

# POLITEKNIK NILAI, NEGERI SEMBILAN



## STUDENT HANDBOOK

2<sup>nd</sup> EDITION, AUGUST 2020

## PROGRAMME

DIPLOMA

IN

MECHANICAL ENGINEERING

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## **ABOUT POLITEKNIK NILAI**

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The Politeknik Nilai Negeri Sembilan (PNS) is the 23rd polytechnic set up under the Ministry of Higher Education Malaysia on 1 April 2007 under the 9th Malaysia Plan. PNS started operating on a temporary campus with the first intake of students in December 2007.

PNS moved to a permanent campus at the Kompleks Pendidikan Enstek in Negeri Sembilan in September 2011 on a 101.5 acre site comprising 37 administrative, academic, kamsis and staff building blocks. The campus is capable of accommodating 2,400 students with a capacity of 1,200 students.

PNS consists of three academic departments and supported by two others department: General Studies department and Mathematics, Science and Computer department. Below is the list of programme offered:

### **JABATAN PERDAGANGAN**

- Diploma in Islamic Banking and Finance (DIB)
- Diploma in Logistics and Supply Chain Management (DLS)
- Diploma in Retail Management (DRM)
- Diploma in Business Studies (e-Commerce) (DBS)

### **JABATAN KEJURUTERAAN MEKANIKAL**

- Diploma in Mechanical Engineering (DKM)
- Diploma in Mechatronic Engineering (DEM)

### **JABATAN AGROTEKNOLOGI DAN BIO-INDUSTRI**

- Diploma in Bio-technology (DBT)
- Diploma in Horticultural Landscape (DLH)



## VISION AND MISSION

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### DEPARTMENT OF POLYTECHNIC AND COMMUNITY COLLEGE EDUCATION (DPCCE)

