





**Sixth Edition**

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# PREFACE



Bismillahirrahmanirrahim

Assalamualaikum w.b.t and Salam Sejahtera.

Dear Students,

First and foremost, I would like to welcome you to our beloved Politeknik Merlimau (PMM). As you can see, the atmosphere and the ambience here are very conducive for teaching and learning.

As we are aware, the industry requires graduates who are knowledgeable and have impeccable track records and self-discipline. We in PMM have taken measures to ensure all these requirements are met.

Furthermore, in order to add value to our graduates, we greatly emphasize our students to be involved in co-curricular activities, especially the uniformed bodies. I believe that with the quality courses offered by the Civil, Electrical and Mechanical Engineering Departments as well as Commerce and Tourism and Hospitality, we would be able to produce high quality of towering personality graduates who would contribute to the development of our nation.

I am looking forward to meeting you and I hope that you would take advantage of all the facilities provided in order for you to attain the best knowledge and become the contributing citizen for our beloved Malaysia.

Thank you.  
Sincerely,

**Mohd Hatta bin Zainal**

Director  
Politeknik Merlimau



# PREFACE



Assalamualaikum w.b.t and Salam 1 Malaysia.

I am happy to note that we are able to come up with this Programme Handbook to facilitate students with the information on our Politeknik Merlimau and Department of Mechanical Engineering. Our is dynamic and ever-evolving that offers students the opportunity to become excellent. Using innovative teaching methodologies and technology integration, the department sets its standard for student success both in the classroom and in the workplace. The department, staff and administration welcome you to our family. This Programme Handbook will be the initial window to the information on the engineering programmes being offered by this department.

The programmes offered are Diploma in Mechanical Engineering or DKM, Diploma in Mechanical Engineering (Manufacturing) or DTP and Diploma in Mechatronic Engineering or DEM. Those programmes cater to four categories of courses or subjects. It means that students have to complete all the courses listed for their programmes in order to graduate. The four categories of courses are the core, elective, compulsory and common courses.

Having had their life in PMM, the students are exposed to various kinds of activities whether the activities are academic-based or non-academic based. Amongst those activities are Innovation, Pre-graduation Night, Industrial attachment, Head of Department Award/List, Collaboration and Community Service. The activities organised gear the students to develop themselves into a more competitive and resourceful people that would lead to the creation of towering personality graduates.

This department provides a vast range of facilities which are like Fitting and Machining Workshop, Welding Workshop, Foundry Workshop, Plant Laboratory, Strength of Materials Laboratory, CAD/CAM Laboratory, Metrology Laboratory, Instrumentation and Control Laboratory, M-CAD 1 Laboratories, Metallurgy Laboratory, Mechanics of Machines Laboratory, lecture room, Lecture Hall and Drawing Room.

To conclude, I would like to express my highest appreciation and gratitude to all who have contributed to the programme handbook for the Department of Mechanical Engineering. May I wish and sincerely hope that this initiative will be of immense help for the students.

Thank you.

**Azlan Shah Bin Kamaruddin**

The Head of Mechanical Engineering Department

Politeknik Merlimau

# INTRODUCTION



Politeknik Merlimau (PMM) is the 14<sup>th</sup> polytechnic of the Department of Polytechnic Education Ministry of Higher Education. PMM is located in the District of Merlimau, 26 kilometers south of the state capital city, Melaka Historical City.

Established in 2002, PMM started in Politeknik Melaka (back then was Politeknik Kota Melaka). Moving to its own Merlimau campus in the end of 2002, Politeknik Merlimau since then has risen to the forefront of achievements in various fields, emerging as the catalyst polytechnic in academic, innovation as well as social responsibilities activities.

The PMM campus is spread across the area of 100 acres which houses seven academic departments, two non-academic departments and twelve supporting service units. Those academic departments consist of five main departments and two ancillary departments. The main departments are the Department of Civil Engineering, Department of Electrical Engineering, Department of Mechanical Engineering, Department of Commerce and Department of Hospitality and Tourism. The ancillary departments, on the other hand, are the Department of Mathematics, Science & Computer and Department of General Studies.

PMM believes that learning environments play a critical role in the development of strong learning communities which is one of the key aims of curriculum evolution at PMM. These communities are supported by place, technology and cohort-targeted of diploma graduate students. Thus, PMM provides a wide range of facilities and spaces that can be utilized by both the staff and students of PMM such as the CIDOS e-learning tools which serves as the Learning Management System. It is developed for the purpose of teaching and learning processes continuous improvement.

PMM provides a broad-based curriculum underscored by multi-disciplinary courses with the enrichment of the ancillary department's courses which are aligned with the transformative pillars of the Department of Polytechnic Education, Ministry of Higher Education. The classroom lessons and activities are based on sound principles of pedagogy and practice where lectures are given in English. These promote to nurture well-rounded graduates characterized by innovative thinking and relevant skills to thrive in a knowledge economy.

All in all, PMM provides students an ideal, supportive and innovative environment in which students can find their future direction, while making full use of their valuable time. This is further enhanced with practicality, entrepreneurship, and the pursuit of academic and management excellence. It is hoped that the well-rounded graduates enveloped with outstanding leadership qualities will enable them to make valuable contributions to tomorrow's society .

# VISION & MISSION



**VISION**  
To Be the  
Leading-Edge  
TVET Institution



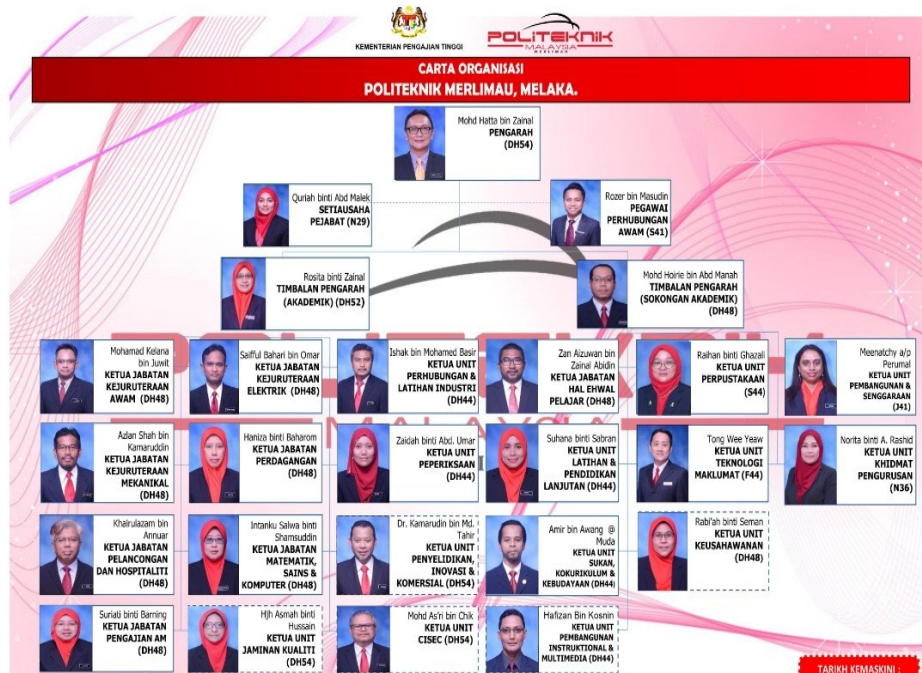
**TAG LINE**  
Expertise For  
Excellence, X4X

**MISSION**

1. To develop holistic, entrepreneurial and balanced TVET graduates through dynamic education in-line with the current Industrial Revolution.
2. To capitalise on smart partnership with stakeholders.
3. To empower communities through life-long learning, research and innovation.



# MANAGEMENT ORGANISATION



# OUTCOME BASED EDUCA-

Ministry of Higher Education, Malaysian Qualification Agency (MQA) and related professional bodies require all programs offered by Institution of Higher Learnings to adopt the Outcome Based Educatio (OBE) approach in their teaching and learning activities. This is in line with the paradigm shift mooted by the Ministry of Higher Education to enhance the quality of education in Malaysia.

Outcome-based education (OBE) is an educational approach that focuses on what students are able to do upon completion of a course. All curriculum and teaching decisions are made based on how best to facilitate the desired outcome. The term outcomes in this matter would be a set of values or 'wish list' on what students should acquire upon their educational program completion. Outcome-based education is designed so that "all students are equipped with the knowledge, skills and qualities needed to be successful after they exit the educational system" (Spady, 1994, p. 9).

In brief, OBE answers the following questions:

- What must the student learn?
- What do the teachers or lecturers want the student to learn?
- How does what student learn affect the overall educational outcome?
- How do the teachers or lecturers make sure that the students learn what they are intended to learn?

Thus, OBE outlines the guidance for planning, delivering and evaluating teaching and learning activities to achieve the results expressed in terms of individual student learning outcomes as shown in Figure 5.1 below.

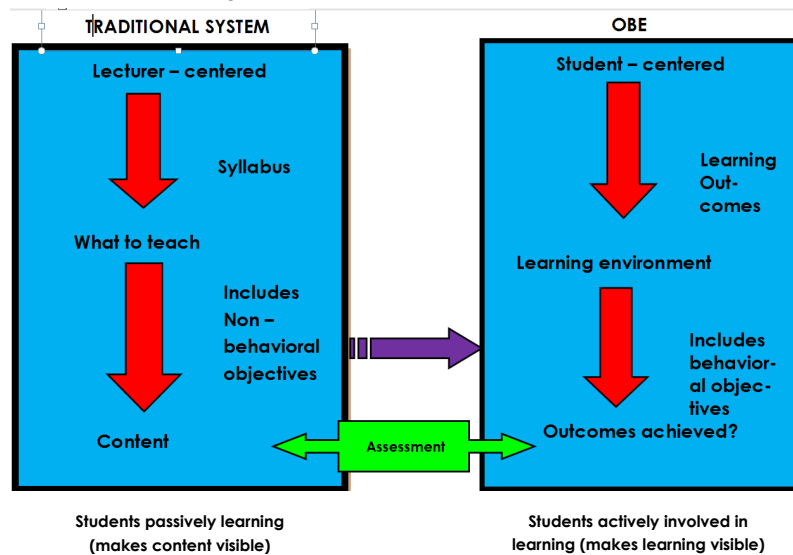
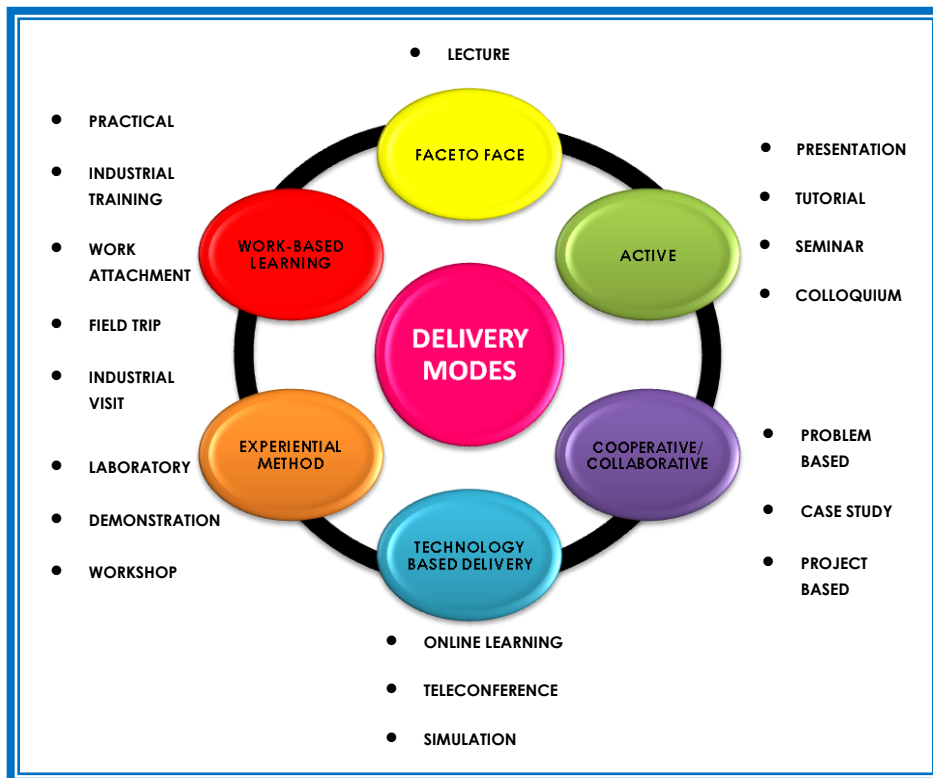


Figure 5.1: A Paradigm Shift for Educational System

# OUTCOME BASED EDUCA-

## DELIVERY MODES

The diversity of teaching and learning methodologies can be adapted by lecturers as to cater to the heterogeneous or different students' potentials. This is important to ensure that different students are at the maximum level while the less potential ones are not left behind. Figure 5.2 shows that there are many modes of delivery that can be employed to suit various teaching and learning purposes.



