POLITEKNIK MALAYSIA
SANDAKAN

STUDENT GUIDEBOOK

DIPLOMA IN AQUACULTURE TECHNOLOGY

PERAKUAN

BUKU PANDUAN PROGRAM
DIPLOMA TEKNOLOGI AKUAKULTUR
2025

Disunting dan disusunatur oleh:

Ts. Hasmidah binti Md Isa

Ts. Imran Affandi Bin Baki

Mohd Hafizzie Bin Hajini

Diterbitkan oleh:

Politeknik Sandakan Sabah (PSS)

Education Hub, Batu 10 Jalan Sungai Batang

90000, Sandakan Sabah

STUDENTS GUIDEBOOK

DIPLOMA IN AQUACULTURE TECHNOLOGY

CONTENTS

INTRODUCTION

Department of Agrotechnology and Bio-Industry Politeknik Sandakan Sabah is one of the main departments in Politeknik Sandakan Sabah which aspires to become an excellent academic department in implementing an educational program based on Agriculture and Aquaculture. This department was established in 2012 and currently has 35 academic staff consisting of qualified and skilled academic professionals to produce and develop quality graduates to fulfill the public and private sector requirements. It is vital to keep abreast with the wants and demands of the industries to protect public trust towards the institution.

Besides transferring knowledge through intensive lectures, this department also provides direct practical exercises through teaching and learning in the field and related laboratories. The overall objective of this department is to produce graduates who are potential, competent and independent in facing global challenges.

Diploma in Aquaculture Technology is one of the main programmes offered by the department of Agrotechnology and Bio-Industry which the first batch of students registered on June 2012 session with the previous name Diploma in Aquaculture. The programme attained full accreditation from MQA on 2 Mac 2015 (MQA/FA2338).

VISION

To be the Leading-Edge TVET Institution

MISSION

To provide wide access to quality and recognized TVET programme

To empower the community through lifelong learning

To develop holistic, entrepreneurial and balanced graduates

To capitalize on smart partnership with stakeholders

STAFF OF DIPLOMA IN AQUACULTURE TECHNOLOGY
DEPARTMENT OF AGROTECHNOLOGY AND BIO-INDUSTRY

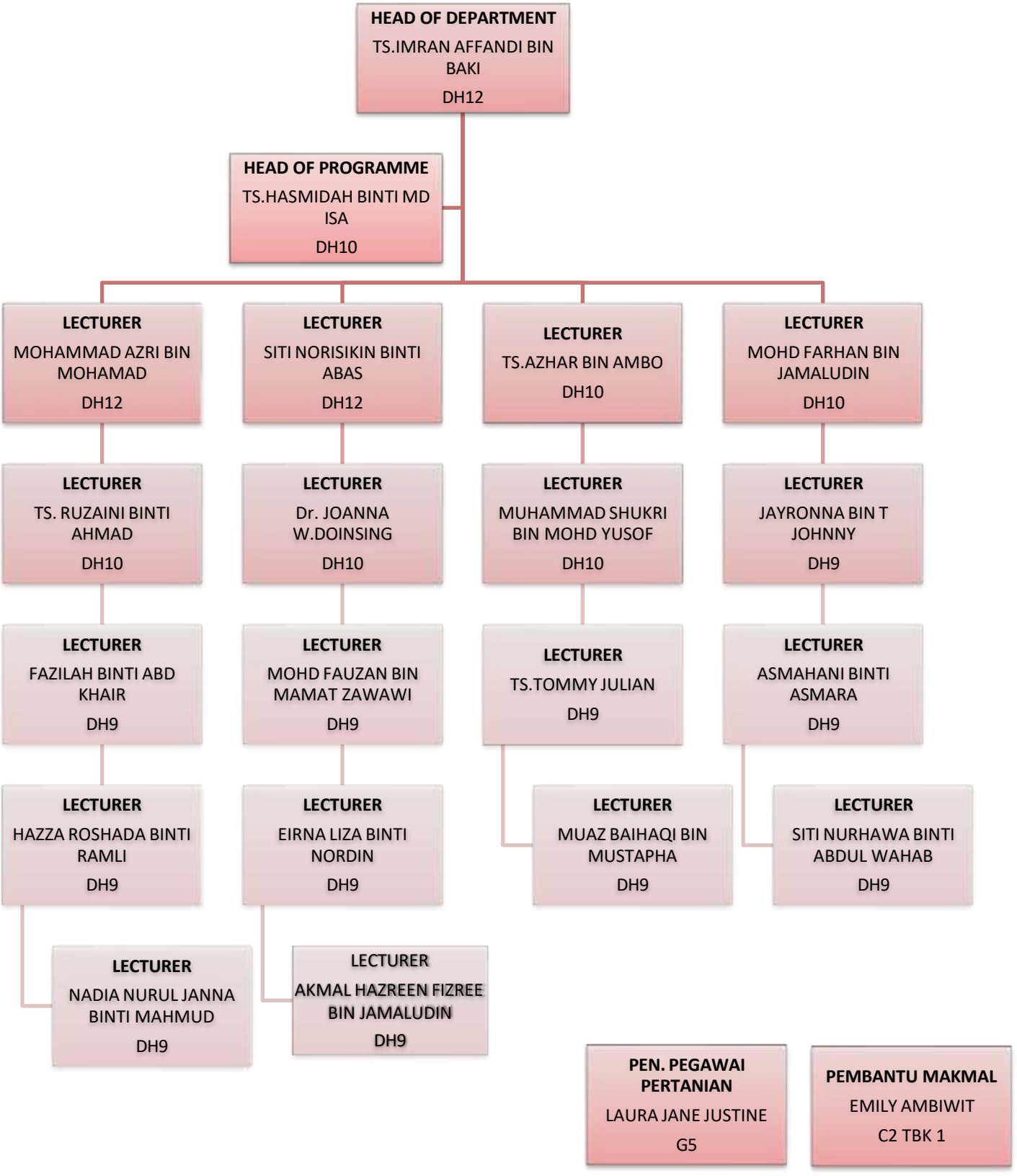
	Name	Education Background	Email
	**TS. Imran Affandi Bin Baki** Head of Department DH12	*MSc. Aquaculture (UMT)* *BSc. Agrotechnology (Aquaculture) (UMT)* *Diploma Kejuruteraan Pertanian Politeknik Kota Bahru*	imran@ pss.edu.my
	**TS. Hasmidah Binti Md. Isa** Head of Programme DH10	*MSc. Ecology and Marine Biology (UPM)* *BSc. Agrotechnology (Aquaculture) (UMT)* *Diploma in Fisheries (UPM)*	hasmidah@ pss.edu.my
	**TS. Azhar Bin Ambo** PPPT DH10	*BSc. Aquaculture (UMS)*	azhar@ pss.edu.my
	**Mohd Farhan Bin Jamaludin** PPPT DH10	*BSc. Agrotechnology (Aquaculture) (UMT)*	mohdfarhan@ pss.edu.my
	**Siti Norisikin Binti Abas** PPPT DH12	*MSc. Aquaculture (UMT)* *BSc. Marine and Freshwater Biology (University of Hull, UK)* *Diploma in Fisheries (UMT)*	norasikin.abas@ pss.edu.my