#### *VISION*

To be the Leading - edge TVET institution

#### *MISION*

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

### POLITEKNIK NILAI

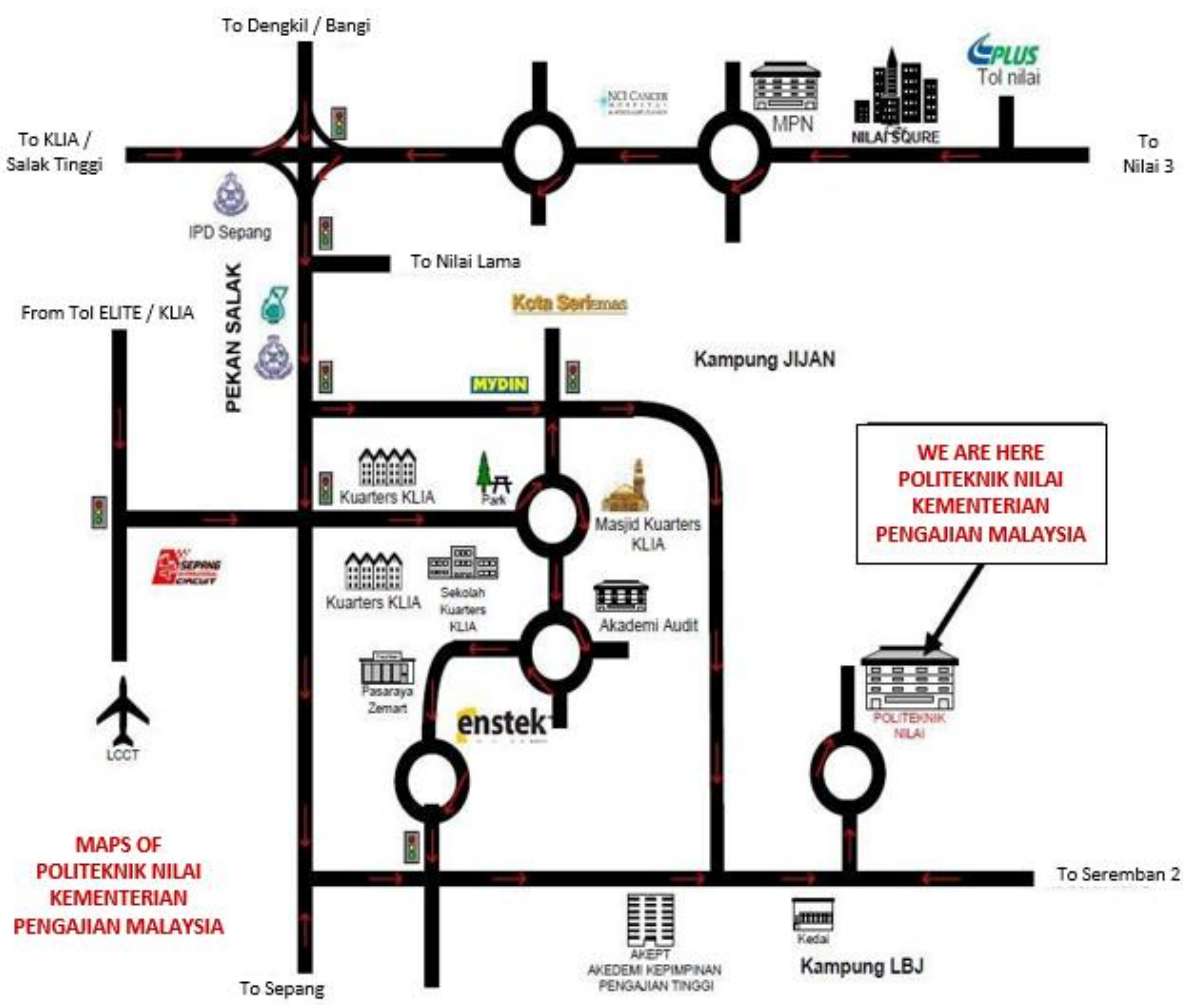
#### *VISION*

To be the Leading - edge TVET institution






#### *MISION*

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

# PNS MAPS

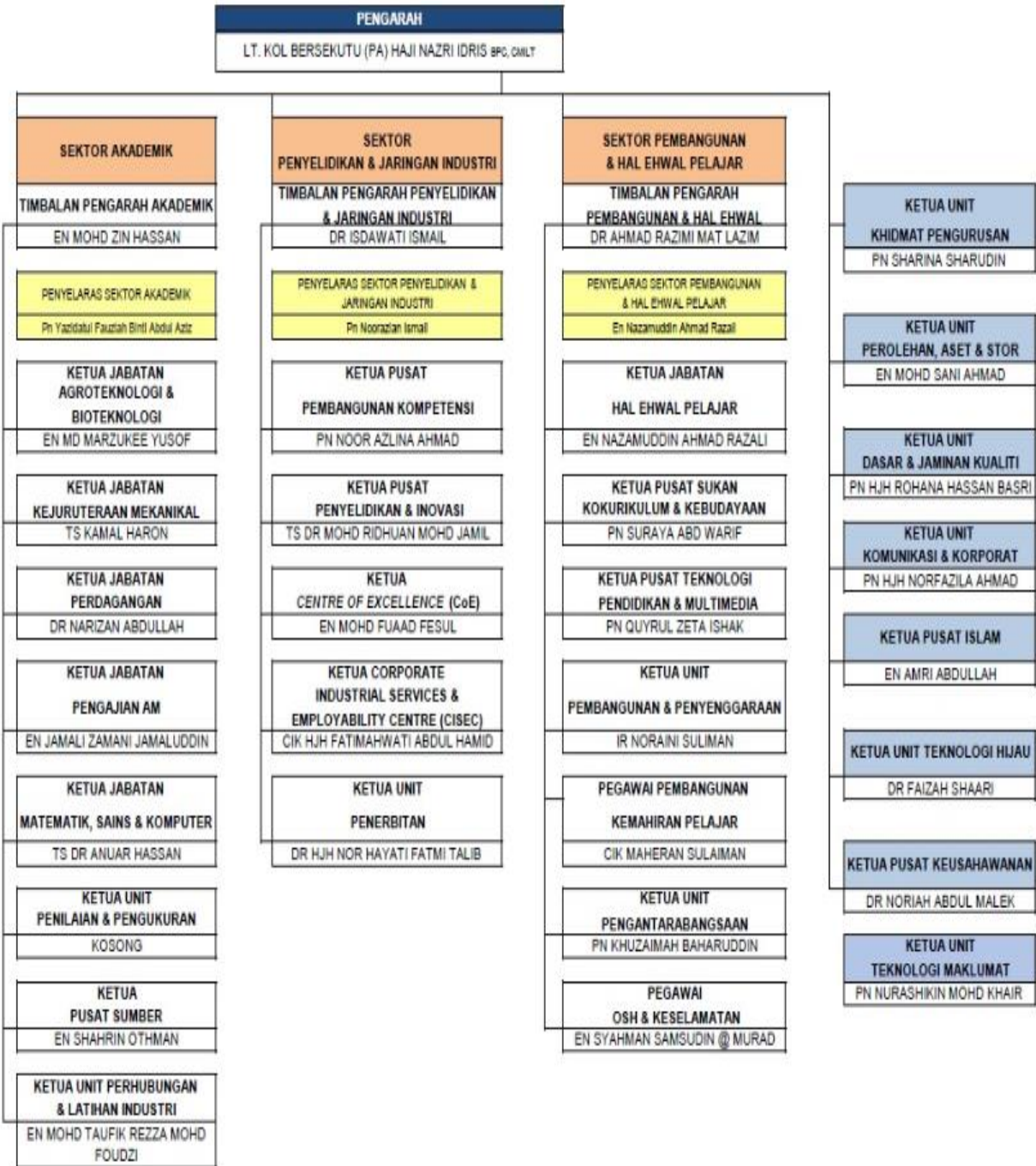


MAPS OF POLITEKNIK NILAI KEMENTERIAN PENGAJIAN MALAYSIA

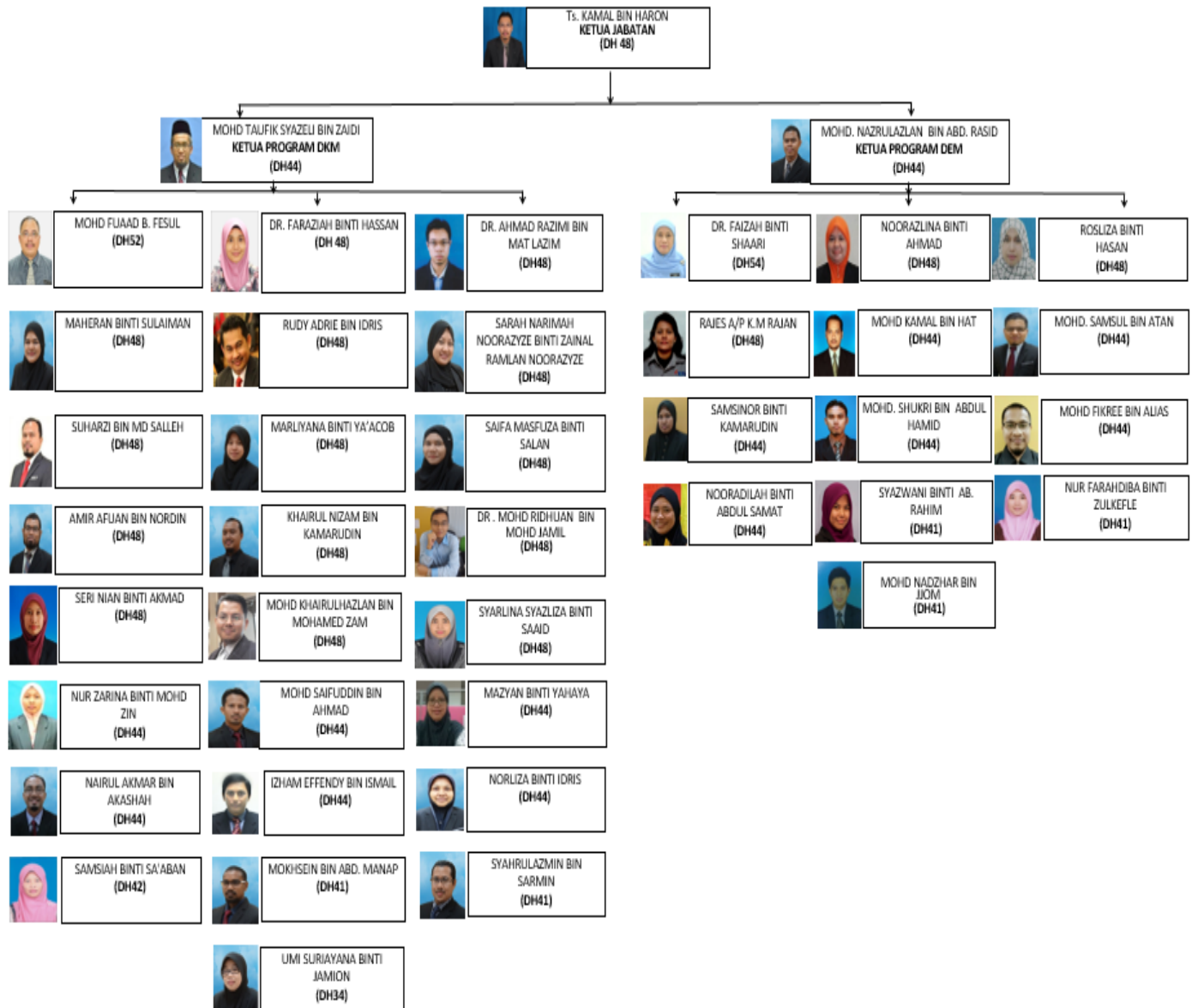
-  Kompleks Pendidikan Bandar Enstek, 71760 Bandar Enstek, Negeri Sembilan.
-  06-7980400
-  06-7911269
-  [webmasterpns@polinilai.edu.my](mailto:webmasterpns@polinilai.edu.my)
-  <https://pns.mypolycc.edu.my>



# PNS ORGANIZATION CHART



# JKM ORGANIZATION CHART





# OUTCOME BASED EDUCATION OBE

Addresses the following  
Key questions :

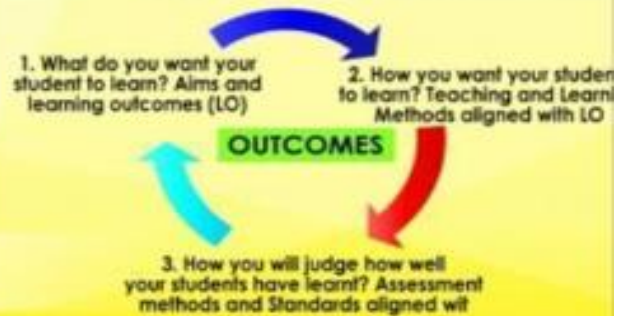
- What do you want the student to have or to be able to do?
- How can you best help student achieve it?
- How will you know whether they have achieved it?
- How do you measure the attainment (*close the loop - kesalahan tidak dikomen orang luar*).