# OUTCOME BASED EDUCA-

## OBE EDUCATIONAL FRAMEWORK

### Programme Educational Objectives (PEO):

The broad statements that describe the career and professional accomplishments which the program is preparing graduates to achieve.

### Programme Learning Outcomes (PLO):

The statements that describe what students are expected to know and able to perform or attain in terms of skills, knowledge and behaviour or attitude by the time of graduation.

### Course Learning Outcomes (CLO):

The statements that describe the specification of what a student should learn upon completing a course .

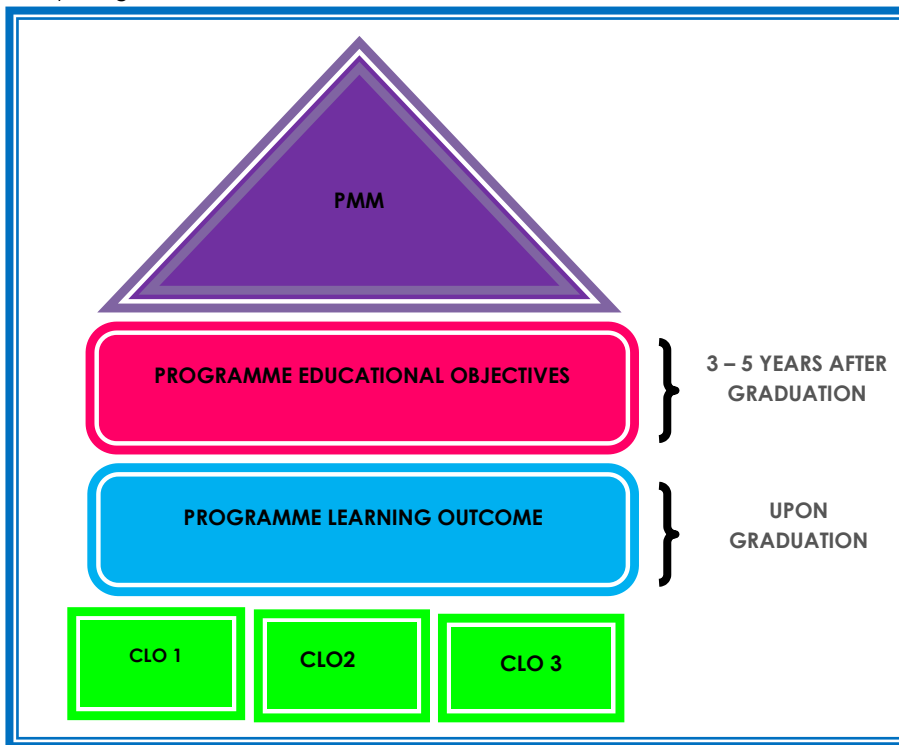


Figure 5.3 : OBE Educational Framework



# OUTCOME BASED EDUCA-

## FORMATION OF LEARNING OUTCOMES

The achievement of students is measured by learning outcomes. These learning outcomes should specify the competencies acquired by students upon completion of their studies. The Learning outcome consist of 8 domains that have been clustered into 5 clusters. The diagram Malaysian Qualifications Framework 2nd Edition: Level Descriptors below shows the cluster ;

MQF LEVEL	Summary of Learners Profile	CLUSTER 1: Knowledge and Understanding	CLUSTER 2: Cognitive skills	CLUSTER 3: FUNCTIONAL WORK SKILLS				CLUSTER 4: Personal and entrepreneurial skills	CLUSTER 5: Ethics and Professionalism
				Practical skills	Interpersonal and Communication Skills	Digital and Numeracy Skills	Leadership, Autonomy and Responsibility		
Level 4 DIPLOMA	Learners will have a broad knowledge of the general theories, principles and demonstrate skills in a focused area of study/ discipline enabling them to undertake specialized work leading to a career path in technical, professional or management fields.  Learners express interest in pursuing further education.  Learners will have a commitment for appropriate ethical behavior and express an appreciation of national aspirations within global perspectives	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.	Identify, interpret, apply and evaluate general concepts, theory and/or operational principles within a well-defined context of a subject/discipline and/or work with minimal supervision  Solve problems of a common and well-defined kind as well as those others of a non-routine nature.	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.	Communicate clearly, both orally and in writing, ideas, information, problems and solutions, to others including peers, experts and non-experts.  Interact effectively, individually or as member of a team with supervisors, Peers and subordinates.  Demonstrate a high level of proficiency in at least one other language besides the national language.	Use a range of digital applications to support study /work as well as to seek and process data related to work or study.  Demonstrate skills to use and interpret routine and complex numerical and graphical/visual data.	Perform work with significant degree of personal responsibility and autonomy under broad guidance and direction on well-defined and non-routine study /work activities performed in a variety of contexts.  Lead and manage diverse teams to manage issues at work.	Identify self-improvement initiatives and possibilities for further education. Develop realistic Career and professional goals.  Explore and engage in activities relating entrepreneurship.  Show interest in and participate at professional and civic activities leading to local and region wide communities building.	Demonstrate ability to understand and comply with organizational and professional ethics in work environment. Demonstrate ability to apply sustainable practices in the context of local and global work and social environment.

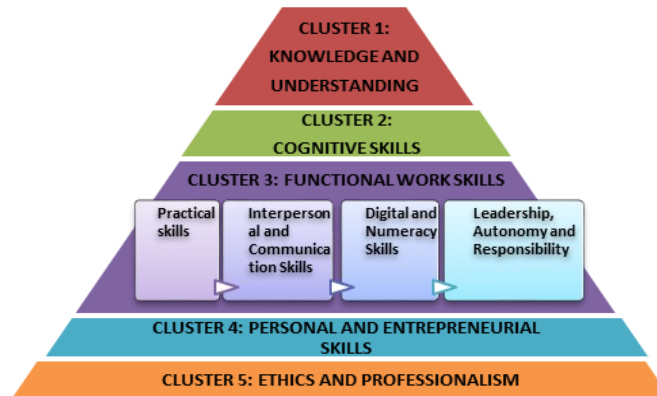


Figure 5.4 :Competency Domain to be applied in MQA Outcomes

(Learning Outcomes, LO)

# OUTCOME BASED EDUCA-

## THREE MAIN STAGES IN TEACHING AND LEARNING PROCESS

In general, OBE concept divides teaching and learning activities into three parts, namely:

- i. Planning,
- ii. Implementation and
- iii. Assessment

At the planning stage, learning outcomes should be determined in advance by taking into account what students can do after attending a teaching process.

At the implementation stage, the teaching and learning activities should be designed to achieve the specified learning outcomes.

Finally, the assessment is to be determined where it measures how far students have achieved the specified learning outcomes and assessment provides input to continuously improve the teaching and learning process.

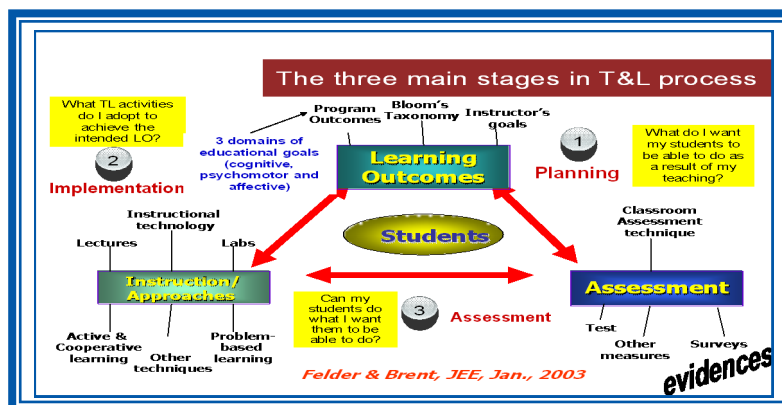


Figure 5.5 : Three Main Stage in Learning and Teaching Process

Towards the future of OBE:

1. Courses will help students to want, passionately, to do things, rather than just 'be able to' do things.
2. Assessment will assess whether students actually and spontaneously achieve the outcomes, rather than just 'being able to'
3. Outcomes will include values and principles and purposes as well as abilities.

In conclusion, the call for accountability is inevitably one of the reasons that lead to the introduction of OBE in Politeknik Merlimau. All parties need to make necessary changes, modifications, and improvements in the light of the changes aimed. The roles of curriculum, lecturers or instructors and assessment must gear the students towards the intended outcomes.

# UNIT OF E-LEARNING

## Introduction

CeLT (Center for e-Learning & Teaching) is a special name for Digital Learning Unit under the Instructional and Digital Learning Division, Polytechnic Education Department, Ministry of Higher Education Malaysia. CeLT is created to help empower the special National e-Learning agenda for all Malaysian Polytechnic.

## VISION

Transforming Politeknik Merlimau towards global competitiveness through e-learning.

## MISSION

Build a competitive, creative and sustainable e-learning framework.

## OBJECTIVE

1. Encourage quality, fair and equitable education opportunities through e-learning (open, neutral and active)
2. Provide appropriate infrastructure and e-learning friendly
3. Creating a variety of creativity to strengthen the 21st century learning and teaching process

## The roles and responsibility of the e-Learning Unit are to :

1. Coordinate, support and monitor the implementation of e-Learning through the CIDOS platform.
2. Develop and improve CIDOS functionality to meet the effective R & D requirements and suit the rapid development of ICT (including Mobile-ready).
3. Improve literacy and training and mentoring on e-Learning.
4. Plan training and mentoring and support e-Content development support for academic and student staff.
5. Designing strategies and coordinating the EDOLA competition organized by CELT's Department of Polytechnic Education such as TVET Tunes, Poli TV, EMCC, VR 360 and Augmented Reality (AR).

# UNIT OF E-LEARNING



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# UNIT OF E-LEARNING

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# FACILITIES



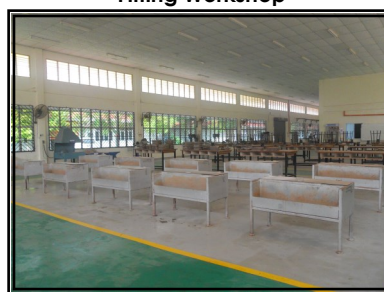
**Machine Workshop**



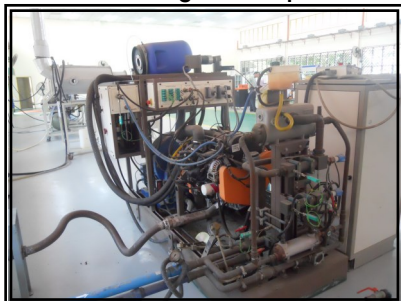
**Fitting Workshop**



**Welding Workshop**



**Foundry Workshop**



**Plant Lab.**



**Pneumatic & Hydraulic Lab.**



**Thermodynamic Lab.**

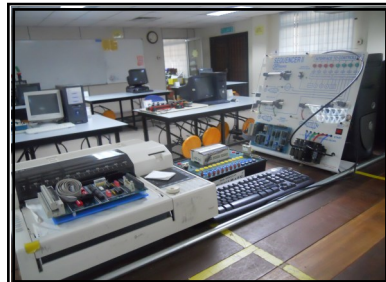


**CAD/CAM Lab.**

# FACILITIES



**Metrology Lab.**



**Instrumentation & Control Lab**



**M-CAD Lab. 1**



**Plastic Workshop**



**Metallurgy Lab.**



**Robotic Lab.**



**Fluid Lab.**



# FACILITIES



**Seminar Room**



**Lecture Room**



**Lecture Hall**



**Technical Drawing Room**



**Discussion Area**

# DIPLOMA IN MECHANICAL ENGINEERING

## Programme Overview

### Introduction

In line with the 3rd Industrial Malaysia Plan (IMP3) aiming for the innovative and creative human capital development, via matching talent to expertise with market demand, Diploma in Mechanical Engineering for polytechnic is developed to give balance emphasis on theoretical and practical aspects. The Eleventh Malaysia Plan was drawn to produced 60% out of 1.5 million workers was in TVET sector. Until now a total of 69,475 (51%) of the 136,062 technical education and vocational training (TVET) graduates in Malaysia are working as professionals and skilled workers. Thus, to keep abreast with rapid demand in TVET sector, Department of Polytechnic and Community College Education (DPCCE) progressively collaborates with major industry players in the country in developing the curriculum. The programme will take six semesters to complete, five academic semesters at their respective polytechnics and one semester of industrial training at relevant industries during the final semester. This programme complies with the Board of Engineer (BEM) requirement.

