kolaborasi antara PSA dan UniKL MSI, yang dijangka akan memberi manfaat berterusan dalam pembangunan program TVET dan akreditasi ETAC.

Secara keseluruhannya, lawatan ini telah memberi nilai tambah yang besar kepada aspek pengajaran, pembelajaran dan pembangunan kurikulum di JKM PSA, serta menjadi platform strategik bagi kerjasama akademik yang lebih erat pada masa akan datang.

Disediakan oleh:

(MOHD ZULKARNAEN BIN M. IBRAHIM)
Pegawai Kualiti
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

18 JULAI 2025

Disahkan oleh:

(MUHAMMAD FAIZ BIN ABDULLAH)
Ketua Jabatan
Jabatan Kejuruteraan Mekanikal
Politeknik Sultan Salahuddin Abdul Aziz Shah

18/7/25

LAPORAN LAWATAN PENANDA ARAS INDUSTRI PROGRAM DIPLOMA KEJURUTERAAN MEKANIKAL(DKM) POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

TARIKH: 9 – 11 JULAI 2025

LAWATAN KE EASYPACK MACHINERY SDN BHD

TARIKH: 9 JULAI 2025

1. Objektif Lawatan

Lawatan ini diadakan dengan beberapa objektif utama, iaitu:

1.1. Meneroka Peluang Kerjasama Strategik

I. Mengkaji kemungkinan menjalin hubungan formal antara politeknik dan EasyPack Machinery dalam aspek latihan industri, pemindahan teknologi, dan penyelidikan bersama.
II. Membuka ruang untuk membangunkan kurikulum yang sentiasa relevan dengan perkembangan teknologi pembungkusan makanan moden.

1.2. Pendedahan kepada Teknologi Terkini

Mengenal pasti teknologi baharu dalam bidang pembuatan mesin, automasi, dan robotik.Memahami bagaimana teknologi Jerman diaplikasikan dalam konteks tempatan melalui reka bentuk mekanikal syarikat.

1.3. Peningkatan Nilai Program Diploma

I. Melihat peluang untuk menyepadukan pengalaman industri ke dalam program Diploma Kejuruteraan Mekanikal (Pembungkusan).
II. Menyokong hasrat politeknik untuk melahirkan graduan siap siaga industri (industry-ready graduates).

2. Hasil Dapatan

2.1. Profil & Keupayaan Syarikat

I. EasyPack Machinery Sdn. Bhd. merupakan syarikat tempatan yang menumpukan kepada pembuatan mesin pembungkusan makanan.
II. Syarikat ini juga berjaya menghasilkan robot industri buatan tempatan, membuktikan keupayaan dalam reka bentuk inovatif dan pembuatan berteknologi tinggi.
III. Fokus utama mereka adalah menyediakan mesin yang efisien, berketepatan tinggi, dan tahan lama, setanding dengan standard antarabangsa.

2.2. Peluang Latihan Industri untuk Pelajar

I. EasyPack menawarkan elaun bulanan sebanyak RM1,000, yang kompetitif berbanding banyak syarikat tempatan.
II. Pelajar turut disediakan kemudahan penginapan, sekali gus meringankan beban kos sara hidup.
III. Waktu kerja adalah 5 hari seminggu, menjadikan pengalaman latihan selaras dengan norma industri profesional.
IV. Persekitaran kerja di syarikat ini memberi peluang pelajar mengadaptasi budaya kerja sebenar termasuk disiplin, kerjasama pasukan, dan pematuhan standard keselamatan.

2.3. Teknologi & Inovasi

I. Teknologi yang digunakan adalah berasaskan teknologi Jerman, dikenali dengan kecekapan, ketahanan, dan sistem automasi yang canggih.
II. EasyPack mengintegrasikan sistem automasi dan kawalan pintar dalam reka bentuk mesin mereka.
III. Pengasas syarikat, CM Yeoh, menekankan aspek kritikal dalam pemilihan bahan pembungkusan yang mesti sesuai dengan siifat dan jenis produk makanan (kering, cecair, mudah rosak),
IV. Tahap ketahanan bahan terhadap suhu, kelembapan, dan tekanan,
V. Standard keselamatan makanan serta piawaian antarabangsa.