What is Outcome-Based Education?

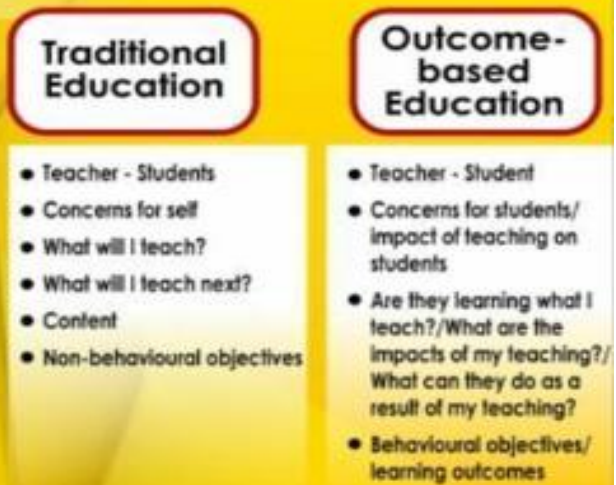
Outcomes Based Education focuses on student learning by:

1. Using learning outcome statements to make explicit what the student is expected to be able to **know, understand or do**;
2. **Providing learning activities** which will help the student to **reach these outcomes**;
3. **Assessing the extent** to which the student meets these outcomes through the use of explicit **assessment criteria**.

## OBE PHILOSOPHY



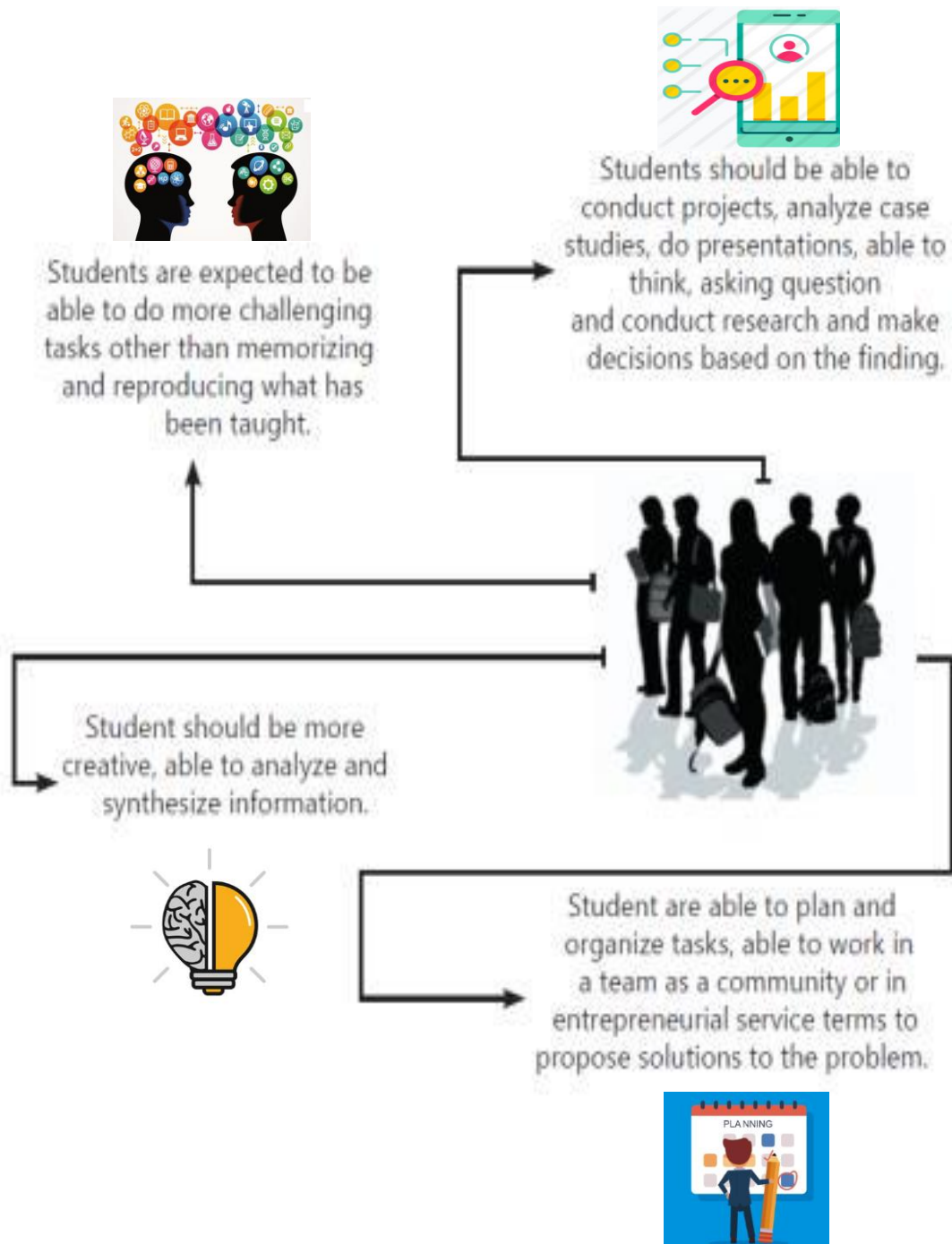
## SHIFT FROM TRADITIONAL EDUCATION TO OBE



## OBE PHILOSOPHY



# THE OBE IMPACT







## ENGINEERING TECHNOLOGY ACCREDITATION COUNCIL

### WHAT IS ETAC ?

ETAC or Engineering Technology Accreditation Council (ETAC) is a delegated body of the Board of Engineering Malaysia (BEM). ETAC provides smooth transition in the accreditation of engineering Technology and Engineering Technician education programs based on Sydney Accord.

In 2015, BEM established ETAC that comprises seven members which are BEM, learned bodies, industry/employer, Public Services Department (PSD), Malaysian Qualification Agency (MQA), Ministry, and public representatives. ETAC then has become the recognized accrediting body of engineering technology bachelor degree, engineering diploma and engineering technology diploma programs offered in Malaysia.

### ACCREDITATION OBJECTIVES

1. The graduates of the accredited engineering programs meet the minimum academic requirements to be registered as graduate engineer with BEM.
2. The Continual Quality Improvement (CQI) is being practiced by Institutions of Higher Learning (IHLs). Accreditation may also serves as atool to benchmark engineering programs offered by IHLs in Malaysia.