### Synopsis

The Diploma in Mechanical Engineering programme is designed to produced holistic graduates that have knowledge and competent skills in the field of mechanical engineering to fulfil the demand of workers in engineering sector. The programme structure focusses on the area of Solid Mechanics, Statics & Dynamics, Thermodynamics & Heat Transfer, Fluid Mechanics, Materials, Mechanical Design, Workshop Practices, Manufacturing, Instrumentation & Control, Mechanical Maintenance, Electrical & Elec-

### Job Prospects

This programme provides the knowledge and skills in Mechanical Engineering field that can be applied to a broad range of careers in Mechanical Engineering . The knowledge and skills that the students acquire from the programme will enable them to participate in the job market as:

- Assistant Engineer
- Technical Assistant
- Production Technician
- Maintenance Engineer
- Sales Engineer
- Assistant Service Manager
- Service Advisor
- Technical Sales Executive
- Technical Instructor or Lecturer
- Entrepreneur



# DIPLOMA IN MECHANICAL

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## **Vision**

To be the Leading-Edge TVET Institution.

## **Mission**

- a. To provide wide access to quality and recognized TVET programmes.
- b. To empower communities through lifelong learning.
- c. To develop holistic, entrepreneurial and balanced graduates.
- d. To capitalise on smart partnership with stakeholders.

## **Programme Aims**

The programme believes that every individual has potential and the programme aims to develop adaptable and responsible Senior Assistant Engineers to support government aspiration to increase workforce in engineering related field.

## **Programme Educational Objectives (PEO)**

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

1. equipped with industry-relevant knowledge and skills in mechanical engineering field.
2. engaging on lifelong and continuous learning to enhance knowledge and skills.
3. instilled with entrepreneurial skills and mind set in the real working environment.
4. established strong linkage with society and players in the industry.

## **Programme Learning Outcomes (PLO)**

Upon completion of the programme, graduates should be able to:

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.
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).
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)



# DIPLOMA IN MECHANICAL

4. Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements
5. Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (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)
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)
8. Understand and commit to professional ethics and responsibilities and norms of technician practice
9. Function effectively as an individual, and as a member in diverse technical teams
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
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
12. Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge

**Notes:**

DK 1 : A descriptive, formula-based understanding of the natural sciences applicable in a sub discipline

DK 2 : Procedural mathematics, numerical analysis, statistics applicable in a sub discipline

DK 3 : A coherent procedural formulation of engineering fundamentals required in an accepted sub discipline

DK 4 : Engineering specialist knowledge that provides the body of knowledge for an accepted sub discipline

DK 5 : Knowledge that supports engineering design based on the techniques and procedures of a practice area

# PROGRAMME STRUCTURE

PROGRAMME STRUCTURE FOR DIPLOMA IN MECHANICAL ENGINEERING							
COMPONENTS	COURSE CODE		CONTACT HOURS			CREDIT HOURS	PRE - REQUISITE
			L	P	T		
<b>Semester 1</b>							
Compulsory	DUE10012	Communicative English 1	1	0	2	2	
	MPU24XX1	Sukan Unit Beruniform 1	0	2	0	1	
Common Core	DUW10022	Occupational, Safety and Health for Engineering	2	0	0	2	
	DBS10012	Engineering Science	2	1	0	2	
	DBM10013	Engineering Mathematics 1	2	0	2	3	
Discipline Core	DJJ10013	Engineering Drawing	1	3	0	3	
	DJJ10022	Mechanical Workshop Practice 1	0	4	0	2	
	DJJ10033	Workshop Technology	3	0	0	3	
		<b>TOTAL</b>	<b>25</b>			<b>18</b>	
<b>Semester 2</b>							
Compulsory	MPU23052	Sains, Teknologi dan Kejuruteraan Dalam Islam*	1	0	2	2	
	MPU23042	Nilai Masyarakat Malaysia**					
	MPU24XX1	Kelab/Persatuan Unit Beruniform 2	0	2	0	1	MPU24XX1 MPU24XX1
Common Core	DBM20023	Engineering Mathematics 2	2	0	2	3	DBM10013
Discipline Core	DJJ20042	Mechanical Workshop Practice 2	0	4	0	2	DJJ10022
	DJJ20053	Electrical Technology	2	2	0	3	
	DJJ20063	Thermodynamics	2	2	0	3	
	DJJ20073	Fluid Mechanics	2	2	0	3	
		<b>TOTAL</b>	<b>25</b>			<b>17</b>	
<b>Semester 3</b>							
Compulsory	DUE30022	Communicative English 2	1	0	2	2	DUE10012
Common Core	DBM30033	Engineering Mathematics 3	2	0	2	3	DBM20023
Discipline Core	DJJ30082	Mechanical Workshop Practice 3	0	4	0	2	DJJ20042
	DJJ30093	Engineering Mechanics	2	2	0	3	
	DJJ30103	Strength of Materials	2	2	0	3	
	DJJ30113	Material Science and Engineering	2	2	0	3	
	DJJ30122	Computer Aided Design	1	2	0	2	DJJ10013
		<b>TOTAL</b>	<b>26</b>			<b>18</b>	
<b>Semester 4</b>							
Common	DJJ40132	Engineering and Society	2	0	0	2	
Discipline Core	DJJ40142	Mechanical Workshop Practice 4	0	4	0	2	DJJ30082
	DJJ40153	Pneumatic and Hydraulics	2	2	0	3	
	DJJ40163	Mechanics of Machines	2	2	0	3	DJJ30093
	DJJ40173	Engineering Design	2	2	0	3	DJJ30122
	DJJ40182	Project 1	2	0	0	2	
Elective		Elective***					
		<b>TOTAL</b>	<b>20</b>			<b>15</b>	

# PROGRAMME STRUCTURE

Semester 5						PRE - REQUISITE	
Compulsory	MPU21032	Penghayatan Etika dan Peradaban	1	0	2	2	
	DUE50032	Communicative English 3	1	0	2	2	DUE30012
	MPU22012	Entrepreneurship	1	0	2	2	
Discipline Core	DJJ50193	Project 2	0	4	0	3	DJJ40182
	DJJ50203	Troubleshooting and Maintenance for Mechanical Components	2	2	0	3	
	DJJ50212	Maintenance Engineering and Management	2	0	0	2	
Elective		Elective***					
<b>TOTAL</b>			<b>19</b>	<b>14</b>			
Semester 6							
Industrial Training	DUT600610	Engineering Industrial Training	0	0	0	10	
<b>TOTAL</b>			<b>0</b>	<b>10</b>			
<b>TOTAL CREDIT VALUES</b>						<b>94</b>	

ELECTIVES COURSES						
1	DJJ42022	Industrial Management	2	0	0	2
2	DJJ42032	Instrumentation and Control	2	0	0	
3	DJJ52012	Engineering Plant Technology	2	0	0	
4	DJJ52052	Railway Track System	2	0	0	
5	DJM20032	C Programming	1	2	0	
6	DJM40082	Programmable Logic Control	1	2	0	
7	DJM40092	Control System	2	1	0	
8	DJF51082	Quality Control	2	0	0	
FREE ELECTIVES						
1	DUD10012	Design Thinking	1	0	0	2

	Total Credit	%
i. Compulsory	14	14.9%
ii. Common Core	15	16%
iii. Discipline Core	53	56.4%
iv. Elective	2	2.1%
v. Industrial Training	10	10.6%
<b>TOTAL</b>	<b>94</b>	<b>100%</b>

	TOTAL	%
i. Lecture	49	41.9
ii. Practical (Practical + Tutorial)	68	58.1
iii. Contact Hours	117	100

#### Legend / Notes:

L : Lecture, P : Practical/Lab, T : Tutorial, C : Credit  
 (The numbers indicated under L, P & T represent the contact hours per week, to be used as a guide for time table preparation)  
 \* For Muslim Students  
 \*\* For Non Muslim Students  
 \*\*\* Only one (1) elective course can be chosen either in semester 4 or 5

#### Notes:

- The minimum and maximum credit value of Electives must be referred to the programme standard or professional bodies.
- \*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.
- \*\*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.
- Co-curriculum pathways:  
 a. Path 1 : Sport and Club  
 b. Path 2 : Uniform Unit (Students are required to **PASS** Uniform Unit 1 as a prerequisite to Uniform Unit 2).

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	Engineering Drawing DJJ10013	3	<p><b>ENGINEERING DRAWING</b> course provides the students with the fundamentals of technical drawings and the application Computer Aided Design (CAD) software. For technical drawing, it emphasizes on the practical knowledge of drawing instruments and drawing techniques while for CAD the student will learn to navigate and use the software to create 2D drawing design in engineering. Students shall be able to demonstrate competency in using some standard available features of technical drawing and CAD application to create and manipulate objects or elements in engineering drawing.</p>	<ol style="list-style-type: none"> <li>1. Apply the fundamentals of technical drawing and features of CAD software in producing engineering drawing. (C3, PLO1)</li> <li>2. Construct the technical drawing and 2D CAD drawing according to the engineering drawing standards. (P3, PLO 5)</li> <li>3. Propose a project report with following engineering norms and practices in engineering drawing. (A3, PLO 8)</li> </ol>
	Mechanical Workshop Practice 1 DJJ10022	2	<p><b>MECHANICAL WORKSHOP PRACTICE 1</b> exposes the students to welding, machining and fitting which involve the use of arc and gas welding machine, lathe machine, drilling machine, grinding, hand tools, marking out tools, measuring and testing tools. Students are also taught to emphasize on safety procedures and cleanliness in the workshop.</p>	<ol style="list-style-type: none"> <li>1. Measure finished product using appropriate measurement Instruments. (P3, PLO5)</li> <li>2. Perform fitting, welding and machining works according to Standard Operational Procedure (SOP). (P4, PLO5)</li> <li>3. Demonstrate an understanding of professional ethics, responsibilities and norms of engineering practices according to the workshop safety regulation.(A3, PLO6)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	WORKSHOP TECHNOLOGY DUJ10033	3	<b>WORKSHOP TECHNOLOGY</b> 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),	<ol style="list-style-type: none"> <li>1. Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology. (C3, PLO1)</li> <li>2. Apply standard practice in operating mechanical tools and component. (C3, PLO8)</li> <li>3. Demonstrate continuous learning and information management skills to complete assigned task. (A3, PLO12)</li> </ol>
1	Occupational Safety and Health for Engineering DUW10022	2	<b>OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING</b> course is designed to impart understanding of the self-regulatory concepts and provisions under the Occupational Safety & Health Act (OSHA). This course presents the responsibilities of workers in implementing and complying with the safety procedures at work. Understanding of notifications of accidents, dangerous occurrence, poisoning and diseases and liability for offences will be imparted upon students. This course will also provide an understanding of the key issues in OSH management, incident prevention, Emergency Preparedness and Response (EPR), fire safety, Hazard Identification, Risk Control and Risk Assessment (HIRARC) and guide the students gradually into this multi-disciplinary science.	<ol style="list-style-type: none"> <li>1. Explain briefly Occupational Safety and Health (OSH) procedures, regulation and its compliance in Malaysia. (C2,PLO1)</li> <li>2. Initiates incident hazards, risks and safe work practices in order to maintain health and safe work environment. (A3, PLO8)</li> <li>3. Forms communication skills in a team to respond for an accident action at workplace. (A3, PLO10)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	Mechanical Workshop Practice 2 DUJ 20042	2	<b>MECHANICAL WORKSHOP PRACTICE 2</b> exposes the students to arc and gas welding, foundry and machining works. Safety procedure practice is heavily emphasized in the workshop.	<ol style="list-style-type: none"> <li>1. Follow the appropriate procedure for welding, foundry and lathe machining. (P3, PLO5)</li> <li>2. Perform welding, foundry and lathe machining according to Standard Operating Procedure (SOP). (P4, PLO5)</li> <li>3. Demonstrate the ability to work as individual and as a team to complete assigned tasks. (A3, PLO9)</li> </ol>
	Electrical Technology DUJ20053	3	<b>ELECTRICAL TECHNOLOGY</b> exposes students to the basic electrical circuit concepts, the application of electromagnetism in electrical machines and transformers. The course focuses on the different types of electrical circuits, the relationship between current and voltage including the resistance. It also provides the skills on the methods of constructing basic circuits and operation of electrical machines and transformers. This course also exposes the students to the demonstration of experiments in Electrical Engineering.	<ol style="list-style-type: none"> <li>1. Explain the principles and fundamental of electrical circuits, electromagnetism, transformers and electrical machine. (C2, PLO1)</li> <li>2. Solve the problem related to electrical circuits, electromagnetism, transformers and electrical machine. (C3, PLO1)</li> <li>3. Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	Thermodynamics DJJ20063	3	<p><b>THERMODYNAMICS</b> provides knowledge of theory, concept and application of principles to solve problems related to thermodynamics. It emphasizes on concept of non-flow process and flow process, properties of steam, Carnot cycle and Rankine cycle. This course also exposes the students to the demonstration of experiments in Thermodynamics by using the real equipment.</p>	<ol style="list-style-type: none"> <li>1. Explain fundamentals concept and properties of pure substances in thermodynamics (C2, PLO1)</li> <li>2. Apply Laws of thermodynamics and it processes. (C3, PLO1)</li> <li>3. Organize appropriately experiments according to the Standard Operating Procedures. (P4, PLO5)</li> </ol>
	Fluid Mechanics DJJ20073	3	<p><b>FLUID MECHANICS</b> provides students with a strong understanding of the fundamentals of fluid mechanics principles related to the fluid properties and behavior in static and dynamic situations. This course also exposes the students to the demonstration at the real equipment of fluid mechanics.</p>	<ol style="list-style-type: none"> <li>1. Explain the fundamentals of fluid. (C2, PLO1)</li> <li>2. Solve problems related to fluid properties, fluid statics and fluid dynamics. (C3, PLO1)</li> <li>3. Organiza appropriate experiments in groups according to the standard operating procedures. (P4, PLO5)</li> </ol>



# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	Mechanical Workshop Practices 3 DJJ30082	2	<p><b>MECHANICAL WORKSHOP PRACTICE 3</b> exposes the students to the use of Tungsten Inert Gas (TIG) and Metal Inert Gas (MIG) welding machines. Students also will perform a task by using lathe and milling machine. In addition students will be exposed in safety procedures practice will be emphasized in workshop</p>	<ol style="list-style-type: none"> <li>1. Follow welding tasks according to workshop Standard Operating Procedure (SOP). (P3, PLO5)</li> <li>2. Perform machining tasks according to workshop Standard Operating Procedure (SOP). (P4, PLO5)</li> <li>3. 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. (A3, PLO6)</li> </ol>
	Engineering Mechanics DJJ30093	3	<p><b>ENGINEERING MECHANICS</b> focuses on theoretical knowledge in statics and dynamics. This course provides students with fundamental understanding of forces and equilibrium, resultants, equilibrium of a particles and structural analysis. This course also covers kinematics and kinetics of particles. This course also exposes the students to the demonstration of experiments in Engineering Mechanics.</p>	<ol style="list-style-type: none"> <li>1. Solve problems related to static and dynamics based on the concepts and principle of engineering mechanics. (C3, PLO1)</li> <li>2. Analyze engineering related problems based on fundamentals of static and dynamics. (C4, PLO2)</li> <li>3. Organize appropriately experiment in groups according to Standard Operation Procedures. (P4, PLO5)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DJ130103 Strength of Materials	3	<b>STRENGTH OF MATERIALS</b> provides knowledge on concepts and calculation of forces on materials, thermal stress, shear force and bending moment, bending stress, shear stress and torsion in shafts. It also deals with the experiments conducted on tensile test, bending moment, shearing force and torsion and deflection.	<ol style="list-style-type: none"> <li>1. Apply the concepts of strength of materials to solve related problems. (C3, PLO1)</li> <li>2. Analyze problems correctly related to strength of materials. (C4, PLO2)</li> <li>3. Organize appropriately experiment in groups according to Standard Operation Procedures (SOP). (P4, PLO5)</li> </ol>
	DJ130113 Material Science And Engineering	3	<b>MATERIALS SCIENCE AND ENGINEERING</b> course introduces students a comprehensive coverage of basic fundamentals of materials science and engineering. The course focuses on material structures, properties, fabrication methods, corrosion, thermal processing and material testing mostly of metals and alloys. New fabrication method of powder metallurgy are introduced to student to cater the fabrications of devices, sensors for Industry 4.0 technology.	<ol style="list-style-type: none"> <li>1. Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment. (C3, PLO1)</li> <li>2. Performed appropriate material testing according to the Standard Operating Procedures. (P4, PLO5)</li> <li>3. Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session. (A3, PLO9)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	DJ30122 Computer Aided Design	2	<p><b>COMPUTER AIDED DESIGN</b> exposes the students to the fundamentals and principles of 3D drawing using 3D CAD software. Students also equip with various method of creating a solid model using extrude, revolve, swept, assembly, simulation and animation. Hands-on exercises drawing of mechanical engineering will also be covered in this course.</p>	<ol style="list-style-type: none"> <li>1. Apply CAD commands in order to produce engineering drawing. (C3, PLO1)</li> <li>2. Construct 3D drawing of Mechanical Components according Drawing Standards. (P4, PLO5)</li> <li>3. Demonstrate a presentation with following technical standard Communication. (A3, PLO10)</li> </ol>
4	DJ40132 Engineering and Society	2	<p><b>ENGINEERING AND SOCIETY</b> focuses on the introduction to professional ethics, theory and philosophy of ethics, values in professional ethics, engineering bylaws and standards, issues in professional ethics and sustainability. It also relates towards IR 4.0 introduction and green engineering.</p>	<ol style="list-style-type: none"> <li>1. Implement the roles of engineering profession towards the developing of society and its challenges in globalization. (C3, PLO6)</li> <li>2. Determine the important of work ethics, bylaws and professionalism in engineering profession. (C4, PLO8)</li> <li>3. Determine the needs for sustainable and green engineering towards providing the solutions in engineering field. (C4, PLO7)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
4	Mechanical Workshop Practice 4 DJJ40142	2	<p><b>MECHANICAL WORKSHOP PRACTICES 4</b> course allows the students to operate machine tools, precision grinding, CNC machine and able to work in a clean and safe workshop environment.</p>	<ol style="list-style-type: none"> <li>1. Perform high precision machining processes for the surface or cylindrical grinding machine. (P4, PLO5)</li> <li>2. Construct programs for EDM and CNC machining process using ISO codes or any related machining software. (P5, PLO3)</li> <li>3. Demonstrate safety procedures in the workshop according to the workshop safety regulation correctly to create a secured environment in an organization while doing practical work and ability to work in team to complete assigned tasks during practical work sessions. (A3, PLO7)</li> </ol>
	Pneumatic & Hydraulics DJJ40153	3	<p><b>PNEUMATIC &amp; HYDRAULICS</b> provides knowledge and understanding to the importance of pneumatics and hydraulics circuits, equipment and design along with its usage in the industry.</p>	<ol style="list-style-type: none"> <li>1. Analyze the basic concept and function of pneumatics and hydraulics system. (C3, PLO1)</li> <li>2. Design pneumatic, electro-pneumatic and hydraulic circuit according to assigned tasks. (C5, PLO3)</li> <li>3. Perform experiment on pneumatic, electro-pneumatic and hydraulic circuit during practical session. (P4, PLO5)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
4	Mechanics Of Machines DJJ40163	3	<p><b>MECHANICS OF MACHINES</b> exposes the students with knowledge on techniques and concepts of mechanics of machines and analyzing problems related to hoists, simple harmonic motion, velocity and acceleration diagram, and belt drives. This course also exposes the students to the demonstration of experiments in Mechanics of Machines by using the real equipment.</p>	<ol style="list-style-type: none"> <li>1. Apply the fundamentals of mechanics of machines to solve related problems in the theoretical and graphical aspects. (C3, PLO1)</li> <li>2. Analyze problems related to the mechanics of machines in relation to the theoretical aspects. (C4, PLO2)</li> <li>3. Perform experiments in groups according to the Standard Operating Procedures. (P4, PLO5)</li> </ol>
	Engineering Design DJJ40173	3	<p><b>ENGINEERING DESIGN</b> course offers a comprehensive coverage of basic concept engineering design. Student will learn the fundamental concepts for designing process, designing consideration, ergonomic, materials selection and emphasizes on mathematical analysis for simple components designs in engineering. It also provides knowledge on reverse engineering and practical on 3D printing.</p>	<ol style="list-style-type: none"> <li>1. Apply the concept of design process, stress analysis and mechanical joint in an engineering product. (C3, PLO1)</li> <li>2. Implement engineering design process on project design taking into design consideration, ergonomic factors and material selection. (C3, PLO3)</li> <li>3. Builds a part or product in 3D modelling based on project design. (P4, PLO5)</li> <li>4. Adopt design regarding to the environment and sustainability. (A3, PLO7)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
4	DJ40182 Project 1	2	<p><b>PROJECT 1</b> provides students with solid foundation on knowledge and skills in formulating project proposal preparation, writing and presentation</p>	<ol style="list-style-type: none"> <li>1. Identify the engineering problems to be solved. (C4, PLO2)</li> <li>2. Analyze methods to solve problems. (C4, PLO7)</li> <li>3. Propose a solution to problems. (A3, PLO11)</li> </ol>
5	DJ50193 Project 2	3	<p><b>PROJECT 2</b> is a continuation of Project 1 focusing on project planning, development, project report and presentation. This course introduces students with ability and skills in conducting project planning, development and management based on their project design. It also provides the student with technical writing and presentation skills. The project will be implemented in a group and each group will work on a project under lecturer(s) supervision. Project titles will be based on specialization and students will be assessed individually.</p>	<ol style="list-style-type: none"> <li>1. Demonstrate appropriate and creative solution in solving project problems. (P5, PLO3)</li> <li>2. Perform project plan to achieve objectives with valid and reliable results. (P4, PLO4)</li> <li>3. Explain the project work and defend project outcomes effectively with good communication skills. (A4, PLO10)</li> <li>4. Organize project activities and outcomes in report accordance to the specified standard format that applies engineering management principles. (P4, PLO11)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
5	Troubleshooting and Maintenance for Mechanical Components DJ150203	3	<p><b>TROUBLESHOOTING AND MAINTENANCE FOR MECHANICAL COMPONENTS</b> course covers necessary mechanical components needed in Industries. The topics include maintenance and troubleshooting principles and procedures, power transmission, bearing and pump. This course provides knowledge and skills on maintenance and troubleshooting lubrication, bearing, power transmis-</p>	<ol style="list-style-type: none"> <li>1. Analyze the concept of mechanical components to solve related problems. (C3, PLO1)</li> <li>2. Assemble selected mechanical components based on service manual maintenance in groups. (P4, PLO4)</li> <li>3. Demonstrate understanding of engineering norm and practices in mechanical components and maintenance during practical work sessions. (C4, PLO5)</li> </ol>
	Maintenance Engineering and Management DJ150212	2	<p><b>MAINTENANCE ENGINEERING AND MANAGEMENT</b> covers topic such as maintenance organization, maintenance strategies system, system approach to maintenance, maintenance planning and scheduling and computerized maintenance management system (CMMS).</p>	<ol style="list-style-type: none"> <li>1. Apply the concepts of maintenance organization and strategies to solve related problems. (C3, PLO1)</li> <li>2. Analyze the principles of maintenance strategies and elaborate on the significance of a system approach to maintenance. (C4, PLO7)</li> <li>3. Organize project management and finance by group in actual workplace related to maintenance management. (A3, PLO11)</li> </ol>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
5	MPU22012 Entrepreneurship	2	<p><b>ENTREPRENEURSHIP</b> 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 a preparation of a business plan framework through business model canvas.</p>	<ol style="list-style-type: none"><li>1. Propose the value proposition of entrepreneurial idea using Business model Canvas. (A3, CLS3b)</li><li>2. Develop a viable business plan by organizing business objectives according to priorities. (A4, CLS4)</li><li>3. Organise the online presence business in social media marketing platform. (A3, CLS4)</li></ol>



# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
ELECTIVES	C PROGRAMMING DJM20032	2	<p><b>C PROGRAMMING</b> course provides an introduction to programme design and development. Student will learn to design, code, debug, test and document well-structured programs based on technical and engineering problem. Topic covered; software development principle, programming language basic, data types, input and output operation, the use of selection, loops, arrays and function structure.</p>	<p>1.Explain knowledge of basic concepts of C Programming to solve given problem using an appropriate data type. (C2, PLO1)</p> <p>2.Constructs a high level programming language in solving variety engineering and scientific problems . (P3, PLO3)</p> <p>3.Present a solution for assigned project based on programming which relates to current or upcoming tech-</p>
	PROGRAMMABLE LOGIC CONTROLLER DJM40082	2	<p><b>PROGRAMMABLE LOGIC CONTROLLER (PLC)</b> is a course designed to provide students with hardware adaptation and programming skills by employing a PLC for an automation system in the industry. Basic types of automation systems will be studied to assist students in visualizing the application of PLC. The correlation application of PLC in the automation system will be explored both by theoretical and experimental mode. Practical application of an automation system with PLC will be simulated in a laboratory environment to provide a pseudo industrial based experience.</p>	<p>1.Differentiate the types of automation systems and terminologies used in PLC hardware and programmes. (C2, PLO1)</p> <p>2.Write a PLC program related to an industrial automation system (C5, PLO2)</p> <p>3.Program a PLC for an automated application. (P6, PLO3)</p>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
ELECTIVES	DJMA0092 CONTROL SYSTEMS	2	<p><b>CONTROL SYSTEMS</b> provides knowledge regarding various concepts of feedback control system and the required mathematical methods. The emphasis of the course is on control action, transfer functions, and Laplace transforms. This course also provides knowledge in analyzing and data interpretation on different types of controller mode.</p>	<p>1.Explain the basic concept of control system including controller principle, transfer function and stability (C2, PLO2)</p> <p>2.Construct experiment on different types of controller mode in order to analyse and interpretation of data. (P4, PLO3)</p> <p>3.Demonstrate the ability to work in team for completing assigned task during practical work sessions . (A3, PLO9)</p>
	DF51082 QUALITY CONTROL	2	<p><b>QUALITY CONTROL</b> provides knowledge on basic principle and concept of quality including statistical method in controlling products quality or services. This course also emphasizes on the application of Control Chart and Quality Control tools and also explains the quality improvement technique.</p>	<p>1.Apply the relation of statistics and quality management system in understanding of quality control and their application tools. (C3, PLO1)</p> <p>2.Determine the related quality tools and techniques to control the quality of products or services based on case study. (C4, PLO2)</p> <p>3.Demonstrate ability to work in team to complete the assigned tasks. (A3, PLO9)</p>

# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
FREE ELECTIVES	DUD10012 DESIGN THINKING	2	<p><b>DESIGN THINKING</b> course offers the basic concept of Design Thinking through experiential learning. Students learn the five iterative phases of Design Thinking, which are Empathy, Define, Ideate, Prototype and Testing. Students will apply these design thinking principles, process and techniques to solve a real-world problem and come up with an innovative solution in the form of a product, system or service prototype.</p>	<p>1. Apply design thinking principles, process and techniques to solve a real-world problem innovatively. (C3, CLS 2)</p> <p>2. Demonstrate the ability to communicate ideas in solving a real-world problem. (A3, CLS 3b)</p>




# HIGHER ACADEMIC PATH-

## CAREER PATHWAYS FOR POLYTECHNIC STUDENTS.




Graduates of polytechnics in general are able to advance their studies through these academic career pathways;

### **Institution of Higher Learning (Public/Private)**






This pathway allows polytechnic students to advance their studies in other public universities, as well as other private learning institutions. Apart from this, students are also able to pursue other non-technical paths, should they desire.

LIST OF POLYTECHNIC/ UNIVERSITY	PROGRAMME	INFORMATION
	<ul style="list-style-type: none"> <li>• Bachelor Of Manufacturing Engineering Technology (Supply Chain Management) With Honours</li> </ul>	<p><b>Politeknik Ungku Omar</b> Jalan Raja Musa Mahadi, 31400 Ipoh Perak Tel: 05-5457656/7622 Web: <a href="http://www.puo.edu.my">http://www.puo.edu.my</a></p>
	<ul style="list-style-type: none"> <li>• Bachelor of Manufacturing Engineering Technology (Automotive Design) with Honours</li> </ul>	<p><b>Politeknik Sultan Azlan Shah</b> Behrang Stesen, 35950 Behrang Perak Tel: 05-4544431 ext. 4109 Web: <a href="http://www.psas.edu.my">http://www.psas.edu.my</a></p>
	<ul style="list-style-type: none"> <li>• Bachelor of Mechanical Engineering with Honours</li> <li>• Bachelor of Mechanical Engineering Technology (Manufacturing) with Honours</li> </ul>	<p><b>Universiti Tun Hussein Onn Malaysia (UTHM)</b> 86400 Parit Raja, Batu Pahat Johor, Malaysia  Tel: +607-453 7000 Fax: +607-453 6337 Web: <a href="http://www.uthm.edu.my">www.uthm.edu.my</a></p>





# HIGHER ACADEMIC PATH-

LIST OF UNIVERSITY	PROGRAMME	INFORMATION
	<ul style="list-style-type: none"> <li>● Bachelor Of Mechanical Engineering With Honours</li> <li>● Bachelor Of Mechanical Engineering Technology (Automotive Technology) With Honours</li> <li>● Bachelor Of Mechanical Engineering Technology (Maintenance Technology) With Honours</li> <li>● Bachelor Of Mechanical Engineering Technology With Honours</li> <li>● Bachelor Of Mechanical Engineering Technology (Refrigeration And Air Conditioning Systems) With Honours</li> <li>● Bachelor Of Manufacturing Engineering Technology (Product Design) With Honours</li> </ul>	<p><b>Universiti Teknikal Malaysia Melaka</b>, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia.</p> <p>Tel: +606-555 2000            Fax: +606-331 6247            Web: <a href="http://www.utem.edu.my">www.utem.edu.my</a></p>
	<ul style="list-style-type: none"> <li>● Bachelor of Mechanical Engineering with Honours</li> <li>● Bachelor of Manufacturing Engineering with Honours</li> <li>● Bachelor of Materials Engineering with Honours</li> <li>● Bachelor of Mechanical Engineering Technology (Honours) (Machining)</li> <li>● Bachelor of Mechanical Engineering Technology (Honours) (Material Processing)</li> <li>● Bachelor of Mechanical Engineering Technology (Honours) (Product Development)</li> </ul>	<p><b>Universiti Malaysia Perlis</b>, Campus Alam Pauh Putra, Arau Perlis 02600, Malaysia.</p> <p>Tel.: +6049885340/73            Fax: +6049885339            Web : <a href="http://www.unimap.edu.my">www.unimap.edu.my</a></p>
	<ul style="list-style-type: none"> <li>● B.Eng (Hons.) Mechanical Engineering</li> <li>● B.Eng (Hons.) Manufacturing Engineering</li> <li>● Bachelor of Engineering Technology (Manufacturing) with Hons.</li> <li>● Bachelor of Occupational Safety and Health with Hons</li> </ul>	<p><b>Universiti Malaysia Pahang</b> Lebuhraya Tun Razak 26300 Gambang Kuantan Pahang Darul Makmur</p> <p>Tel: 09-5492765            Fax: 09-5492765            Web: <a href="http://www.ump.edu.my">www.ump.edu.my</a></p>

## HIGHER ACADEMIC PATH-

LIST OF UNIVERSITY	PROGRAMME	INFORMATION
 <p><b>UTM</b> UNIVERSITI TEKNOLOGI MALAYSIA</p>	<ul style="list-style-type: none"> <li>● Bachelor of Mechanical Engineering with Honours</li> <li>● Bachelor of Mechanical Engineering (Materials) with Honours</li> <li>● Bachelor of Mechanical Engineering (Industrial) with Honours</li> <li>● Bachelor of Mechanical Engineering (Manufacturing) with Honours</li> <li>● Bachelor of Technology with Education (Mechanical Engineering) with Honours</li> </ul>	<p><b>Universiti Teknologi Malaysia,</b> UTM Skudai, 81310 Johor, Malaysia.</p> <p>Tel : (6)07 - 5530370 Fax : (6)07 - 5530388 Web : www.utm.my</p>
 <p><b>UNIVERSITI TEKNOLOGI MARA</b></p>	<ul style="list-style-type: none"> <li>● Bachelor of Engineering (Hons) Mechanical</li> <li>● Bachelor of Mechanical Engineering (Manufacturing)</li> </ul>	<p><b>Universiti Teknologi MARA (UiTM)</b> 40450 Shah Alam, Selangor Darul Ehsan, Malaysia</p> <p>Tel : (6)03-55442000 Web: www.uitm.edu.my</p>
 <p><b>UPM</b> UNIVERSITI PUTRA MALAYSIA</p>	<ul style="list-style-type: none"> <li>● Bachelor of Engineering (Mechanical)</li> </ul>	<p><b>Universiti Putra Malaysia</b> 43400 UPM Serdang Selangor Darul Ehsan Malaysia</p> <p>Tel : (6)03.8946.6000 Fax : (6)03.8948.7273 Web: www.upm.edu.my</p>
 <p><b>UNIVERSITI KEBANGSAAN MALAYSIA</b> National University of Malaysia</p>	<ul style="list-style-type: none"> <li>● Bachelor of Mechanical Engineering with Honours</li> </ul>	<p><b>Universiti Kebangsaan Malaysia,</b> 43600 UKM, Bangi Selangor, Malaysia I</p> <p>Tel : (6)03 8921 5555 I Fax : (6)03 8921 5555 Web : www.ukm.my</p>
 <p><b>USM</b> UNIVERSITI SAINS MALAYSIA</p>	<ul style="list-style-type: none"> <li>● Bachelor of Mechanical Engineering [Honours]</li> </ul>	<p><b>Universiti Sains Malaysia,</b> 11800 USM Pulau Pinang Malaysia</p> <p>Tel : (6)04-653 3888 Fax : (6)04-658 9666 Web : www.usm.my</p>

## HIGHER ACADEMIC PATH-

LIST OF UNIVERSITY	PROGRAMME	INFORMATION
	<ul style="list-style-type: none"> <li>• Bachelor of Mechanical Engineering</li> <li>• Bachelor of Mechanical Engineering (Materials)</li> <li>• Bachelor of Mechanical Engineering (Manufacturing)</li> <li>• Bachelor of Mechanical Engineering (Product Design)</li> </ul>	<p><b>University of Malaya,</b> 50603 ,Kuala Lumpur, MALAYSIA</p> <p><b>Tel :</b> (6) 03-7967 7022/3273 <b>Fax :</b> (6)03-7956 0027 <b>Web :</b> www.um.edu.my</p>
	<ul style="list-style-type: none"> <li>• Bachelor of Mechanical Engineering with Honours</li> </ul>	<p><b>University Malaysia Sabah,</b> Jalan UMS, 88400 ,Kota Kinabalu, Sabah, MALAYSIA</p> <p><b>Tel :</b> (6) 088-320000 <b>Fax :</b> (6)088-320223 <b>Web :</b> www.ums.edu.my</p>
	<ul style="list-style-type: none"> <li>• Bachelor Engineering in Manufacturing Engineering</li> <li>• Bachelor Engineering in Materials Engineering</li> </ul>	<p><b>International Islamic University Malaysia,</b> P.O. Box 10, 50728 Kuala Lumpur</p> <p><b>Tel :</b> (6) 036196 4000 <b>Fax :</b> (6) 036196 4053 <b>Web :</b> www.iium.edu.my</p>
	<ul style="list-style-type: none"> <li>• Bachelor of Mechanical Engineering with Honours</li> </ul>	<p><b>University Pertahanan Nasional Malaysia,</b> Kem Sungai Besi, 57000 ,Kuala Lumpur, MALAYSIA</p> <p><b>Tel :</b> (6) 03-9051 3400 <b>Fax :</b> (6)03-9051 3028 <b>Web :</b> www.upnm.edu.my</p>

# DEPT. OF MATHEMATICS, SCIENCE



## Introduction

The Department of Mathematics, Science & Computer which is also known as JMSK is an academic supporting department. It is responsible for the B code courses in three different fields that are Mathematics, Science and Computer. Besides, it also performs the academic supporting tasks (administration) in PMM.