	Name	Education Background	Email
	**Mohamad Azri Bin Mohammad** PPPT DH12	*MSc. Aquaculture (UMT)* *BSc. Agrotechnology (Aquaculture) (UMT)* *Diploma in Fisheries (UMT)*	azri.mohammad@pss.edu.my
	**TS. Ruzaini binti Ahmad** PPPT DH10	*MSc. Aquaculture (UMS)* *BSc. Aquaculture (UMS)*	ruzaini@pss.edu.my
	**Dr. Joanna W Doinsing** PPPT DH10	*Doctor of Philosophy in Fisheries (Aquaculture) (UMS)* *MSc. Marine Science (UMS)* *BSc. Science Biotechnology (UMS)*	joanna@pss.edu.my
	**Muhammad Shukri Bin Mohd Yusof** PPPT DH10	*MSc. Zoology (USM)* *BSc. Animal Biology (USM)*	mshukriyusof@pss.edu.my
	**Mohd Fauzan Bin Mamat Zawawi** PPPT DH9	*MSc. Aquaculture (UMT)* *BSc. Applied Science (Fishery) (UMT)* *Diploma in Fisheries (UMT)*	fauzan@pss.edu.my

	Name	Education Background	Email
	**Jayronna Bin T Johnny** PPPT DH9	*BSc. Aquaculture (UMS)*	jayronna@ pss.edu.my
	**TS.Tommy Julian** PPPT DH9	*BSc. Aquaculture (UMS)*	tommy@ pss.edu.my
	**Asmahani Binti Asmara** PPPT DH9	*BSc. Aquaculture (UMS)*	asmahani@ pss.edu.my
	**Fazilah Binti Abd Khair** PPPT DH9	*BSc. Agrotechnology (Aquaculture) (UMT)*	fazilah@ pss.edu.my
	**Eirna Liza Binti Nordin** PPPT DH9	*MSc. In Science Fish Health Management (UPM)* *BSc. Agrotechnology (Aquaculture) (UMT)*	eirnaliza@ pss.edu.my

	Name	Education Background	Email
	**Muaz Baihaqi Bin Mustapha** PPPT DH9	*MSc. Food Safety and Quality Assurance (UPM)* *BSc. Food Biotechnology (USIM)*	muazbaihaqi@pss.edumy
	**Hazza Roshada Binti Ramli** PPPT DH9	*MSc. Aquaculture (UMT)* *BSc. Agrotechnology (Aquaculture) (UMT)*	hazza.roshada@pss.edu.my
	**Siti Nurhawa Binti Abdul Wahab** PPPT DH9	*MSc. Aquaculture (UMT)* *BSc. Agrotechnology (Aquaculture) (UMT)*	nurhawa@pss.edu.my
	**Nadia Nurul Janna binti Mahmud** PPPT DH9	*BSc. Aquaculture (UMS)*	nadia@pss.edu.my
	**Akmal Hazreen Fizree bin Jamaludin** PPPT DH9	*BSc. Aquaculture (UMS)*	akmal.hazreen@pss.edu.my

ORGANIZATIONAL CHART DIPLOMA IN AQUACULTURE TECHNOLOGY



PROGRAMMES

Politeknik Sandakan Sabah offers **TWO** Diploma programmes under the Department of Agrotechnology and Bio-Industry:

1. Diploma in Agrotechnology
2. Diploma in Aquaculture Technology

3. **Duration of study:**

Course	Period	Semester*
Diploma in Agrotechnology	3 years	Min. SIX (6) semester Max. NINE (9) semester
Diploma in Aquaculture Technology	3 years	Min. SIX (6) semester Max. NINE (9) semester

* 1 year consists of 2 semesters.

ENTRY REQUIREMENT

SPM GRADUATE

1. Malaysian citizen
2. Pass Sijil Pelajaran Malaysia (SPM) or equivalent
    a. Pass Bahasa Melayu
    b. Pass Sejarah (for SPM leavers from 2013 and above)
    c. THREE (3) credits for the following subjects:
        i. ONE (1) subject from Science/ Technology/ Vocational
        ii. TWO (2) others subject
3. Not a disabled person who is unable to conduct laboratory work.