### ADVANTAGES FOR STUDENT AND ORGANIZATION (ETAC)

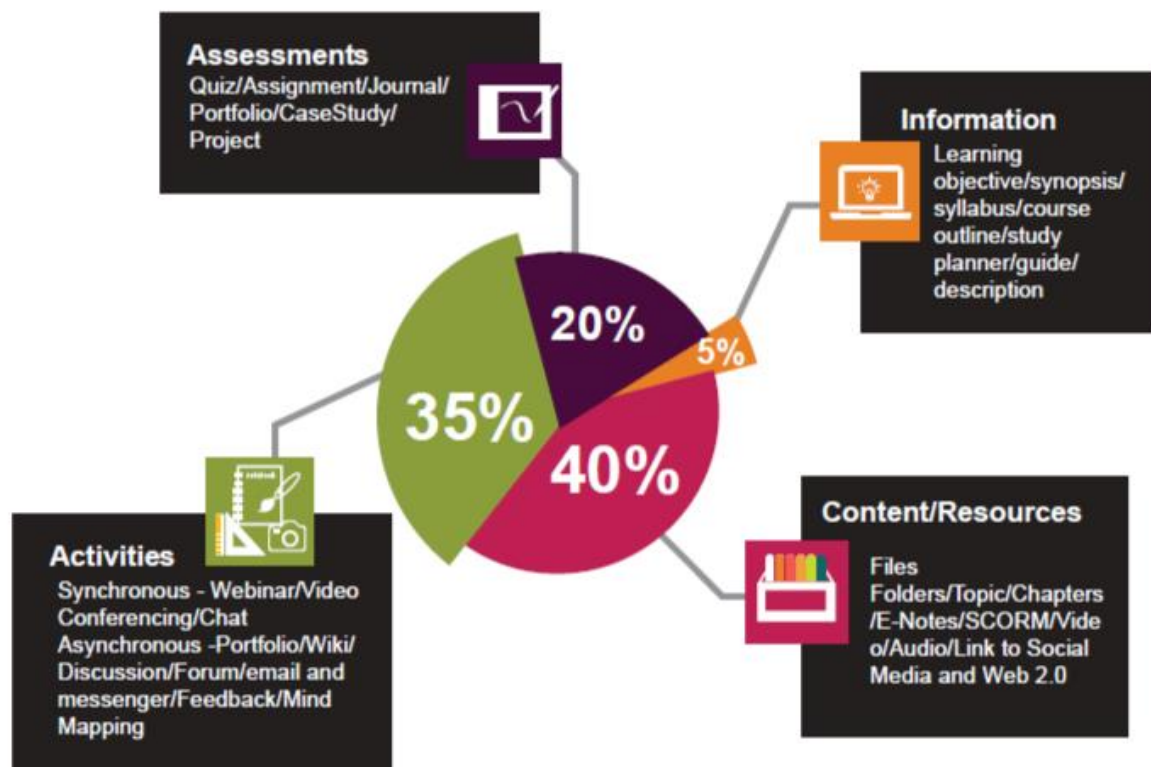
1. Assurance that the diploma programs offered meet the high standards set by ETC
2. Enable students to further studies at local or overseas institution.
3. Institution will be given opportunities to offer technology and TVET programmes.
4. Graduates with diploma in engineering or technology engineering will be accepted to be Engineering Technician / Works Inspector - registered with BEM



## BLENDED LEARNING (PEMBELAJARAN TERADUN)

This teaching and learning method integrates a mixture of online mode and onsite mode of learning with a weightage of 30% - 80% course and activity content which is managed online. These teaching approach either facilitates or replace the face to face contact learning.

### Percentage of Minimum Mode for Blended Learning



## PORTAL CIDOS E-LEARNING POLITEKNIK MALAYSIA

CIDOS (E-Learning) is an interactive online educational system which provides facilities for lecturers and students to create quality materials for online learning.

The CIDOS system can be browsed through LMS 3.5: <http://cidos.edu.my>





# Diploma in Mechanical Engineering

## PROGRAMME OVERVIEW

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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.

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 & Electronic Technology.

## PROGRAMME

# AIM

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:

- PEO1:** Equipped with industry-relevant knowledge and skills in mechanical engineering field
- PEO2:** Engaging on lifelong and continuous learning to enhance knowledge and skills
- PEO3:** Instilled with entrepreneurial skills and mind set in the real working environment
- PEO4:** Established strong linkage with society and players in the industry

## **PROGRAMME LEARNING OUTCOMES (PLO)**

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

**PLO  
1**

### **Knowledge**

Apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialization as specified in DK1 to DK4 respectively to wide practical procedures and practices

**PLO  
2**

### **Problem Analysis**

Identify and analyze well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)

**PLO  
3**

### **Design / Development of Solution**

Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (DK5)

**PLO  
4**

### **Investigation**

Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements

**PLO  
5**

### **Modern Tool Usage**

Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)

**PLO  
6**

### **The Engineer and Society**

Demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well-defined engineering problems (DK7)

**PLO  
7**

### **Environment and Sustainability**

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)

**Ethics**

Understand and commit to professional ethics and responsibilities and norms of technician practice

**PLO 8**

**Individual and Team Work**

Function effectively as an individual, and as a member in diverse technical teams

**PLO 9**

**Communication**

Communicate effectively on well-defined engineering activities with the engineering community and with society at large, by being able to comprehend the work of others, document their own work, and give and receive clear instructions

**PLO 10**

**Project Management and Finance**

Demonstrate knowledge and understanding of engineering management principles and apply these to one’s own work, as a member or leader in a technical team and to manage projects in multidisciplinary environments

**PLO 11**

**Lifelong Learning**

Recognize the need for, and have the ability to engage in independent updating in the context of specialized technical knowledge

**PLO 12**

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
DK 6	Codified practical engineering knowledge in recognized practice area.
DK 7	Knowledge of issues and approaches in engineering technician practice: ethics, financial, cultural, environmental and sustainability impacts