2.4. Keperluan Kerjasama Pendidikan- Industri

I. Syarikat menyuarakan hasrat untuk menjadikan politeknik sebagai pusat latihan tenaga kerja industri.
II. Mereka berminat melibatkan pelajar politeknik dalam projek berasaskan masalah sebenar (problem-based projects).
III. Cadangan juga dikemukakan untuk membangunkan modul latihan industri bersama yang menekankan aplikasi automasi, robotik, dan pemilihan bahan.

3. Kesimpulan

3.1. Potensi Rakan Strategik

EasyPack Machinery mempunyai keupayaan dan komitmen untuk menjadi rakan industri strategik kepada politeknik, khususnya dalam bidang pembungkusan mekanikal.

3.2. Relevansi Teknologi

- Teknologi yang digunakan sangat sejajar dengan arus perkembangan industri 4.0, merangkumi automasi pintar, penggunaan robotik, dan inovasi dalam menghasilkan mesin pembungkusan.

3.3. Manfaat kepada Politeknik & Pelajar

I. Pelajar berpeluang menjalani latihan dalam persekitaran industri sebenar yang moden dan kompetitif.
II. Kerjasama ini akan memperkukuh program Diploma Kejuruteraan Mekanikal dan Diploma Kejuruteraan Mekanikal (Pembungkusan Perindustrian) agar lebih berdaya saing di pasaran kerja.
III. Politeknik juga berpeluang membangunkan penyelidikan bersama syarikat bagi menghasilkan inovasi baru dalam bidang pembungkusan.

3.4. Cadangan Tindakan Susulan

I. Menandatangani MoU / MoA antara Politeknik dan EasyPack Machinery.
II. Membangunkan modul latihan bersama yang berfokus pada automasi, robotik, dan bahan pembungkusan.
III. Mengatur program projek penyelidikan pelajar bersama industri.

Gambar-Gambar aktiviti:

LAWATAN KE EASYPACK MACHINERY SDN BHD

TARIKH: 9 JULAI 2025

EASY PACK

LAWATAN KE KULIM HIGH TECHNOLOGY PARK (Kulim HiTech)

TARIKH: 10 JULAI 2025

2.1 Objektif Lawatan

I. Memahami keperluan semasa industri berteknologi tinggi.
II. Mengenal pasti kemahiran yang diperlukan oleh syarikat dalam sektor pembuatan termaju dan mengikut keperluan industri.
III. Menilai potensi kerjasama antara politeknik dan pihak industri dalam aspek:
IV. Kursus teknikal dan pembangunan tenaga kerja.
V. Penempatan pelajar untuk latihan industri.
VI. Peluang pekerjaan graduan dalam bidang kejuruteraan berasaskan teknologi tinggi.

2.2 Hasil Dapatan

Daripada sesi perbincangan dan lawatan, beberapa dapatan utama telah dikenalpasti:

Jaminan Peluang Pekerjaan

I. Kulim HiTech menegaskan graduan dengan kemahiran teknikal yang tepat berpotensi besar untuk diserap masuk ke dalam syarikat mereka.
II. Graduan yang mampu menguasai kemahiran praktikal lebih mendapat keutamaan berbanding hanya teori semata-mata.

2.2.2 Kemahiran Utama yang Diperlukan Industri

I. Perisian CAD – Penguasaan SolidWorks dan perisian rekabentuk lain menjadi syarat penting untuk mereka bentuk komponen berketepatan tinggi.
II. Lukisan Teknikal – Keupayaan membaca dan menterjemahkan lukisan kejuruteraan dengan tepat.
III. Pengendalian Mesin Kawalan Kualiti (CMM) – Keupayaan menggunakan Coordinate Measuring Machine untuk mengukur ketepatan komponen.
IV. Kemahiran Metrologi – Pengetahuan mendalam tentang kaedah pengukuran, standard kualiti, dan aplikasi dalam pengeluaran.
V. Simulasi Kejuruteraan Digital – Kecekapan dalam melakukan simulasi reka bentuk dan proses pengeluaran sebelum penghasilan sebenar.

2.3 Ciri Graduan yang Dicari oleh Industri

I. Boleh terus menyumbang dalam penghasilan produk berketepatan tinggi.
II. Mahir dalam teori asas tetapi lebih menonjol dalam aplikasi praktikal.
III. Memiliki pemikiran kritikal serta mampu menyelesaikan masalah teknikal secara kreatif.