KOLEJ KOMUNITI CERTIFICATE GRADUATE

1. Malaysian citizen
2. Pass in Sijil Pelajaran Malaysia (SPM)/equivalence with at least **ONE (1)** credit.
3. Pass in **ONE (1)** of the following Kolej Komuniti certificate:
   a. Certificate in Agro Industry
   b. Certificate in Aquaculture

MALAYSIAN SKILLS CERTIFICATE (SKM) CANDIDATE

1. Malaysian citizen
2. Pass in Certificate in Agriculture from Malaysia Agriculture Institute (IP).

PROGRAMME INFORMATION

DIPLOMA IN AQUACULTURE TECHNOLOGY

INTRODUCTION

According to the National Food Security and National Agro-Food Policy 2.0, aquaculture has been identified as one of the most competitive industries which can contribute to higher Malaysian economic growth. There is a great potential and challenge to increase the value chain by strengthening human capital through Technical and Vocational Education and Training (TVET) especially in dealing with the Fourth Industrial Revolution (4.0 IR). Hence, the sustainable aquaculture development should meet the National Fourth Industrial Revolution Policy and Sustainable Development Goals. Therefore, Department Of Polytechnic And Community College Education has established a Diploma in Aquaculture Technology for Polytechnic students. Diploma in Aquaculture Technology is envisioned to produce trained TVET personnel which could assist in the development of the aquaculture industry. The industry serves many purposes, including food production for human consumption from breeding to grow out activities, rebuild populations of threatened and endangered species, habitat restoration and wild stock enhancement. This programme is aimed to equip students with the aquaculture technology that is encouraged in the learning process and the soft skills related to the diverse field of aquaculture industry.

SYNOPSIS

Diploma in Aquaculture Technology (DTQ) is a full-time programme that consists of five (5) academic semesters and one (1) semester for industrial training. This programme refers to the process of cultivating, breeding and harvesting different aquatic organisms in controlled aquatic environments for any commercial, recreational or public purposes. The programme shall expose students to entire aspects of aquaculture practices including the comprehensive training in hatcheries and grow out, starting from the stage of fish breeding to harvesting and marketing. Students shall further expose themselves to the real world of the aquaculture industry to gain precious experience and strengthen fundamental knowledge. Hence, it will provide students with a good foundation of knowledge, skills and orientation to adapt to new technologies and challenges.

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JOB PROSPECT

The graduates of Diploma in Aquaculture Technology should be able to practise in the aquaculture field or related areas. They could involve in the entrepreneurship through lifelong learning for career advancement and contribute for the society.

The knowledge and skills acquired from the programme enable the studentsto find positions

in the job market as:

a. Certified Aquaculture Farm Technician

b. Assistant Fisheries Officer

c. Aquaculture Lab Technician

d. Assistant Farm Quality Control Officer

e. Assistant Marketing Executive

f. Aquaculture Entrepreneur

PROGRAMME AIM

The programme aims to cater for the demand of National Agro-Food Policy 2.0 (2021 –2030) by producing an aquaculture expertise in supporting the country's aspiration to ensure the competitiveness and sustainability of the aquaculture industry.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

The Diploma in Aquaculture Technology should be able to produce aquaculturist who are capable to:

PEO1: apply fundamental knowledge, understanding and technical skills of aquaculture in identifying issues and assisting to provide technical solution in aquaculture production.

PEO2: integrate values, attitudes, professionalism and social skills in engaging with society and stakeholders in aquaculture.

PEO3: alternately adopt the roles of a leader and a team member, and communicate effectively in assisting the solutions for aquaculture challenges in community.

PEO4: engage in aquaculture production activities to embark entrepreneurial skills for career advancement and innovatively assist to manage resources and information.

PROGRAMME LEARNING OUTCOMES (PLO)

Upon completion of this programme, students should be able to:

PLO1: possess relevant knowledge of technology fundamentals on well-defined procedures and practices in the aquaculture field.

PLO2: propose and employ current tools and techniques to resolve well-defined problems.

PLO3: establish basic investigative and significant thinking abilities to resolve well-defined problems in the aquaculture field.

PLO4: communicate and clearly explain several viewpoints for social, academic, and professional purposes.

PLO5: illustrate the understanding of the issues related to the society and the subsequent responsibilities appropriate to the extended well-defined technology practices.

PLO6: acknowledge the requirement of career establishment and to employ independent continuing learning in specialized technical knowledge.

PLO7: illustrate a consciousness of management and technopreneurship routine in real perspective.

PLO8: illustrate ethical awareness and professionalism.

PLO9: illustrate leadership character and work efficiently in diverse technical teams.