## PROGRAMME STRUCTURE FOR DIPLOMA IN MECHANICAL ENGINEERING

CLASSIFICATION	COURSE CODE	COURSE	CONTACT HOURS				PROGRAMME LEARNING OUTCOME ( PLO )												PRE-REQUISITE / CO-REQUISITE		
			L	P	T	O	CREDIT VALUES	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11		PLO12	
								CLS1	CLS2	CLS2	CLS2	CLS3a/3c	CLS3b	CLS5	CLS5	CLS3d	CLS3b	CLS4		CLS4	
<b>SEMESTER 1</b>																					
Compulsory	DUE10012	Communicative English 1	1	0	2	0	2														
	MPU24XX1	Sukan	0	2	0	0	1														
	MPU24XX1	Unit Beruniform 1																			
Common Core	DUW10022	Occupational, Safety and Health for Engineering	2	0	0	0	2	v									v				
	DBS10012	Engineering Science	2	1	0	0	2	v				v									
	DBM10013	Engineering Mathematics 1	2	0	2	0	3	v				v						v			
Discipline Core	DJJ10013	Engineering Drawing	1	3	0	0	3	v				v									
	DJJ10022	Mechanical Workshop Practice 1	0	4	0	0	2					v		v							
	DJJ10033	Workshop Technology	3	0	0	0	3	v													v
<b>TOTAL</b>			<b>25</b>				<b>18</b>														
<b>SEMESTER 2</b>																					
Compulsory	MPU23052	Sains, Teknologi dan Kejuruteraan Dalam Islam	1	0	2	0	2														
	MPU23042	Nilai Masyarakat Malaysia**																			
	MPU24XX1	Kelab/Persatuan	0	2	0	0	1														
	MPU24XX1	Unit Beruniform 2																			
Common Core	DBM20023	Engineering Mathematics 2	2	0	2	0	3	v				v									DBM10013
Discipline Core	DJJ20042	Mechanical Workshop Practice 2	0	4	0	0	2					v									DJJ10022
	DJJ20053	Electrical Technology	2	2	0	0	3	v				v									
	DJJ20063	Thermodynamics	2	2	0	0	3	v				v									
	DJJ20073	Fluid Mechanics	2	2	0	0	3	v				v									
<b>TOTAL</b>			<b>25</b>				<b>17</b>														
<b>SEMESTER 3</b>																					
Compulsory	DUE30022	Communicative English 2	1	0	2	0	2														
Common Core	DBM30033	Engineering Mathematics 3	2	0	2	0	3	v				v									DBM20023
	DJJ30082	Mechanical Workshop Practice 3	0	4	0	0	2					v		v							DJJ20042
Discipline Core	DJJ30093	Engineering Mechanics	2	2	0	0	3	v	v			v									
	DJJ30103	Strength of Materials	2	2	0	0	3	v	v			v									
	DJJ30113	Material Science and Engineering	2	2	0	0	3	v				v									
	DJJ30122	Computer Aided Design	1	2	0	0	2	v				v									DJJ10013
<b>TOTAL</b>			<b>26</b>				<b>18</b>														



CLASSIFICATION	COURSE CODE	COURSE	CONTACT HOURS				PROGRAMME LEARNING OUTCOME ( PLO )												PRE-REQUISITE / CO-REQUISITE	
			L	P	T	O	CREDIT VALUES	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11		PLO12
								Knowledge	Problem Analysis	Design and development of Solution	Investigation	Modern Tool Usage	The Engineer and Society	Environment and Sustainability	Ethics	Individual and Teamwork	Communication	Project management and Finance		Life Long Learning
CLS1	CLS2	CLS2	CLS2	CLS 3a/3c	CLS 3b	CLS5	CLS5	CLS 3d	CLS 3b	CLS4	CLS4									
<b>SEMESTER 4</b>																				
Compulsory	DJJ40132	Engineering and Society	2	0	0	0	2													
Dicipline Core	DJJ40142	Mechanical Workshop Practice 4	0	4	0	0	2													DJJ30082
	DJJ40153	Pneumatic and Hydraulics	2	2	0	0	3													
	DJJ40163	Mechanics of Machines	2	2	0	0	3													DJJ30093
	DJJ40173	Engineering Design	2	2	0	0	3													DJJ30122
	DJJ40182	Project 1	2	0	0	0	2													
Elective		Elective***																		
<b>TOTAL</b>			<b>20</b>				<b>15</b>													
<b>SEMESTER 5</b>																				
Compulsory	MPU21032	Penghayatan Etika dan Peradaban	1	0	2	0	2													
	DUE50032	Communicative English 3	1	0	2	0	2													DUE30012
	MPU22012	Entrepreneurship	1	0	2	0	2													
	DJJ50193	Project 2	0	4	0	0	3													DJJ40182
Dicipline Core	DJJ50203	Troubleshooting and Maintenance for Mechanical Components	2	2	0	0	3													
	DJJ50212	Maintenance Engineering and Management	2	0	0	0	2													
Elective		Elective***																		
<b>TOTAL</b>			<b>19</b>				<b>14</b>													
<b>SEMESTER 6</b>																				
Industrial Training	DUT600610	Engineering Industrial Training	0	0	0	0	10													
<b>TOTAL</b>			<b>0</b>				<b>10</b>													
<b>TOTAL CREDIT VALUES</b>							<b>94</b>													

<b>ELECTIVES COURSES</b>																					
1	DJJ42022	Industrial Management	2	0	0	0	2														
2	DJJ42032	Instrumentation and Control	2	0	0	0															
3	DJJ52012	Engineering Plant Technology	2	0	0	0															
4	DJJ52052	Railway Track System	2	0	0	0															
5	DJM20032	C Programming	1	2	0	0															
6	DJM40082	Programmable Logic Control	1	2	0	0															
7	DJM40092	Control system	2	1	0	0															
8	DJF51082	Quality Control	2	0	0	0															

<b>FREE ELECTIVES*</b>																				
1	DUD10012	Design Thinking	1	0	0	1	2													

Course Classification	Total Credit	%
i.(a) Compulsory	14	14.9
(b) Compulsory (Bahasa Kebangsaan A) <sup>b</sup>	2	0
ii. Common Core	15	16
iii. Discipline Core	53	56.4
<b>Total Credit</b>	<b>82</b>	<b>87</b>
v. (a) Electives	2	2.1
(b) Free Electives <sup>a</sup>	2	0
v. Industrial Training	10	10.6
<b>Grand Total Credit</b>	<b>94</b>	<b>100</b>

	Total Hours	%
i. Lecture	49	41.9
ii. Practical	50	42.7
iii. Tutorial	18	15.4
<b>Total Contact Hours</b>	<b>117</b>	<b>100</b>

Legend:

L : Lecture, P : Practical / Lab, T : Tutorial, O : Others

(The numbers indicated under L, P, T & O represent the contact hours per week, to be used as a guide for time table preparation).

\*For Muslim Students

\*\*For Non Muslim Students

\*\*\*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.
- <sup>a</sup>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.
- <sup>b</sup>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)
- Clusters:
  - CLS1 : Knowledge & Understanding
  - CLS2 : Cognitive Skills
  - CLS3a : Practical Skills
  - CLS3b : Interpersonal & Communication Skills
  - CLS3c : Digital & Numeracy Skills
  - CLS3d : Leadership, Autonomy & Responsibility
  - CLS4 : Personal & Entrepreneurial Skills
  - CLS5 : Ethics & Professionalism

## **POLYTECHNIC'S GENERAL COURSES**

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General studies department was established with the objective to help Politeknik Nilai introduce students to the importance and value of spiritual, human and universal human values of purity in a dignified living as well as emphasizing the importance of using the English oral skills (speaking and communication) and writing skills. This will enable students functioning effectively in the context of his future. In daily life every human being cannot prevent himself from human contact and interaction with each other. Thus, human relations through inter-personal aspects and intra-personal skills are an art which can assess the humanitarian in a person. Behaviour and actions cannot be taught through a technical education and professional skill only without spiritual and human values. Advanced nations in science and technology, but disregards the aspect of human behaviour will be considered as no glory and goodness of these people even seen as a nation who are not civilized and dignified. Therefore, the general education department serves as a complement to all departments in Politeknik Nilai in helping the students fill in the spiritual and human values.

The courses offered in this department are general courses which include modules in Islamic Education, Moral Education, Islamic Civilization, Communicative English, Co-Curricular, Soft Skills and Occupational Safety and Health (OSH).