2.4 Kesimpulan

I. Lawatan ke Kulim HiTech menunjukkan bahawa:
II. Terdapat ruang kerjasama yang luas antara politeknik dan industri berteknologi tinggi.
III. Penekanan perlu diberikan kepada pembangunan kurikulum politeknik agar lebih selari dengan keperluan industri.
IV. Graduan politeknik berpotensi menjadi tenaga kerja utama dalam sektor pembuatan berasaskan teknologi tinggi sekiranya dilengkapkan dengan kemahiran CAD, metrologi, simulasi digital, serta pengendalian mesin berautomasi.

2.5 Cadangan Industri kepada Politeknik

Berdasarkan perbincangan, pihak industri mengesyorkan agar politeknik melaksanakan perkara berikut:

2.5.1 Memperkasa Kursus CAD & Rekabentuk Kejuruteraan

I. Penekanan khusus pada SolidWorks dan perisian rekabentuk moden.
II. Melaksanakan projek akhir berbentuk reka bentuk komponen industri sebenar.

2.5.2 Mewujudkan Modul Metrologi & CMM

I. Modul hands-on pengendalian mesin Coordinate Measuring Machine (CMM).
II. Penekanan kepada standard ISO dalam kawalan kualiti.

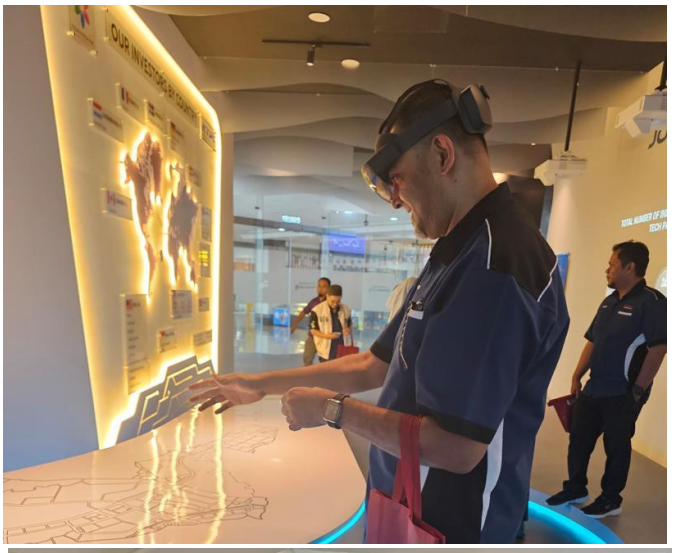
2.5.3 Menyediakan Pengalaman Simulasi Pengeluaran

I. Menggunakan perisian simulasi pengeluaran sebenar yang digunakan industri.
II. Melibatkan pelajar dalam simulasi projek pembuatan bersepadu (virtual manufacturing).
III. Menjalinkan Hubungan Industri-Politeknik
IV. Mengadakan sesi teknikal bersama pakar industri.
V. Menawarkan latihan industri jangka panjang dengan pengiktirafan pensijilan.
VI. Menjalankan program pensijilan bersama antara industri dan politeknik.

Gambar-gambar aktiviti:

LAWATAN KE KULIM HIGH TECHNOLOGY PARK (Kulim HiTech)

TARIKH: 10 JULAI 2025



Gambar-gambar aktiviti:

LAWATAN KE KULIM HIGH TECHNOLOGY PARK (Kulim HiTech)

TARIKH: 10 JULAI 2025

LAWATAN KE PENANG SKILLS DEVELOPMENT CENTRE (PSDC)

TARIKH: 11 JULAI 2025

3.1 Objektif Lawatan

i. Meninjau pendekatan PSDC dalam melaksanakan pembangunan tenaga kerja berkemahiran tinggi melalui latihan berbasis industri.

ii. Mengenal pasti peralatan serta kemudahan pembelajaran yang menyokong proses pengajaran dan pembelajaran (P&P) berkesan.

iii. Menganalisis bagaimana PSDC menyesuaikan modul latihan mereka dengan keperluan Revolusi Industri 4.0.

3.2 Hasil Dapatan

1. **Peranan PSDC**

    i. PSDC berfungsi sebagai pusat latihan berasaskan industri yang menempatkan pelbagai mesin terkini.

    ii. Antara peralatan yang digunakan termasuk mesin CNC, sistem automasi, dan mesin CMM yang relevan dengan amalan industri sebenar.