PROGRAMME STRUCTURE FOR DIPLOMA IN AQUACULTURE TECHNOLOGY

SEMESTER 1						
NO.	COURSE CODE	COURSE	L	P	T	C
1	MPU21072	Penghayatan Etika dan Peradaban	14	0	28	2
2	MPU24XX1	Unit Beruniform 1	0	28	0	1
3	MPU24031	Sukan 1				
4	MPU24041	Kelab/Persatuan 1				
5	DUE10112	Communicative English 1	14	0	28	2
6	DBS10052	Biological Science	14	28	0	2
7	DBS10062	Agricultural Chemistry	14	28	0	2
8	DBM10213	Mathematics for Technology	28	0	28	3
9	DYQ10223	Introduction to Aquaculture	28	0	28	3
TOTAL			308			15

SEMESTER 2						
NO.	COURSE CODE	COURSE	L	P	T	C
1	MPU23182	Sains, Teknologi dan Kejuruteraan Dalam Islam*	14	0	28	2
2	MPU23172	Nilai Masyarakat Malaysia**				
3	MPU24XX1	Unit Beruniform 2	0	28	0	1
4	MPU24051	Sukan 2				
5	MPU24061	Kelab/Persatuan 2				
6	DUW10032	Occupational, Safety and Health	28	0	0	2
7	DYQ20233	Water Quality and Soil Management	28	28	0	3
8	DYQ20243	Fish Disease Management	28	28	0	3
9	DYQ20253	Fish Biology	28	28	0	3
10	DYQ20263	Live Feed Culture	28	28	0	3
TOTAL			322			17

SEMESTER 3						
NO.	COURSE CODE	COURSE	L	P	T	C
1	MPU22062	Entrepreneurship	14	0	28	2
2	DUE30122	Communicative English 2	14	0	28	2
3	DUG30032	Green Technology Compliance	14	28	0	2
4	DYQ30273	Aquaculture Feed and Nutrition	28	28	0	3
5	DYQ30283	Breeding and Fry Management	28	28	0	3
6	DYQ30293	Hatchery Practice	0	84	0	3
7	DYQ30303	Fish Post Harvest and Processing	14	56	0	3
TOTAL			392			18

SEMESTER 4						
NO.	COURSE CODE	COURSE	L	P	T	C
1	MPU22071	Kursus Integriti dan Anti Rasuah (KIAR)	0	0	28	1
2	DYQ40313	Aquaculture System Technology	28	28	0	3
3	DYQ40323	Grow Out Culture	28	28	0	3
4	DYQ40333	Aquaculture Farming	0	84	0	3
5	DYQ40342	Aquaculture Project Proposal	28	0	0	2
6	DYQ4XXX2	Elective 1	14	28	0	2
TOTAL			294			14

SEMESTER 5						
NO.	COURSE CODE	COURSE	L	P	T	C
1	DUE50132	Communicative English 3	14	0	28	2
	DYQ50373	Ornamental Fish Culture	14	56	0	3
2	DYQ50383	Crustacean Culture	28	28	0	3
3	DYQ50392	Urban Aquaculture	14	28	0	2
4	DYQ50404	Aquaculture Final Project	0	112	0	4
5	DYQ5XXX2	Elective 2	14	28	0	2
TOTAL			364			16

SEMESTER 6			
NO.	COURSE CODE	COURSE	CREDIT
1	DUT600710	Industrial Training	10

ELECTIVE COURSES						
NO.	COURSE CODE	COURSE	L	P	T	C
1	DYQ40352	Seaweed Culture	14	28	0	2
2	DYQ40362	Aquaculture Workshop Practice	14	28	0	2
3	DYQ50412	Water Safety	14	28	0	2
4	DYQ50422	Recreational Fishing	14	28	0	2

COMPONENT	CREDIT HOURS	%
i. General	15	17 %
ii. Technology	75	83 %
TOTAL CREDIT HOURS	90	100 %

TECHNOLOGY COMPONENT	CONTACT HOURS	%
i. Lecture (Theory Component)	560	27 %
ii. Practical (Practical Component)	1,268	61 %
iii. Tutorial	252	12 %
TOTAL CONTACT HOURS	2,080	100 %

	CONTACT HOURS	%
THEORY COMPONENT	812	39 %
PRACTICAL COMPONENT	1,268	61 %

Legend:

L : Lecture, **P** : Practical / Lab, **T** : Tutorial, **O** : Others
(The numbers indicated under L, P, T & O represent the contact hours per week, to be used as a guide for time table preparation).
*For Muslim Students
**For Non-Muslim Students

Notes:

1. The minimum and maximum credit value of Electives must be referred to the programme standard or professional bodies.
2. [a]Free Electives are courses which are not included in any programme structure but if taken, will contribute towards students' CGPA, provided that institutions adhere to the Jabatan Pendidikan Politeknik & Kolej Komuniti Free Electives Guidelines.
3. [b]MPU22042 Bahasa Kebangsaan A is COMPULSORY for students who did not attain credit in Bahasa Melayu at Sijil Pelajaran Malaysia (SPM) level and will contribute to students' CGPA.
4. Co-curriculum pathways:
    a. Path 1 : Sport
    b. Path 2 : Club
    c. Path 3 : Uniform Unit

COURSE DESCRIPTION

DUE10112 - COMMUNICATIVE ENGLISH 1

COMMUNICATIVE ENGLISH 1 focuses on developing students' speaking skills to enable them to communicate effectively and confidently in group discussions and in a variety of social interactions. It is designed to provide students with appropriate reading skills to comprehend a variety of texts. The students are equipped with effective presentation skills as a preparation for academic and work purposes. The course is also designed to assist students in achieving at least level B1 of Common European Framework of Reference (CEFR).

DUE30122 - COMMUNICATIVE ENGLISH 2

COMMUNICATIVE ENGLISH 2 emphasises the skills required at the workplace to describe products or services as well as processes or procedures. It also exposes the students to the technique of a simple pitch and enables them to make and respond to enquiries and complaints. The course is also designed to assist students in achieving at least level B1 of Common European Framework of Reference (CEFR).