## COURSE SYNOPSIS

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	DBM10013 ENGINEERING MATHEMATICS 1	<b>ENGINEERING MATHEMATICS 1</b> 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 3x3 matrix.	<b>CLO1:</b> Use mathematical statement to describe relationship between various physical phenomena. (C3, CLS1) <b>CLO2:</b> Show mathematical solutions using the appropriate techniques in mathematics. (C3, CLS3c) <b>CLO3:</b> Use mathematical expression in describing real engineering problems precisely, concisely and logically. (A3, CLS3b)
1	DBS10012 ENGINEERING SCIENCE	<b>ENGINEERING SCIENCE</b> 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.	<b>CLO1:</b> Use basic physics concept to solve engineering physics problems (C3, CLS1) <b>CLO2:</b> Apply knowledge of fundamental physics in activities to mastery physics concept (C3, CLS1) <b>CLO3:</b> Perform appropriate activities related to physics concept (P3, CLS3a)
1	DJJ 10013 ENGINEERING DRAWING	<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.	<b>CLO1:</b> Apply the fundamentals of technical drawing and features of CAD software in producing engineering drawing. (C3, PLO1) <b>CLO2:</b> Construct the technical drawing and 2D CAD drawing according to the engineering drawing standards. (P3, PLO5) <b>CLO3:</b> Propose a project report with following engineering norms and practices in engineering drawing. (A3, PLO8)

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	DJJ 10022 MECHANICAL WORKSHOP PRACTICE 1	<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.	<b>CLO1:</b> Measure finished product using appropriate measurement instruments (P3, PLO5) <b>CLO2:</b> Perform fitting, welding and machining works according to Standard Operational Procedure (SOP). (P4, PLO5) <b>CLO3:</b> Demonstrate an understanding of professional ethics, responsibilities and norms of engineering practices according to the workshop safety regulation. (A3, PLO6)
1	DJJ 10033 WORKSHOP TECHNOLOGY	<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), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW).	<b>CLO1:</b> Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology (C3, PLO1) <b>CLO2:</b> Apply standard practice in operating mechanical tools and component (C3, PLO8) <b>CLO3:</b> Demonstrate continuous learning and information management skills to complete assigned task (A3, PLO12)
1	DUE10012 COMMUNICATIVE ENGLISH 1	<b>COMMUNICATIVE ENGLISH 1</b> 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.	<b>CLO1:</b> Participate in a discussion using effective communication and social skills to reach an amicable conclusion by accommodating differing views and opinions (A3, CLS 3b) <b>CLO2:</b> Demonstrate awareness of values and opinions embedded in texts on current issues (A3, CLS 3b) <b>CLO3:</b> Present a topic of interest that carries identifiable values coherently using effective verbal and non-verbal communication skills ( A2 , CLS 4 )



SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	DUW10022 OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING	<p><b>OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING</b></p> <p>course is designed to impart understanding of the self-regulatory concepts and provisions under the Occupational Safety &amp; 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.</p>	<p><b>CLO1:</b> Explain briefly Occupational Safety and Health (OSH) procedures, regulation and its compliance in Malaysia. (C2, PLO1)</p> <p><b>CLO2:</b> Initiates incident hazards, risks and safe work practices in order to maintain health and safe work environment. (A3, PLO 8)</p> <p><b>CLO3:</b> Forms communication skills in a team to respond for an accident action at workplace. (A3, PLO 10)</p>
1	MPU24011 SUKAN	<p><b>SUKAN</b></p> <p>adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif</p>	<p><b>CLO1:</b> Mempamerkan kemahiran khusus bagi kursus berkaitan (P2, CLS 4)</p> <p><b>CLO2:</b> Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif (A3, CLS 3d)</p>

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
2	DBM20023 ENGINEERING MATHEMATICS 2	<p><b>ENGINEERING MATHEMATICS 2</b> 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.</p>	<p><b>CLO1:</b> Use algebra and calculus knowledge to describe relationship between various physical phenomena. (C3, CLS 1)  <b>CLO2:</b> Solve the mathematical problems by using appropriate and relevant fundamental calculus techniques. (C3, CLS 3c)  <b>CLO3:</b> Use mathematical language to express mathematical ideas and arguments precisely, concisely and logically in calculus. (A3, CLS 3b)</p>
2	DJJ 20042 MECHANICAL WORKSHOP PRACTICE 2	<p><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.</p>	<p><b>CLO1:</b> Follow the appropriate procedure for welding, foundry and lathe machining. (P3, PLO5)  <b>CLO2:</b> Perform welding, foundry and lathe machining according to Standard Operating Procedure (SOP). (P4, PLO5)  <b>CLO3:</b> Demonstrate the ability to work as individual and as a team to complete assigned tasks. (A3, PLO9)</p>

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
2	DJJ 20053 ELECTRICAL TECHNOLOGY	<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.	<b>CLO1:</b> Explain the principles and fundamental of electrical circuits, electromagnetism, transformers and electrical machine (C2, PLO1) <b>CLO2:</b> Solve the problem related to electrical circuits, electromagnetism, transformers and electrical machine (C3, PLO1) <b>CLO3:</b> Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)
2	DJJ 20063 THERMODYNAMICS	<b>THERMODYNAMICS</b> provides knowledge of theory, concept and application of principles to solve problems related to thermodynamics. It emphasizes on concept of on-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.	<b>CLO1:</b> Explain fundamentals concept and properties of pure substances in thermodynamics (C2, PLO1) <b>CLO2:</b> Apply Laws of thermodynamics and it processes (C3, PLO1) <b>CLO3:</b> Organize appropriately experiments according to the Standard Operating Procedures (P4, PLO5)
2	DJJ 20073 FLUID MECHANICS	<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.	<b>CLO1:</b> Explain the fundamentals of fluid (C2, PLO1) <b>CLO2:</b> Solve problems related to fluid properties, fluid statics and fluid dynamics (C3, PLO1) <b>CLO3:</b> Organize appropriate experiments in groups according to the standard operating procedures (P4, PLO5)

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
2	MPU23042 NILAI MASYARAKAT MALAYSIA	<b>NILAI MASYARAKAT MALAYSIA</b> 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.	<b>CLO1:</b> Membincangkan sejarah dan nilai dalam pembentukan masyarakat di Malaysia (A2, CLS 4) <b>CLO2:</b> Menerangkan etika dan profesionalisme terhadap konsep perpaduan bagi meningkatkan semangat patriotism masyarakat Malaysia (A3, CLS 5) <b>CLO3:</b> Menghubunkait minda ingin tahu dengan cabaran-cabaran dalam membentuk masyarakat Malaysia (A4 , CLS 4)
2	MPU23052 SAINS, TEKNOLOGI & KEJURUTERAAN DALAM ISLAM	<b>SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM</b> memberi pengetahuan tentang konsep Islam sebagai al-Din dan seterusnya membincangkan konsep sains, teknologi dan kejuruteraan dalam Islam serta impaknya, pencapaiannyadalam tamadun Islam, prinsip serta peranan syariah dan etika Islam, peranan kaedah fiqh serta aplikasinya	<b>CLO1:</b> Melaksanakan dengan yakin amalan Islam dalam kehidupan seharian (A2, CLS 4) <b>CLO2:</b> Menerangkan etika dan profesionalisme berkaitan sains teknologi dan kejuruteraan dalam Islam (A3, CLS 5) <b>CLO3 :</b> Menghubunkait minda ingin tahu dengan prinsip syariah, etika dan kaedah fiqh dalam bidang sains, teknologi dan kejuruteraan menurut perspektif Islam (A4, CLS 4)
2	MPU24021 KELAB	<b>KELAB</b> memfokuskan kepada penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif	<b>CLO1:</b> Mempamerkan kemahiran khusus bagi kursus berkaitan (P2, CLS 4) <b>CLO2:</b> Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif ( A3 , CLS 3d )