This department was set up in November 2002 and is currently running with 31 lecturers, one laboratory assistant, one computer technician and one operational assistant.

JMSK is managed by the head of department ; supported by three (3) head of courses of Mathematics, Science and Computer. These head of courses are responsible in monitoring staffs under their supervisions in order to ensure the learning and teaching implementations run effectively. Besides, JMSK also managed a Pre Diploma Science programme which is supervised by a Head of Programme.

This department is equipped with computer laboratories, science laboratories, Technology Enabled Collaborative Classroom (TECC), meeting room, discussion room, prayer room and R & R corner.



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# FACILITIES



**TECC**



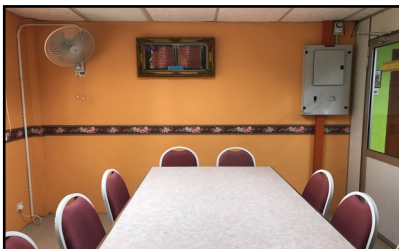
**Computer Laboratory**



**Classroom**



**Science Laboratory**



**Discussion Room**



**Lecturer Meeting Room**



**Prayer Room**



**Gazebo**

## SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	Engineering Mathematics 1 DBM10013	3	ENGINEERING MATHEMATICS 1 exposes students to the basic algebra including resolve partial fractions. This course also covers the concept of trigonometry and the method to solve trigonometry problems by using basic identities, compound angle and double angle formulae. Students will be introduced to the theory of complex number and concept of vector and scalar. Students will explore advanced matrices involving $3 \times 3$ matrix.	<p>Upon completion of this course, students should be able to:</p> <p>CLO1 : Use mathematical statement to describe relationship between various physical phenomena. ( C3 , CLS 1 )</p> <p>CLO2 : Show mathematical solutions using the appropriate techniques in mathematics. ( C3 , CLS 3c )</p> <p>CLO3 : Use mathematical expression in describing real engineering problems precisely, concisely and logically. ( A3 , CLS 3b )</p>
1	Engineering Science DBS10012	2	ENGINEERING SCIENCE course introduces the physical concepts required in engineering disciplines. Students will learn the knowledge of fundamental physics in order to identify and solve engineering physics problems. Students will be able to perform experiments and activities to mastery physics concepts.	<p>Upon completion of this course, students should be able to:</p> <p>CLO1 : Use basic physics concept to solve engineering physics problems ( C3, CLS 1 )</p> <p>CLO2 : Apply knowledge of fundamental physics in activities to mastery physics concept. ( C3, CLS 1 )</p> <p>CLO3 : Perform appropriate activities related to physics concept ( P3, CLS 3a )</p>

## SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	Engineering Mathematics 2 DBM20023	3	ENGINEERING MATHEMATICS 2 exposes students to the basic laws of indices and logarithms. This course introduces the basic rules of differentiation concepts to solve problems that relates maximum, minimum and calculate the rates of changes. This course discusses integration concepts in order to strengthen student's knowledge for solving area and volume bounded region problems. In addition, students will learn application of both techniques of differentiation and integration.	Upon completion of this course, students should be able to:  CLO1 : Use algebra and calculus knowledge to describe relationship between various physical phenomena. ( C3 , CLS 1 )  CLO2 : Solve the mathematical problems by using appropriate and relevant fundamental calculus techniques. ( C3 , CLS 3c )  CLO3 : Use mathematical language to express mathematical ideas and arguments precisely, concisely and logically in calculus. ( A3 , CLS 3b )
3	Engineering Mathematics 3 DBM30033	3	ENGINEERING MATHEMATICS 3 exposes students to the statistical and probability concepts and their applications in interpreting data. The course also introduces numerical methods concept to solve simultaneous equations by using Gaussian Elimination method, LU Decomposition using Doolittle and Crout methods, polynomial problems using Simple Fixed Point Iteration and Newton-Raphson methods. In order to strengthen the students in solving engineering problems, Ordinary Differential Equation (ODE) is also included. In additional, the course also discusses optimization problems by using Linear Programming. It is designed to build students' teamwork and problems solving skill.	Upon completion of this course, students should be able to:  CLO1 : Demonstrate an understanding of the common body of knowledge in mathematics. ( C3 , CLS 1 )  CLO2 : Demonstrate problems solving skills in engineering problems. ( C3 , CLS 3c )  CLO3 : Use mathematical expression in describing real engineering problems precisely, concisely and logically. A3 , CLS 3b )

# DEPARTMENT OF GENERAL



## Introduction

The General Studies Department strives to produce excellent students in both cognitive and spiritual faculties. For that end, the department provides courses that complement the programmes offered by the main departments.

The English courses prepare the students with the essential knowledge and skills in communication to meet the challenges in their future workplace. Apart from that, students are also nurtured with the teachings of Islam, moral values and the knowledge of Islamic civilization.

This department comprises the Head of Department, together with two Heads of Course and also lecturers from the English Language Unit and the Islamic Education and Moral Studies Unit. The English Language Unit consists of 12 lecturers while the Islamic Education and Moral Studies unit has a total number of 12 lecturers. Furthermore, the department has two language laboratories and one technology enable classroom (TEC) that are equipped with the necessary peripherals to enhance the languages learning and teaching sessions.

Lastly, it is with high expectation that this Programme Handbook will enlighten the students regarding the courses offered by the Department of General Studies, Politeknik Merlimau.

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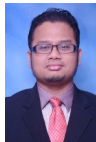
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# SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	Penghayatan Etika dan Peradaban MPU21032	2	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.	<p>CLO1 : membentangkan konsep etika dan peradaban dalam kepelbagaian tamadun. ( A2 , CLS 5 )</p> <p>CLO2 : menerangkan sistem, tahap perkembangan, kesepaduan sosial dan kebudayaan merentas bangsa di Malaysia. ( A2 , CLS 5 )</p> <p>CLO3 : mencadangkan sikap yang positif terhadap isu dan cabaran kontemporari dari perspektif etika dan peradaban. ( A3 , CLS 4 )</p>
	Communicative English 1 DUET10012	2	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.	<p>CLO1 : Participate in a discussion using effective communication and social skills to reach an amicable conclusion by accommodating differing views and opinions ( A3 , CLS 3b )</p> <p>CLO2 : Demonstrate awareness of values and opinions embedded in texts on current issues ( A3 , CLS 3b )</p> <p>CLO3 : Present a topic of interest that carries identifiable values coherently using effective verbal and nonverbal communication skills ( A2 , CLS 4 )</p>

## SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
2	Sains, Teknologi dan Kejuruteraan dalam Islam* MPU23052	2	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	<p>CLO1 : Melaksanakan dengan yakin amalan Islam dalam kehidupan seharian ( A2 , CLS 4 )</p> <p>CLO2 : Menerangkan etika dan profesionalisme berkaitan sains teknologi dan kejuruteraan dalam Islam ( A3 , CLS 5 )</p> <p>CLO3 : Menghubungkan minda ingin tahu dengan prinsip syariah, etika dan kaedah fiqh dalam bidang sains, teknologi dan kejuruteraan menurut perspektif Islam ( A4 , CLS 4 )</p>
	Nilai Masyarakat Malaysia** MPU23042	2	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	<p>CLO1 : Membincangkan sejarah dan nilai dalam pembentukan masyarakat di Malaysia ( A2 , CLS 4 )</p> <p>CLO2 : Menerangkan etika dan profesionalisme terhadap konsep perpaduan bagi meningkatkan semangat patriotisme masyarakat Malaysia ( A3 , CLS 5 )</p> <p>CLO3 : Menghubungkan minda ingin tahu dengan cabarancabaran dalam membentuk masyarakat Malaysia ( A4 , CLS 4 )</p>

## SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
3	Communicative English 2 DUE30022	2	COMMUNICATIVE ENGLISH 2 emphasises the skills required at the workplace to describe products or services as well as processes or procedures. This course will also enable students to make and reply to enquiries and complaints.	<p>CLO1 : Describe a product or service effectively by highlighting its features and characteristics that appeal to a specific audience ( A3 , CLS 3b )</p> <p>CLO2 : Describe processes, procedures and instructions clearly by highlighting information of concern ( A3 , CLS 4 )</p> <p>CLO3 : Demonstrate effective communication and social skills in handling enquiries and complaints amicably and professionally ( A3 , CLS 3b )</p>
4	Communicative English 3 DUE50032	2	COMMUNICATIVE ENGLISH 3 aims to develop the necessary skills in students to analyse and interpret graphs and charts from data collected as well as to apply the job hunting mechanics effectively in their related fields. Students will learn to gather data and present them through the use of graphs and charts. Students will also learn basics of job hunting mechanics which include using various job search strategies, making enquiries, and preparing relevant resumes 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.	<p>CLO1 : Present gathered data in graphs and charts effectively using appropriate language forms and functions ( A2 , CLS 3b )</p> <p>CLO2 : Prepare a high impact resume and a cover letter, highlighting competencies and strengths that meet employer's expectations ( A4 , CLS 4 )</p> <p>CLO3 : Demonstrate effective communication and social skills in handling job interviews confidently ( A3 , CLS 3b )</p>

## SYNOPSIS & COURSE LEARNING

SEMESTER	COURSE	CREDIT	SYNOPSIS	CLO
1	Bahasa Keangsaan A MPU22042	2	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.	CLO1 : Menunjukkan cara berinteraksi yang baik dalam pelbagai situasi ( A3 , CLS 3b )  CLO2 : Menulis pelbagai jenis bentuk penulisan dengan jelas dan bersistematik ( A2 , CLS 3b )  CLO3 : Menunjukkan kaedah bertutur dalam komunikasi lisan dengan sebutan dan intonasi yang betul ( A3 , CLS 4 )

# UNIT OF SPORTS, CO CURRICULUM &

## Introduction

Unit of Sports, Co-curriculum and Cultural (USKK) Politeknik Merlimau is responsible for the planning, management and implementation of all activities regarding sports, co curriculum and cultural events in PMM. This unit comprises of three sub-unit, the sports, co-curriculum and also cultural. The activities are designed for every semester based on given schedule and academic calendar.

The sports sub unit is responsible for planning the implementation of sports activities for PMM students. In PMM the sport sub-unit is directly involved with the Polytechnic Sports Council (MSP) in conducting sports competitions among polytechnics students in other polytechnics in Malaysia.

For the learning and teaching activities, the Co-curriculum sub-unit plays an important role in coordinating, supervising, and monitoring the co-curriculum courses. The co-curriculum sub-unit offers 3 types of courses, the DRB1000, DRS2001 and DRK3002 that is compulsory for every student to enrol.

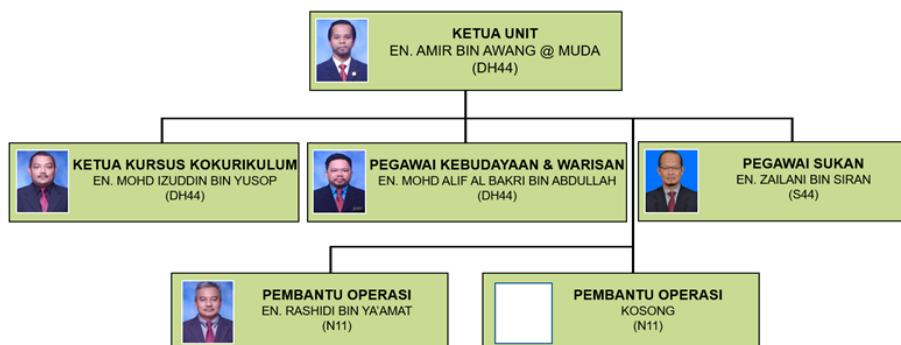
The cultural and heritage sub-unit is responsible for the management and organization of the implementation of arts and cultural programmes in PMM. This sub-unit also helps students and polytechnics in particular in the handling of protocol and etiquette such as convocation ceremony.