DUE50132 - COMMUNICATIVE ENGLISH 3

COMMUNICATIVE ENGLISH 3 aims to develop the necessary skills in students to apply the job hunting mechanics effectively in their related fields. Students will learn the basics of job hunting mechanics which include using various job search strategies, understanding job requirements, making enquiries, and preparing high impact resumes, video-resume (visumes) and cover letters. The students will develop communication skills to introduce themselves, highlight their strengths and abilities, present ideas, express opinions and respond appropriately during job interviews. The course is also designed to assist students in achieving at least B1 (high) of Common European Framework of Reference (CEFR).

DUW10032 - OCCUPATIONAL SAFETY AND HEALTH

OCCUPATIONAL SAFETY AND HEALTH Occupational Safety And Health course is designed to impart understanding of the self- regulatory concepts and provisions under the Occupational Safety & Health Act (OSHA) in Malaysia. This course presents the responsibilities of workers in implementing and complying with the safety procedures at work. Understanding of notifications of accidents, dangerous occurrences, poisoning and diseases and liability for offences will be imparted to students. This course will also provide an understanding of the key issues in OSH Management, Incident Prevention, Hazard Identification Risk Control and Risk Assessment (HIRARC), Fire Safety and First Aid, Workplace Environment and Ergonomics and guide the students gradually into this multi-disciplinary science.

MPU21072 - PENGHAYATAN ETIKA DAN PERADABAN

PENGHAYATAN ETIKA DAN PERADABAN ini menjelaskan tentang konsep etika daripada perspektif peradaban yang berbeza. Ia bertujuan bagi mengenal pasti sistem, tahap perkembangan, kemajuan dan kebudayaan merentas bangsa dalam mengukuhkan kesepaduan sosial. Selain itu, perbincangan dan perbahasan berkaitan isu-isu kontemporari dalam aspek ekonomi, politik, sosial, budaya dan alam sekitar daripada perspektif etika dan peradaban dapat melahirkan pelajar yang bermoral dan profesional. Penerapan amalan pendidikan berimpak tinggi (HIEPs) yang bersesuaian digunakan dalam penyampaian kursus ini.

MPU22062 - ENTREPRENEURSHIP

ENTREPRENEURSHIP focuses on the fundamentals and concept of entrepreneurship in order to inculcate the value and interest in students to choose entrepreneurship as a career. This course can help students to initiate creative and innovative entrepreneurial ideas. It also emphasizes on online and offline business learning in line with the changing needs of current market.

MPU22071 – KURSUS INTEGRITI DAN ANTIRASUAH

KURSUS INTEGRITI DAN ANTIRASUAH (KIAR) merangkumi konsep asas tentang nilai integriti, bentuk perbuatan rasuah dan salah guna kuasa dalam kehidupan seharian serta dalam organisasi dan langkah-langkah pencegahan rasuah.

MPU22212 - BAHASA KEBANGSAAN A

BAHASA KEBANGSAAN A menawarkan kemahiran berbahasa dari aspek mendengar, bertutur, membaca dan menulis sesuai dengan tahap intelek pelajar, serta meningkatkan kecekapan berbahasa dalam konteks rasmi dan tidak rasmi. Kursus ini mensasarkan keberhasilan pencapaian pelajar dengan sekurang-kurangnya mencapai tahap B1 berdasarkan skala pencapaian pelajar di dalam Common European Framework of Reference (CEFR).

MPU23172 - NILAI MASYARAKAT MALAYSIA

NILAI MASYARAKAT MALAYSIA membincangkan aspek sejarah pembentukan masyarakat, nilai-nilai agama, adat resam dan budaya masyarakat di Malaysia. Selain itu, pelajar dapat mempelajari tanggungjawab sebagai individu dan nilai perpaduan dalam kehidupan di samping cabaran- cabaran dalam membentuk masyarakat Malaysia yang bersatupadu dan penyayang.

MPU23182 - SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM

SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM memberi pengetahuan tentang konsep Islam sebagai al-Din dan seterusnya membincangkan konsep sains, teknologi dan kejuruteraan dalam Islam serta impaknya, pencapaiannya dalam tamadun Islam, prinsip serta peranan syariah dan etika Islam, peranan kaedah fiqh serta aplikasinya.

MPU24031 – SUKAN 1

SUKAN 1 adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif.

MPU24041 – KELAB/PERSATUAN 1

KELAB/PERSATUAN 1 memfokuskan kepada penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif.

MPU24051 – SUKAN 2

SUKAN 2 adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistik. Ia bertujuan bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif.

MPU24041 – KELAB/PERSATUAN 2

KELAB/PERSATUAN 2 memfokuskan kepada penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif.

MPU24XX1 - UNIT BERUNIFORM 1

UNIT BERUNIFORM 1 memfokuskan kepada penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif

MPU24XX1 - UNIT BERUNIFORM 2

UNIT BERUNIFORM 2 memfokuskan kepada penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif

DBM10213- MATHEMATICS FOR TECHNOLOGY

MATHEMATICS FOR TECHNOLOGY introduces students to fundamental mathematics concepts such as basic algebra, geometry, measurement, function and graph, and statistic. It provides a foundation for other courses in applied science and agricultural science programs.

DBS10052 - BIOLOGICAL SCIENCE

BIOLOGICAL SCIENCE covers knowledge of biological science, genetics, ecology, physiology and biochemical processes in plants and animals. The morphology, anatomy and taxonomy that include vegetative and reproduction system, structure and function of plants and animals will be discussed. Plant physiology covers seeds germination, growth and plant development, photosynthesis, and water relations.The plant biochemistry aspects include introduction to types and function of protein, carbohydrate, lipid, nucleic acid, enzymes reaction and its application in genetic engineering.