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DBM30033 ENGINEERING MATHEMATICS 3	<p><b>ENGINEERING MATHEMATICS 3</b> 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.</p>	<p><b>CLO1:</b> Demonstrate an understanding of the common body of knowledge in mathematics. (C3, CLS 1)  <b>CLO2:</b> Demonstrate problems solving skills in engineering problems. (C3, CLS 3c)  <b>CLO3:</b> Use mathematical expression in describing real engineering problems precisely, concisely and logically.( A3 , CLS 3b )</p>
3	JJ 30082 MECHANICAL WORKSHOP PRACTICE 3	<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>	<p><b>CLO1:</b> follow welding tasks according to workshop Standard Operating Procedure (SOP). (P3, PLO5)  <b>CLO2:</b> perform machining tasks according to workshop Standard Operating Procedure (SOP). (P4, PLO5)  <b>CLO3:</b> 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)</p>



SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DJJ 30093 ENGINEERING MECHANICS	<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.	<b>CLO1:</b> solve problems related to static and dynamics based on the concepts and principle of engineering mechanics (C3, PLO 1) <b>CLO2:</b> analyze engineering related problems based on fundamentals of static and dynamics (C4, PLO 2) <b>CLO3:</b> organize appropriately experiment in groups according to Standard Operation Procedures (P4, PLO 5)
3	DJJ 30103 STRENGTH OF MATERIALS	<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.	<b>CLO1:</b> apply the concepts of strength of materials to solve related problems. (C3, PLO1) <b>CLO2:</b> analyze problems correctly related to strength of materials (C4, PLO2) <b>CLO3:</b> organize appropriately experiment in groups according to Standard Operation Procedures (SOP). (P4, PLO5)
3	DJJ 30113 MATERIAL SCIENCE AND ENGINEERING	<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 introduces to student to cater the fabrications of devices, sensors for Industry 4.0 technology.	<b>CLO1:</b> Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment. (C3, PLO1) <b>CLO2:</b> Performed appropriate material testing according to the Standard Operating Procedures. (P4, PLO5) <b>CLO3:</b> Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DJJ 30122 COMPUTER AIDED DESIGN	<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><b>CLO1:</b> Apply CAD commands in order to produce engineering drawing. (C3, PLO1)</p> <p><b>CLO2:</b> Construct 3D drawing of Mechanical Components according Drawing Standards.(P4, PLO5)</p> <p><b>CLO3:</b> Demonstrate a presentation with following technical standard Communication.(A3, PLO10)</p>
3	DUE30022 COMMUNICATIVE ENGLISH 2	<b>COMMUNICATIVE ENGLISH 2</b> emphasizes 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><b>CLO1:</b> Describe a product or service effectively by highlighting its features and characteristics that appeal to a specific audience (A3, CLS 3b)</p> <p><b>CLO2:</b> Describe processes, procedures and instructions clearly by highlighting information of concern (A3, CLS 4)</p> <p><b>CLO3:</b> Demonstrate effective communication and social skills in handling enquiries and complaints amicably and professionally (A3, CLS 3b)</p>

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
4	DJJ 40132 ENGINEERING AND SOCIETY	<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	<b>CLO1:</b> Determine the important of work ethics, bylaws and professionalism in engineering profession. (C4, PLO8) <b>CLO2:</b> Determine the needs for sustainable and green engineering towards providing the solutions in engineering field. (C4, PLO7) <b>CLO3:</b> Implement the roles of engineering profession towards the developing of society and its challenges in globalization (C3, PLO6)
4	DJJ 40142 MECHANICAL WORKSHOP PRACTICE 4	<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.	<b>CLO1:</b> Perform high precision machining processes for the surface or cylindrical grinding machine. (P4, PLO5) <b>CLO2:</b> Construct programs for EDM and CNC machining process using ISO codes or any related machining software. (P5, PLO3) <b>CLO3:</b> 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)

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
4	DJJ 40153 PNEUMATIC & HYDRAULICS	<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.	<b>CLO1:</b> Analyze the basic concept and function of pneumatics and hydraulics system. (C3, PLO1) <b>CLO2:</b> Design pneumatic, electro-pneumatic and hydraulic circuit according to assigned tasks. (C5, PLO3) <b>CLO3:</b> Perform experiment on pneumatic, electro-pneumatic and hydraulic circuit during practical session. (P4, PLO5)
4	DJJ 40163 MECHANICS OF MACHINES	<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.	<b>CLO1:</b> Apply the fundamentals of mechanics of machines to solve related problems in the theoretical and graphical aspects. (C3, PLO1) <b>CLO2:</b> Analyze problems related to the mechanics of machines in relation to the theoretical aspects. (C4, PLO2) <b>CLO3:</b> Perform experiments in groups according to the Standard Operating Procedures. (P4, PLO5)

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
4	DJJ40173 ENGINEERING DESIGN	<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.	<b>CLO1:</b> Apply the concept of design process, stress analysis and mechanical joint in an engineering product. (C3, PO1) <b>CLO2:</b> Implement engineering design process on project design taking into design consideration, ergonomic factors and material selection. (C3, PO3) <b>CLO3:</b> Builds a part or product in 3D modelling based on project design. (P4, PO5) <b>CLO4:</b> Adopt design regarding to the environment and sustainability. (A3, PO7)
4	DJJ 40182 PROJECT 1	<b>PROJECT 1</b> provides students with solid foundation on knowledge and skills in formulating project proposal preparation, writing and presentation	<b>CLO1:</b> Identify the engineering problems to be solved (C4, PLO2) <b>CLO2:</b> Analyze methods to solve problems (C4, PLO7) <b>CLO3:</b> Propose a solution to problems (A3, PLO11)



SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
5	DJJ 50193 PROJECT 2	<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>	<p><b>CLO1:</b> Demonstrate appropriate and creative solution in solving project problems (P5, PLO3)  <b>CLO2:</b> Perform project plan to achieve objectives with valid and reliable results (P4, PLO4)  <b>CLO3:</b> Explain the project work and defend project outcomes effectively with good communication skills (A4, PLO10)  <b>CLO4:</b> Organize project activities and outcomes in report accordance to the specified standard format that applies engineering management principles (P4, PLO11)</p>
5	DJJ 50203 TROUBLESHOOTING AND MAINTENANCE FOR MECHANICAL COMPONENTS	<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 transmission and pump.</p>	<p><b>CLO1:</b> Analyze the concept of mechanical components to solve related problems. (C3, PLO1)  <b>CLO2:</b> Assemble selected mechanical components based on service manual maintenance in groups. (P4, PLO4)  <b>CLO3:</b> Demonstrate understanding of engineering norm and practices in mechanical components and maintenance during practical work sessions. (C4, PLO5)</p>