CONTACT PERSON	CONTACT NO
En Amir bin Awang @ Muda Head of Department	Ext : 1220 Email: amir_awang@pmm.edu.my
En Mohd Izuddin bin Yusop Head of Cocurriculum Course	Ext : 1221 Email: izuddin@pmm.edu.my
En. Mohd Alif Al Bakri bin Abdullah Cultural & Heritage Officer	Ext : 1224 Email: alfred@pmm.edu.my
En. Zailani bin Siran Sports Officer	Ext : 1222 Email: zailani@pmm.edu.my
En Rashidi bin Ya'amat Operation Assistant	Ext : 1225 Email: rashidi@pmm.edu.my

# LIST OF STAFF

	<p>Name: Amir bin Awang @ Muda          Position: Head of Unit          Majoring: Bachelor in Electrical Eng          Ext: 1220          Email: amir_awang@pmm.edu.my</p>
	<p>Name: Mohd Izuddin bin Yusop          Position: Head of Cocurriculum Course          Majoring: Bachelor in Physical Education          Ext: 1221          Email: mohdizuddin@pmm.edu.my</p>
	<p>Name: Mohd Alif Al Bakri bin Abdullah          Position: Cultural &amp; Heritage Officer          Majoring: Bachelor in Technology &amp; Education (Mechanical Eng)          Ext: 1224          Email: alfred@pmm.edu.my</p>
	<p>Name: Zailani bin Siran          Position: Sports Officer          Majoring: Bachelor of Sports Science          Ext: 1222          Email: zailani@pmm.edu.my</p>
	<p>Name: Rashidi bin Ya'amat          Position: Operation Assistant          Ext : 1223          Email: rashidi@pmm.edu.my</p>

**CARTA ORGANISASI  
 UNIT SUKAN, KOKURIKULUM DAN KEBUDAYAAN  
 POLITEKNIK MERLIMAU MELAKA 2020**



# FACILITIES



**Basketball Court**



**Takraw Court**



**Tennis Court**



**Futsal Court**



**Rugby Field**



**Football Field**



**Petanque Field**



**Volleyball Court**



# FACILITIES



**Music Studio**



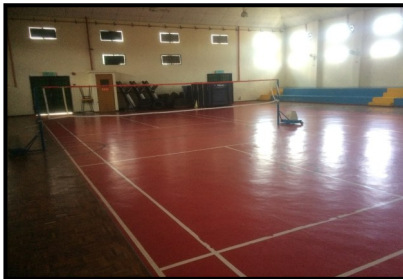
**Music set**



**Squash Court**



**Table Tennis**



**Multi Purpose Court (Indoor)**



**Golf Green**



**Sport Centre**



**Multipurpose Court**

# DEPT. OF STUDENT AFFAIR AND DEVELOP-

## Introduction

Department of Student Affair is entrusted for the students' activities and governance under two main sub-officers pertaining to Recruitment & Data and Welfare & Discipline. Thus, this department deals with managing students' registration, updating students' records, managing financial support for students, and also monitoring students' discipline and welfare.

### Activities of the Department :-

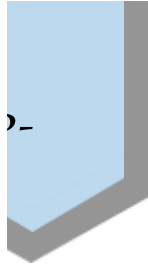
#### Recruitment & Data

- Managing students' registration
- Managing students' card (smartcard)
- Managing the record and statistic of student
- Managing recruitment - please log to [www.politeknik.edu.my](http://www.politeknik.edu.my)

#### Welfare & Discipline :-

- Managing students' welfare
- Managing financial aid and support such as students' study loans
- Managing vehicle pass for students
- Monitoring students discipline
- Managing Student representative committee

CONTACT PERSON	CONTACT NO
Ts. Zan Aizuwan Bin Zainal Abidin Head of Department	Ext : 1180 Email: zanaizuwan@pmm.edu.my
Pn. Azrina Binti Mohamad Sabiri Students Affair Officer (Recruitment & Data)	Ext : 1181 Email: azrina@pmm.edu.my
En Mohd Shafie Bin Osman Students Affair Officer (Welfare & Discipline)	Ext : 1184 Email: mohdshafie@pmm.edu.my
En Mohd Izwan Bin Md. Pojan Students Affair Officer (Registration)	Ext : 1183 Email: mohdizwan@pmm.edu.my
Pn Masitah Yaakub Scholarship Officer	Ext : 1187 Email: masitah@pmm.edu.my



# UNIT OF EXAMINATION

## Introduction

Examination Unit is responsible to coordinate and to handle activities regarding final examination and certification. The unit is fully supported by all departments to fulfil the responsibilities given. Examination Officer is responsible to monitor the whole examination process of polytechnic while Examination Coordinator is to manage things regarding examination for their respective departments. Other than that, Examination Unit also cooperate in organising workshops related to examination such as Assessments and Vetting Workshop which is organised every semester in order to produce high quality examination questions to be applied in the Final Examination of Politeknik KPT.

The unit is led by the Head of Unit who is responsible to coordinate and facilitate the management of the process of assessment and examination. The Head of Unit is supported by two Examination Officers whom one is in charge of the Records, Data and Certifications and the other is in charge in Management, Assessment and Bank Rate question :-

Activities carried out by the Examination Unit

- Preparing examination papers
- Conducting the final examination
- Processing the results of assessments
- Certification and Student Excellence Award
- Enforcement of assessment rules
- Administrating the Examination Unit

CONTACT PERSON	CONTACT NO
Zaidah Binti Abd Umar Head of Unit	Ext :1040 Email : zaidah@pmm.edu.my
Dewi Muhiani binti Tumiran Examination Officer (Records & Certification)	Ext :1041 Email : dewimuhuani@pmm.edu.my
Norarsaliana binti Arbain Examination Officer (Assessment Management)	Ext :1042 Email : norarsaliana@pmm.edu.my



# UNIT OF TRAINING & CONTINUING

## Introduction

The Unit of Training and Continuing Education (ULPL) is a unit under the office of Deputy Director of Academic Support, Politeknik Merlimau. The unit is responsible for the re-skilling and up-skilling of human capital of Politeknik Merlimau and also for private sector or other government departments / agencies.

The main activities of this unit are to:

1. manage training or courses for staffs.
2. manage part-time programme (*Kursus Secara Sambilan — KSS*) as to provide opportunities for those who want to pursue their diploma whilst working.
3. implement live long training program. The program offers opportunities for private sector or other government departments / agencies to develop their human capital through training and education resources in polytechnic with affordable rates.
4. manage and coordinate the use of polytechnic training facilities for private sector or other government departments / agencies.

CONTACT PERSON	CONTACT NO
Suhana binti Sabran Head of Unit	Ext :1150 Email : suhanasabran@pmm.edu.my
Hazreen bin Othman Training & Continuing Education Officer	Ext : 1151 Email : hazreen@pmm.edu.my



# UNIT OF LIBRARY

## Introduction

The Library Unit has been established since 2002. The objectives are to:

1. Become the centre of excellence for information and referral centre
2. Support PMM in producing semi-professional, knowledgeable workforce
3. Develop, document and maintain the information sources for the requirements of teaching and learning by:
  - a. using the world standard cataloguing classification (Library of Congress Classification Outlines)
  - b. using the new technology of cataloguing system (WEBOPAC) and electronic resources
  - c. digitizing the documents related to learning such as examination paper, bulletin etc.
4. Provide and manage information services and conducive library facilities such as:
  - a. Open shelf Collection
  - b. Reference Collection
  - c. Serial Collections
  - d. Examination paper Collection

CONTACT PERSON	CONTACT NO
Norshazreen Binti Yunus Librarian	Ext :1121 Email : norshazreen@pmm.edu.my
Rominah Binti Ghani Assistant librarian	Ext :1122 Email : rominah@pmm.edu.my



# UNIT OF PSYCHOLOGY MAN-

## Introduction

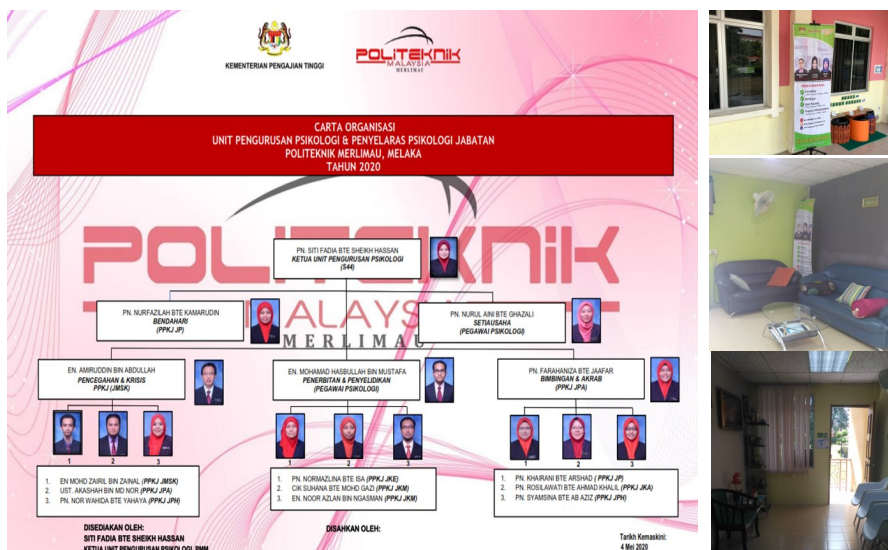
Psychology Management Unit Politeknik Melimau, Melaka is an academic support unit which works in the development and soft skills for both students and staff.

Currently, Management Psychology comprises 3 Psychology Officer and is one unit under the supervision of Head of the Student Affairs Department and the Deputy Director (Academic Support).

The goal of this unit is to help the student progress toward academic excellence, social, personal, spiritual and career; planning, implementation, evaluation and control of Psychology and Counseling Services Program effectively at the Polytechnic.

What Is Counseling? Counseling is a face to face relationship between normal individuals to understand themselves and the situation, using potential by utilizing the self, family, religion, society and religion also learn how to deal with problems in meeting their needs today and tomorrow.

Counseling Ethics Code is to respect client privacy and confidentiality of information.





# UNIT OF RESEARCH AND INNO-

## Introduction

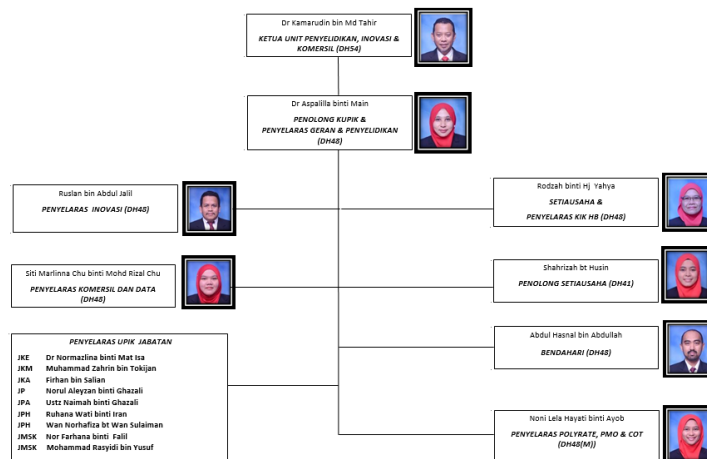
Research Unit, Innovation and Commercial (UPIK) created by the system of Polytechnic Education Department, Ministry of Higher Education to inculcate the culture of research at the polytechnic. UPIK plan an important role as a centre of coordination of research, innovation and commercial lecturers and staff. UPIK also serves as a central collection and scientific writing reference material, material innovations and research institutions, zones, national and international.