DBS10062 - AGRICULTURAL CHEMISTRY

AGRICULTURAL CHEMISTRY is an applied science course that covers the properties of agrochemicals component for plants and animals, usage and classification of fertilizer and pesticide, according to their chemical structures and mode of actions that have effects on soil system. This includes both organic and non-organic agrochemicals as well as the importance of safety and health in agrochemical handling and applications.

DYQ10223 - INTRODUCTION TO AQUACULTURE

INTRODUCTION TO AQUACULTURE is designed to equip students with the basic knowledge and exposure to the aquaculture industry. It covers the introduction, history, importance, regulation and certification of aquaculture industry. This course also provides students with the basic knowledge about aquaculture water sources, aquaculture system and management.

DYQ20243 - FISH DISEASE MANAGEMENT

FISH DISEASE MANAGEMENT is designed to equip students with the knowledge and understanding of the fish disease and its management in aquaculture. It deals with the symptoms shown by infected fish, pathogenic disease mainly caused by bacteria, parasites, viruses and fungi. It is also cover the non-pathogenic problem that lead to fish disease such as low water quality, nutrition imbalance and improper handling. This course also provides students with knowledge and skills in disease prevention, treatment method and regulations involved.

DYQ20233 - WATER QUALITY AND SOIL MANAGEMANT

Water Quality and Soil Management introduces the basic concepts of understanding water quality and soil management in aquaculture, and its importance in aquatic organism growth and health. It also emphasizes on the aspects of water quality parameter and soil suitability, which determines the suitability of water and soil for aquaculture. This course provides students an opportunity to handle several water quality equipment for water quality measurement and effects of soil to water quality. It also exposes students to evaluate and analyze water quality data. This course enable the students to calculate liming and fertilizer requirement for soil management. This course also provides a practical hands-on approach to soil and water treatment and management of water quality in different culture systems and hatchery.

DYQ20253 - FISH BIOLOGY

Fish Biology will provide students with the general overview of the biology of fish species in aquatic ecosystems. It focuses on the identification of relevant aquaculture species based on the external and internal morphology. This course also emphasizes the habitat preferences, feeding behaviour, growth and life cycle of fish. Students will gain practical knowledge and critical thinking skills necessary to address challenges related to fish conservation and sustainability development.

DYQ20263 - LIVE FEED CULTURE

LIVE FEED CULTURE introduces students to the knowledge and skills in live feed preparation and culture technique. This course focuses on both live feed groups of phytoplankton and zooplankton which covered both indoor and outdoor culture activities. At the end, students will be able to carry out live feed harvesting activities.

DYQ30283 - BREEDING AND FRY MANAGEMENT

Breeding and Fry Management covers broodstock maintenance to produce fish fry. This course emphasizes on various breeding methodology thus managing larvae up to juvenile stage with hands-on approach. Students will be able to conduct proper breeding techniques and fry rearing. Furthermore, students will be able to assess the maturity of broodstock, egg and fry quality to improve the production of fry in aquaculture industry.

DYQ30273 - AQUACULTURE FEED AND NUTITION

AQUACULTURE FEED AND NUTRITION introduces students to the nutrient requirement of cultured species and practices in feed and feeding. The course discusses the preparation of artificial feed based on species' nutrient requirements. The evaluation of feed quality based on feed utilization and fish performance towards the aquaculture economic efficiency for a sustainable industry.

DYQ30303 - FISH POST HARVEST AND PROCESSING

FISH POST HARVEST AND PROCESSING exposes students to the basic knowledge of fish handling, transportation and also good managerial skills in downstream industries and its packaging techniques. It focuses on current techniques in fish handling and transporting method to maintain the freshness of fish-based products. This course also requires students to produce selected downstream cottage products. It also covers some aspects of quality control and quality assurance in downstream industries.

DYQ30293 – HATCHERY PRACTICE

Hatchery Practice exposes students to a hands-on, practical approach to conducting and managing hatchery fry and fingerling production projects. Students will be able to conduct proper fry and fingerling production activities. This course covers project proposal preparation, project preparation, fry production, husbandry practice management, harvesting and packaging processes, and marketing strategies. The student will also be able to carry out a fry and fingerling production project and marketing activities.

DUG30032- GREEN TECHNOLOGY COMPLIANCE

GREEN TECHNOLOGY COMPLIANCE course is designed to introduce students with the integration of green knowledge, skills, practices and compliances in line with sustainable development goals (SDGs). Students will be exposed to related sustainable activities in achieving SDGs which also include innovation, viability and natural resources preservation. Students will also learn other areas where green technology is implemented such as energy, transport, building, water and waste management.

DYQ40342– AQUACULTURE PROJECT PROPOSAL

Project Proposal equips students with knowledge and skills to plan and execute their research proposal for a commercializable aquaculture final project. They must be able to provide and present comprehensive research proposals and its potential to be commercialized. A project proposal assignment will give students experience writing a project proposal in preparation for writing a final report.

DYQ40313 - AQUACULTURE SYSTEM AND TECHNOLOGY

AQUACULTURE SYSTEM AND TECHNOLOGY introduces students to the knowledge of technology, design and function of the system in the aquaculture facilities. It also covers technique to design the appropriate system to produce optimal production. This course also exposes students to the mode of operation and maintenance for hatchery and the basic equipment required.

DYQ40323 – GROW OUT CULTURE

Grow Out Culture introduces the knowledge and skills for grow out culture operations. This course emphasizes on grow out culture preparations, husbandry practices, feeding and harvesting activities. Students will be able to know the procedures of grow out culture from preparation until harvesting the stocks.