2. **Pendekatan Latihan**

    i. Penekanan diberikan kepada pembelajaran secara praktikal (hands-on).

    ii. Modul pembelajaran dirangka bagi memastikan pelajar menguasai kemahiran teknikal sebenar di lapangan.

3. **Penerapan Elemen IR4.0**

    - Dalam era Revolusi Industri 4.0, PSDC menekankan kepentingan kemahiran berikut:

        i. Pengendalian mesin pintar dan automasi.

        ii. Kefahaman sistem automatik moden.

        iii. Keupayaan membaca dan menganalisis data ukuran dengan ketepatan tinggi.

3.3 Kesimpulan

i. PSDC merupakan contoh pusat latihan teknikal yang sejajar dengan keperluan industri semasa.

ii. Lawatan ini memberi inspirasi kepada Politeknik untuk:

- Memperkukuh pendekatan hands-on.
- Memperluaskan akses pelajar kepada teknologi sebenar.
- Mengambil contoh strategi PSDC dalam melahirkan graduan yang kompeten.

3.4 Cadangan Industri kepada Politeknik

3.4.1 Menambah baik kemudahan makmal dengan peralatan pengukuran moden dan automasi terkini

i. Makmal politeknik perlu dilengkapi dengan mesin dan peralatan terkini seperti CNC generasi baharu, robot automasi, sensor pintar, dan mesin pengukuran koordinat (CMM).

ii. Peralatan ini akan membolehkan pelajar berlatih dengan teknologi sebenar yang digunakan dalam industri, sekali gus mengurangkan jurang antara pembelajaran di institusi dan realiti pekerjaan.

iii. Kemudahan ini juga boleh digunakan untuk tujuan penyelidikan dan pembangunan (R&D), khususnya projek pelajar akhir tahun yang melibatkan inovasi produk atau proses pengeluaran.

3.4.2 Menjalin kerjasama latihan pensyarah dan pelajar secara berkala di PSDC

I. Kerjasama boleh berbentuk program latihan jangka pendek, lawatan teknikal, internship, atau penempatan pensyarah di PSDC.

II. Pensyarah yang mengikuti latihan industri akan mendapat pendedahan langsung terhadap teknologi terkini serta trend keperluan kemahiran dalam pasaran kerja. Hal ini membolehkan mereka mengemas kini kaedah pengajaran selari dengan keperluan industri.

III. Pelajar pula boleh menjalani program “dual training” iaitu belajar teori di politeknik dan menguasai praktikal di pusat latihan berasaskan industri seperti PSDC.

3.4.3 Menyusun semula kurikulum agar lebih berorientasikan kemahiran industri

I. Kandungan kurikulum perlu disemak semula dengan menekankan elemen hands-on, penyelesaian masalah teknikal, dan projek berasaskan industri sebenar.

II. Kursus tambahan seperti automasi industri, data analitik untuk pembuatan, dan aplikasi kecerdasan buatan (AI) dalam sistem pengeluaran wajar dimasukkan.

III. Kurikulum juga perlu memberi penekanan kepada kemahiran insaniah (soft skills) seperti komunikasi teknikal, kerja berpasukan, serta pengurusan projek, yang sangat dihargai oleh majikan.

3.4.4 Menawarkan modul baharu seperti pengurusan kualiti berasaskan data metrologi

I. Modul ini memberi tumpuan kepada pengumpulan, analisis, dan interpretasi data metrologi bagi memastikan kawalan kualiti produk.

II. Pelajar akan didedahkan kepada statistical process control (SPC), quality assurance system, dan penggunaan perisian metrologi yang banyak digunakan dalam industri pembuatan berteknologi tinggi.

III. Kemahiran ini bukan sahaja meningkatkan kebolehpasaran pelajar tetapi juga membantu industri dalam meningkatkan kecekapan operasi serta mengurangkan kos kecacatan produk.

Gambar-gambar aktiviti:

LAWATAN KE PENANG SKILLS DEVELOPMENT CENTRE (PSDC)

TARIKH: 11 JULAI 2025

Gambar-gambar aktiviti:

LAWATAN KE PENANG SKILLS DEVELOPMENT CENTRE (PSDC)

TARIKH: 11 JULAI 2025

Disediakan oleh:

.....