The objectives of the unit are to ;

1. become the centre of research, innovation and commercialization activities.
2. coordinate and collaborate with industries and agencies the affairs pertaining to Research & Development (R&D), commercialization and innovation.
3. become the centre of information and data management related to the students' as well as lecturers' products/projects, innovations and commercialisation at polytechnic level.
4. plan, manage and monitor the implementation and data gathering with regard to R&D, educational research and publication.



### CARTA ORGANISASI UNIT PENYELIDIKAN, INOVASI & KOMERSIL POLITEKNIK MERLIMAU, MELAKA.



# UNIT OF INDUSTRIAL LIAISON

## Introduction

Industry Training is a major component of the learning curriculum at polytechnic. Students at diploma level must go through 20 weeks of internship training prior to graduation. The course covers a total of 10 credit hours inclusive of hands work, presentation, oral feedback session and report writing. During the training, students will have the opportunity to gain knowledge and experience on multiple discipline which include engineering, management, account and safety procedure.

Industrial training provides an avenue for students to practice and apply both their knowledge and skills in real working environments. Thus the internship, student should be able to achieve the following objective;

- Perform hands-n task, usage of tools and equipment, adapt a variety of technologies, apply the knowledge gained to perform task, show development in knowledge and skills and think creatively and critically.
- Ability to acquire and understand information, carry out instruction, analyze linear and non-linear information , shows appropriate non-verbal communication, communicate with employees at all levels and have basic negotiation skills.
- Show positive personality traits, participate actively as a members of the team, carry out task in appropriate situation and build and maintain good relationship.
- Comply with the policies and rules of the organization, job procedures and safety and health regulations.
- Report handed-in on time and verified by the supervisor, work independent with minimum supervision, attendance, punctuality and solve problem by taking right action.
- Present ideas and views and task reporting.

**CARTA ORGANISASI  
UNIT PERHUBUNGAN DAN LATIHAN INDUSTRI  
POLITEKNIK MERLIMAU, MELAKA.**

**En. Shah Bin Mohamad Bahr**  
KETUA UNIT PERHUBUNGAN DAN LATIHAN INDUSTRI (DIAI)

**Pn. Suan Siti Aisah**  
PELAKSANA PERHUBUNGAN DAN LATIHAN INDUSTRI PERHUBUNGAN INDUSTRI (DIAI)

**Pn. Nooraini Siti Azzah Rahman**  
PELAKSANA PERHUBUNGAN DAN LATIHAN INDUSTRI PERHUBUNGAN INDUSTRI (DIAI)

**En. Maimun Bahr Bin Jazal**  
PENSYAJI OPERASI (DIAI)

**POLITEKNIK MALAYSIA MERLIMAU**

**PELAKSANA LATIHAN INDUSTRI JABATAN KESEKUTUPAN ANAM**  
En. Amran Bin Nuar Mamat  
Pn. Nur Azzah Siti Nur Hafidza  
Pn. Nur Warisah Siti Laili

**PELAKSANA LATIHAN INDUSTRI JABATAN KESEKUTUPAN KEMAMPAH**  
Pn. Nur Hafidza Siti Nur Hafidza  
En. Yusoff Bin Ismail

**PELAKSANA LATIHAN INDUSTRI JABATAN KESEKUTUPAN MELAKA**  
Pn. Ramadhani Ramadhani  
Pn. Ramadhani Siti Aisah  
En. Shaikh Muhammad Saifullah Abd. Rahim

**PELAKSANA LATIHAN INDUSTRI JABATAN PERKHIDMATAN**  
Pn. Hafidza Siti Nur Hafidza  
Pn. Nur Hafidza Siti Nur Hafidza  
Pn. Nur Hafidza Siti Nur Hafidza

**PELAKSANA LATIHAN INDUSTRI JABATAN PERKHIDMATAN DAN HUBUNGAN**  
Pn. Maimun Bahr Bin Jazal  
En. Maimun Bahr Bin Jazal  
Pn. Nur Hafidza Siti Nur Hafidza  
Pn. Shaikh Muhammad Saifullah Abd. Rahim

The complex block includes an organizational chart for the Industrial Liaison Unit at Politeknik Merlimau, Melaka. The chart is headed by En. Shah Bin Mohamad Bahr, Ketua Unit Perhubungan dan Latihan Industri (DIAI). Below him are four main branches: 1. Pelaksana Perhubungan dan Latihan Industri Perhubungan Industri (DIAI), led by Pn. Suan Siti Aisah and Pn. Nooraini Siti Azzah Rahman. 2. Pensyaji Operasi (DIAI), led by En. Maimun Bahr Bin Jazal. 3. Pelaksana Latihan Industri Jabatan Kesekutupan Anam, led by En. Amran Bin Nuar Mamat, Pn. Nur Azzah Siti Nur Hafidza, and Pn. Nur Warisah Siti Laili. 4. Pelaksana Latihan Industri Jabatan Kesekutupan Kemampah, led by Pn. Nur Hafidza Siti Nur Hafidza and En. Yusoff Bin Ismail. 5. Pelaksana Latihan Industri Jabatan Kesekutupan Melaka, led by Pn. Ramadhani Ramadhani, Pn. Ramadhani Siti Aisah, and En. Shaikh Muhammad Saifullah Abd. Rahim. 6. Pelaksana Latihan Industri Jabatan Perkhidmatan, led by Pn. Hafidza Siti Nur Hafidza, Pn. Nur Hafidza Siti Nur Hafidza, and Pn. Nur Hafidza Siti Nur Hafidza. 7. Pelaksana Latihan Industri Jabatan Perkhidmatan dan Hubungan, led by Pn. Maimun Bahr Bin Jazal, En. Maimun Bahr Bin Jazal, Pn. Nur Hafidza Siti Nur Hafidza, and En. Shaikh Muhammad Saifullah Abd. Rahim. To the right of the chart are four photographs showing the physical environment of the unit: a reception desk, a meeting room, a computer workstation, and a general office area.



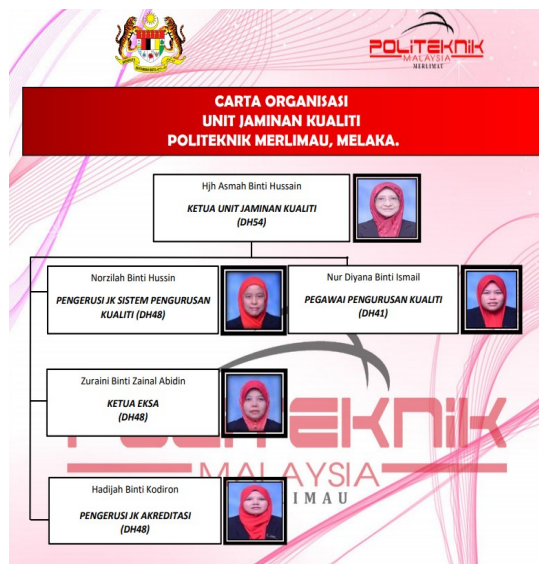
# UNIT OF QUALITY ASSUR-

## Introduction

Quality Assurance Unit is responsible for planning, implementing and monitoring the effectiveness of the programs related to the quality management system, in addition to being a coordinator (the coordinator) to officials in the department and the quality of the unit. This unit is under the responsibility of the Quality Manager and Deputy Director (Academic).

To further enhance the quality management system in PMM, it's run by two (2) weight of the Working Committee on Quality (JKKQ) chaired by the Quality Manager and comprises all Heads of Department and Head of Unit, while the Secretariat Quality (UQ), chaired by the Chief Executive Officer quality acting as the coordinator of the quality Officer and Administration Department. Both the operator is responsible for applying the values of quality to all citizens PMM through activities that have been planned.

The objective of this unit is to coordinate and implement a quality management system to strengthen the role of citizens PMM is more committed to the continuation of organizational excellence. The main task of the unit is to plan, implement and monitor the effectiveness of programs related to quality management for the excellent work culture and implement continuous improvement practices towards realizing the vision, mission and quality policy PMM. In addition, it is also responsible for coordinating the implementation of quality systems in PMM.



# UNIT OF CISEC

## Introduction

Establishment of the Corporate Industrial Services & Employability Center (CISEC) in polytechnics as an initiative towards stronger polytechnic and industrial relations. CISEC will be the one-stop center in meeting the needs of the industry interested in working with Polytechnic especially for commercialization projects and the management of facilities or consultancy services. Through CISEC, the process of matching workforce needs in the industry with the job search of polytechnic graduates is expected to be implemented more efficiently and systematically.

The CISEC was set up in July 2010 to support one of the Polytechnic Transformation agenda that enhances the marketability of polytechnic graduates. Therefore, CISEC will be the intermediary of polytechnics and industry in coordinating career development and graduate marketing programs through joint ownership and accountability, governance, student industrial training or training needs.

CONTACT PERSON	CONTACT NO
Mohd As'ri Bin Chik Head of CISEC	Ext : 1160 Email: mohdasri@pmm.edu.my
Azuan Binti Alias CISEC Officer	Ext : 1163 Email: azuan@pmm.edu.my





# UNIT OF KAMSIS

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## **Introduction**

Unit Kamsis role is to manage the placement of students. This unit is placed under the Student Affair Department. It is headed by a Assistant Manager Hostels, Senior Supervisor, four Hostel Supervisor and thirteen Warden (total of warden should be twenty eight).

Merlimau Polytechnic Hostel has six blocks of four-storey building that can accommodate a total of 1404 student with each building about 234 students. The capacity of each blocks for male and female student may change following application for each sessions.

## **FACILITIES PROVIDED**

Kamsis provide complete facilities such as mattresses, pillows, beds, wardrobes, tables and chairs, curtains, bookshelves and so on. Other facilities include:

- a) Study room;
- b) Common Room is equipped with television broadcasts Njoi;
- c) In-room ironing;
- d) washing machine in every level;
- e) Field and playground;
- f) The cafeteria operates from 7 am to 11 pm;
- g) Islamic Center;
- h) Internet (wifi); and
- i) Ease of filter machine hot / cold water in every block.

## **APPLICATION CONDITIONS KAMSIS RANKED**

- 1) Applications can be made online via the Student Information Management System (SPMP) in PMM portal.
- 2) Completed forms that have been submitted online must also be printed and sent to the Office of Management Kamsis before the closing date, together with other supporting documents such as:
  - i. salary slip / income verification letter that was approved by the headman or officer of the Management and Professional Group;
  - ii. health report that was confirmed by a physician for students who have serious health problems; and
  - iii. Death Certificate for orphans.

# UNIT OF KAMSIS

## SELECTION CRITERIA FOR STUDENTS OF KAMSIS POLITEKNIK MERLIMAU

Here are the selection criteria's for the Kamsis application:

- Salary and dependents of parents / guardians;
- Orphans;
- Discipline;
- Activities participated in Kamsis / Department;
- Distance home to the Polytechnic;
- Health problems;
- Form complete and the information is correct; and
- On availability



# UNIT OF ENTREPRENEURIAL

## Introduction

The entrepreneurship unit supports students, alumni, small business and researchers to promote the creation of new businesses in industrial, technological, and social services.

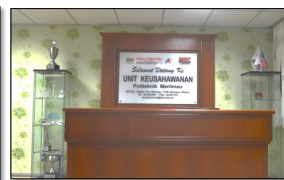
The unit aims to promote the created businesses to be innovative, technology-based, with capacity to grow and commitment to create high-quality jobs in the region. It also promotes self-employment of young graduates and educate them in starting a new business with a proper management.

The Entrepreneurship Unit of Politeknik Merlimau is located at Ground Floor of Commerce Department and open to public every working days from 8.30am to 5.30pm. The main objectives of the entrepreneurship unit are:

- Cultivate entrepreneurial attitudes and skills among students from any field of education;
- Organize entrepreneurship activities among students accordingly;
- Coordinate the creation of start-up business among students
- Provide entrepreneurship facilities for students;
- Build networking with industries and agencies for student's business matching
- Involve professionals, entrepreneurs and agencies in the transmission of the entrepreneurial experience and as sponsors of activities that take place.



CONTACT PERSON	CONTACT NO
Rabi'ah Seman Head of Entrepreneurship Unit	Ext : 1250 Email: rabiah@pmm.edu.my



# EDITORIAL BOARD



## **Patron**

Mohd Hatta bin Zainal

## **Advisor**

Rosita binti Zainal  
Hjh Asmah binti Hussain

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