DYQ40333-AQUACULTURE FARMING

Aquaculture Farming exposes a hands-on practical approach to students on conducting and managing grow out culture project. This course covers integrated farming process from the proposal preparation, pond preparation, fry acclimation, stocking density, feed and feeding, daily monitoring on water quality, growth and health. It also requires student to carry out harvesting and marketing activities. Project evaluation will be made at the end of the project period.

DYQ40352 – SEAWEED CULTURE

Seaweed Culture is designed to equip students with the knowledge and skills of seaweed culture techniques. It also focuses on harvesting techniques. This course also exposes students to the commercial seaweed products.

DYQ40362- AQUACULTURE WORKSHOP PRACTICE

Aquaculture Workshop Practice will expose students with the multiskilling of technical support in the aquaculture industry. Students will be able to gain knowledge and skill of electrical wiring, fiberglass tank fabrication, glass tank fabrication and High Density Polyethylene (HDPE) lining fabrication. Students also will be exposed with disciplines of workshop safety procedures.

DYQ50373- ORNAMENTAL FISH CULTURE

Ornamental Fish Culture is conducted to equip students with the knowledge and skills in ornamental fish production. This course also covers the general biology, breeding and nursing technique, disease, quarantine, harvesting, packaging for transportation and marketing in ornamental fish culture.

DYQ50383 – CRUSTACEAN CULTURE

Crustacean Culture introduces students to the knowledge and skills in crustacean culture that focuses on freshwater prawn and others crustacean morphology, biology, site selection, grow out culture preparation and culture techniques. This course also covers basic knowledge of crustacean disease, harvesting and post-harvest handling. Students will be able to know the proper way of crustacean culture (freshwater prawn) from site selection until harvesting the stocks.

DYQ50392-URBAN AQUACULTURE

Urban Aquaculture is designed to equip students with the knowledge and understanding of various aquaculture system concepts with the implementation of latest technology. It emphasizes the concept of biofiltration nutrient cycle, recirculating aquaculture system and automation in aquaculture. This course also provides students to apply the concept of aquaponic system, aquascape and paludarium.

DYQ50404 - AQUACULTURE FINAL PROJECT

Aquaculture Final Project is a scheme to organize the use of a given quantity of resources in a specific way to achieve particular results in aquaculture project, all within a definite time. It has a precise beginning and precise end. The execution of the project requires multidisciplinary effort, mobilizing different skills and resources to achieve predetermine development objectives which will result, directly or indirectly, in new or added values or social, economic or financial benefits.

DYQ50412- WATER SAFETY

Water Safety is designed to equip students with knowledge and understanding to handle water-related activities in a safe manner. The course focuses on health condition, hazard prevention, recognition and response in the aquatic environment. This course also provides students with techniques and skills to maintain good health condition, basic aquatic skills and hydrodynamic.

DYQ50422 – RECREATIONAL FISHING

Recreational Fishing is conducted to equip students with the knowledge, skills and techniques of fishing common fish. This course covers the general fishing activities, rules and law of fishing practices and types of fishing method. The course also equips the students with the knowledge of good fishing practices.

DUT600710 - INDUSTRIAL TRAINING

INDUSTRIAL TRAINING prepares students with employability skills and current industrial technologies in actual working environment. This course allows students to experience the work culture of the workplace as well as provides a platform for students to put into practice the skills and knowledge learnt. The desired attributes include organizational orientation and professional ethics, effective communication, leadership and teamwork, continuous learning and information management, as well as self-management and entrepreneurial mind at the workplace.

STUDENT INFORMATION

GRADING POINT SYSTEM

Under polytechnic's assessment system, student's performance is being measured on the basis of quantitative method and being known as Grading Point System (GPS).

In the Grading Point System, there are measures to evaluate student's performance:

GRADE POINT AVERAGE (GPA)

The average grade of a student for given semester is being computed by taking the sum of the courses credit hours and grade point divided by the total credit hours taken in that semester.

$$\text{Formula } \mathbf{GPA} = \frac{\textbf{Total credit hours} \times \textbf{Grade point}}{\textbf{Total credit hours taken in that semester}}$$

CUMULATIVE GRADE POINT AVERAGE (CGPA)

The sum of the courses credit hours and the grade point for all courses taken in all semesters, dividedby the total credit hours taken in all semesters.

$$\text{Formula } \mathbf{CGPA} = \frac{\textbf{Total credit hours} \times \textbf{Grade point in all semester}}{\textbf{Total credit hours taken in all semester}}$$

GRADING SYSTEM

A student will be evaluated based on the following mark scales, grades and grade points as being outlined in table below:

Mark Scale	Grade Point	Grade	Status
90 - 100	4.00	A+	High Distinction
80 - 89	4.00	A	Distinction
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
45 - 49	1.67	C-	Pass
44 - 46	1.33	C+	Pass
40 - 43	1.00	D	Pass
30 - 39	0.67	E	Fail
20 - 29	0.33	E-	Fail
0 - 19	0.00	F	Fail

CRITERIA TO GRADUATE UNDER NEW GRADING SYSTEM

A student will graduate from his/her studies for a program if he/she fulfills the criteria below:

a. Pass all courses under a program;
b. Obtain a CGPA (Cumulative Grade Point Average) equivalent to or more than 2.00;
c. Obtain sufficient total credit hours for a program;
d. Students who obtain the minimum passing grade (C-, D+ and D) is allowed to repeat the course only once to improve their grade for the next semester including the short semester.Only the higher grade calculation will be taken into the result without adding the credit hour;
e. Fulfill all programs' requirement and certified by Lembaga Peperiksaan dan Penganugerahan Sijil/Diploma Politeknik .