MOHD SHARIZAN BIN MOHD SHARIF
KETUA PROGRAM
DIPLOMA KEJURUTERAAN MEKANIKAL
POLITEKNIK SULTAN SALAHUDDIN
ABDUL AZIZ SHAH

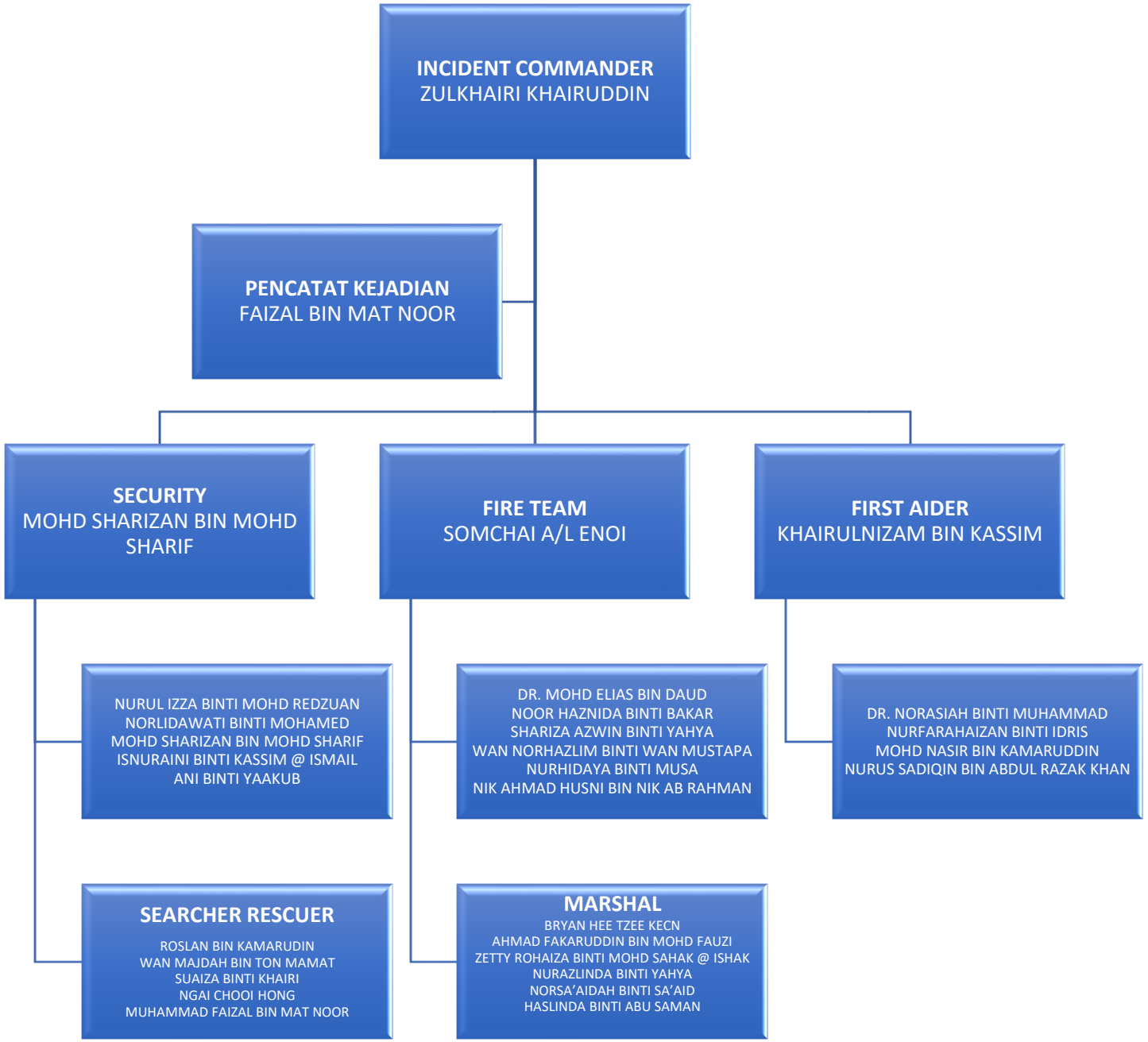
(Mohd Sharizan bin Mohd Sharif)

Tarikh: 1 Ogos 2025

Disahkan oleh:

.....

(Muhammad Faiz bin Abdullah)

Tarikh: 1 Ogos 2025

CARTA ORGANISASI EMERGENCY RESPONSE TEAM 2025 JABATAN KEJURUTERAAN MEKANIKAL