FACILITIES IN JAB

NO.	FACILITY	LOCATION
1.	MAKMAL TANAH & AIR	LEVEL 1, JAB
2.	MAKMAL TANAH & AIR 2	LEVEL 1, JAB
3.	MAKMAL AGROBIOTEKNOLOGI	LEVEL 1, JAB
4.	MAKMAL LEPAS TUAI	LEVEL 1, JAB
5.	MAKMAL KEJURUTERAAN AKUA	LEVEL 1, JAB
6.	BENGKEL PEMPROSESAN MAKANAN	BLOK 16
7.	PUSAT LADANG	BLOK 16
8.	MAKMAL ROBOTIK	BLOK 13
9.	GREEN HOUSE	BLOK 17
10.	NURSERY	BLOK 18
11.	FISH HATCHERY	BLOK 19
12.	MACHINERY STORE AND GARAGE	BLOK 16
13.	COMPUTER LAB	JMSK
14.	GALERI AKUARIUM DAN PUSAT PENYELIDIKAN IKAN	HATCHERY

IMPORTANT UNITS

NO.	UNIT	OFFICER	089-228351 EXT
1.	HEAD OF DEPARTMENT (JAB)	TS. IMRAN AFFANDI BIN BAKI	275
2.	HEAD OF PROGRAMME (AQUACULTURE)	TS. HASMIDAH BINTI MD ISA	273
3.	HEAD OF PROGRAMME (AGROTECHNOLOGY)	MR. MOHD SYUKRI BIN SAMSURI	273
4.	RECEPTIONIST	MS. SABTURIAH BINTI KARIS	201
5.	HEP	MR. EFFANDY BIN MASALLEH	245
6.	INDUSTRIAL TRAINING	MR. MOHD NUR NAZAQUL HAKIMI BIN MOHD NAJMUDDIN	214
7.	COUNSELING	MDM. NAZATUL SYAFINAZ BINTI JAFERY	214
8.	EXAMINATION	MR. MOHD ADAM NASHRIQ BIN BANI YAMIN	213
9.	USKK	MDM. NORSHAHADAH BINTI ABD. RAHMAN	254
10.	LIBRARY	MDM. JANILYN BINTI SALCEDO	268
11.	KAMSIS	MDM. NAWATI BINTI BATJO	285
12.	UICT	MDM. ERDAH BINTI SAMINO	215
13.	PTPTN	MR. MOHAMAD FAZRIL BIN AHMAD FAUZI	216

LAGU POLITEKNIK

Politeknik adalah warisan kita
Membekal tenaga bidang teknikal
Bersama membina kemajuan negara
Malaysia ku tercinta
llmu akhlak mulia asas jaya
Itulah amalan hidup kita
Di mana sahaja politeknik berada
Harapan tetap sama

Chorus :
Politeknik ku sanjung jasa-jasa mu
Mencipta lembaran sejarah
Harapan impian kan menjadi nyata
Tekad, takwa, usaha
Penentu arah
Maju Politeknik ayuh maju
Semangat mu merestui perjuanganku
Teknologi teras pembagunan Negara
Politeknik Malaysia

LAGU SABAH TANAH AIR KU

Sabah tanah airku,
Negeri kita yang tercinta,
Pemuda-pemudi semua marilah,
Bangun bersatu semua.

Marilah bersama serta maju jaya,
Merdeka sepanjang masa,
Bersatu segala bangsa sentosa,
Sabah negeri merdeka.

IKRAR PELAJAR

Bahawa Kami Pelajar Politeknik Sandakan
Berikrar
Akan melaksanakan
Segala tugas dan tanggungjawab
kami seperti yang berikut:

- Taat kepada Tuhan, menjunjung dan mengamalkan ajaran agama dalam kehidupan seharian.
- Menjaga martabat dan kedaulatan negara setiap masa.
- Menumpukan usaha berterusan ke arah kecemerlangan akademik.
- Mematuhi segala peraturan Politeknik dan Undang-undang negara Malaysia.
- Memastikan kegemilangan Politeknik Sandakan dikekal dan diteruskan dalam apa jua keadaan.

NOTIFICATION

1. This student handbook is an electronic printed copy issued for the use and guidance of students of Politeknik Sandakan Sabah (PSS) who are studying the Diploma in Aquaculture Technology level in the Department of Agrotechnology and Bio-Industry.

2. If this copy is physically printed, the loss of this book must be reported immediately to the Head of the Department of Agrotechnology and Bio-Industry, PSS.

3. Anyone who finds this book is asked to return it to:

Pengarah
Politeknik Sandakan Sabah
Education Hub, Batu 10, Jalan Sg.
Batang, 90000 Sandakan, Sabah
(u.p Ketua Jabatan Agroteknologi dan Bio Industri)

Tel: 089-228351

STUDENTS LEARNING ACTIVITIES

Practice using the microscope

Practice Shared Farm Course (Sewing Net)

Practice Fish Post Harvest Course

Acclimatizing Fish Seeds In Ponds

Fish Breeding

Fish Breeding Practice

Harvesting fish in the pond

Earthen Pond cleaning

Student Projects with Lecturers

Harvest shrimp in the pond

Students Projects with Lecturers

Student Visit to Industry

Student Visit to Industry

Student Visit to Industry

Student Visit to Industry

Student Visit to Industry

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JABATAN AGROTEKNOLOGI & BIO-INDUSTRI
Politeknik Sandakan Sabah
Education Hub, Batu 10, Jalan Sg. Batang,
90000 Sandakan, Sabah
Tel: 089-228351
Fax: 089-228325
Laman web: www.pss.edu.my
Facebook: daqpss