SEMESTER	CODE & COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
5	DJJ 50212 MAINTENANCE ENGINEERING AND MANAGEMENT	<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).	<b>CLO1:</b> Apply the concepts of maintenance organization and strategies to solve related problems. (C3, PLO1) <b>CLO2:</b> Analyze the principles of maintenance strategies and elaborate on the significance of a system approach to maintenance. (C4, PLO7) <b>CLO3:</b> Organize project management and finance by group in actual workplace related to maintenance management. (A3, PLO11)
5	DUE50032 COMMUNICATIVE ENGLISH 3	<b>COMMUNICATIVE ENGLISH 3</b> aims to develop the necessary skills in students to analyses 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.	<b>CLO1:</b> Present gathered data in graphs and charts effectively using appropriate language forms and functions (A2, CLS 3b) <b>CLO2:</b> Prepare a high impact resume and a cover letter, highlighting competencies and strengths that meet employer's expectations (A4, CLS 4) <b>CLO3:</b> Demonstrate effective communication and social skills in handling job interviews confidently ( A3 , CLS 3b )
5	MPU22012 ENTREPRENEURSHIP	<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.	<b>CLO1:</b> Propose the value proposition of entrepreneurial idea using Business Model Canvas (A3, CLS 3b) <b>CLO2:</b> Develop a viable business plan by organizing business objectives according to priorities (A4, CLS 4) <b>CLO3:</b> Organize the online presence business in social media marketing platform ( A3 , CLS 4 )

## JOB PROSPECTS

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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:

- a) Assistant Engineer
- b) Technical Assistant
- c) Assistant Service Manager
- d) Service Advisor
- e) Supervisor
- f) Technician
- g) Technical Instructor or Lecturer
- h) Technical Sales Executive / Engineer
- i) Draughter / Designer
- j) Entrepreneur

## EXAMINATION UNIT

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### INTRODUCTION

Every Polytechnic of the Ministry of Education Malaysia is responsible for providing guidance on learning, assessment, monitoring and examination. The awarding of Certificates and Diplomas to the respective students is subject to the approval and confirmation of the Examination Board and the Awarding of Polytechnic Certificates / Diplomas after the students pass all the examinations and meet all the course requirements. For a polytechnic, the Examination Unit is the unit responsible for planning, managing and implementing all activities related to student assessment based on the assessment guidelines and rules that have been set.

The Examination Unit is headed by an Examination Officer appointed by the Polytechnic Management Division, Technical Education Department and assisted by several coordinators appointed from each Academic Department. All matters related to student assessment and examination are coordinated by this unit.

### GRADE POINT SYSTEM

Polytechnic adopts an assessment system that is based on a quantitative measurement of students' achievement in a particular program known as Sistem Nilai Mata (SNM) or Grade Point System. Based on SNM, students' academic achievements in a particular programme is measured using two (2) grading systems;

- i. Purata Nilai Mata (PNM) or Grade Point Average (GPA)

$$\text{GPA} = \frac{\text{Total Grade Point Obtained In Current Semester}}{\text{Total Credit Taken In Current Semester}}$$

- ii. Himpunan Purata Nilai Mata (HPNM) or Cumulative Grade Point Average (CGPA).

$$\text{CGPA} = \frac{\text{Current Overall Total Grade Points Earned}}{\text{Current Overall Total Number Of Credit Taken}}$$

## GRADING SCHEME

Marks obtained by students in a particular course will be given a grade and a respective grade point according to the grading scheme in Table 1 below:

Table 1: Grading Scheme

MARKS	GRADE POINT	GRADE	NOTES/STATUS
90 - 100	4.00	A+	EXCEPTIONAL
80 - 89	4.00	A	EXCELLENT
75 - 79	3.67	A-	DISTINCTION
70 - 74	3.33	B+	DISTINCTION
65 - 69	3.00	B	DISTINCTION
60 - 64	2.67	B-	PASS
55 - 59	2.33	C+	PASS
50 - 54	2.00	C	PASS
47 - 49	1.67	C-	PASS
44 - 46	1.33	D+	PASS
40 - 43	1.00	D	PASS
30 - 39	0.67	E	FAIL
20 - 29	0.33	E-	FAIL
0 - 19	0.00	F	FAIL

Note: \*Grade status shall not apply to certain programs

## WEIGHTAGE OF COURSEWORK ASSESSMENT AND FINAL EXAMINATION

- Assessment of each course is carried out continuously within the prescribed study period for a particular semester based on the procedures specified in the current curriculum documents.
- Courses without final examination will be fully (100%) assessed by coursework. Final assessments aggregate is assessed based on coursework (50%) and final examination (50%) as specified in the current curriculum document.



## GENERAL RULES OF ASSESSMENT

Students' academic performance will be evaluated if they fulfil the following requirements:

- Has registered to pursue a programme of study
- Has enrolled in the related courses
- Has maintain a minimum of 80% percentage attendance in learning activities associated with the course.

## TOTAL CREDIT DETERMINATION

- The total number of credit that a student is allowed to enroll in each semester is between twelve (12) to twenty (20), or as specified in the respective Curriculum Document and Programme Structures.
- Student may enroll in less than twelve (12) credits or more than twenty (20) credits with the Academic advisor's endorsement and Head of academic department's approval.

## COURSE ENROLMENT

- Course enrolment is done at the beginning of each semester within (7) seven days from the official date of the beginning of the academic semester.
- Students must meet the total credits allowed by adding other courses that are on offer in the current semester and repeat modules (carry) from the previous semester.
- Students need to get advice from the Academic Advisor as well as the confirmation of the respective Head of Department before registering.
- Student who has enrolled in a course has a responsibility to follow all learning activities and comply with all the requirements of the course.
- Student must fulfil the minimum attendance percentage as stipulated in order to be evaluated for all learning activities associated with the registered course.
- Failure of students to attend any learning activity satisfactorily for a module may result in students not being eligible to sit for the examination for that module.

## **CREDIT TRANSFER AND COURSE EXEMPTION (CTCE)**

Students can apply for credit transfer and course exemption within three (3) weeks from the start of lecture for the first semester if they meet the requirement stipulated in the Polytechnic Educational Programme Credit Transfer and Course Exemption Guideline.

## **ADDING AND DROPPING A COURSE**

- Students who have registered a module can add or drop a course (s) provided that the total number of credit allowed for the particular semester is not less or not more than the set number of credit hours.
- Students are allowed to add or drop a course from the beginning of week three (3) until week (6) of a particular academic semester. Students should first seek advice and endorsement from their Academic Advisor and/ or Head of Academic Programme and approval from the respective Head of Department.
- Students are not allowed to add or drop a course after the specified timeframe.

## **REPEATING A COURSE**

- Students who failed compulsory, core courses and discipline core courses in a particular semester should enroll and repeat failed courses from the previous semester
- Students should undertake all the learning activities associated with the repeated courses.
- Students need to register to repeat the module together with the module set for the current semester after getting advice from the Academic Advisor and the approval of the Head of Department.
- The method of repeating the module is subject to the condition of the maximum total number of credit hours that have been set for each semester.
- The method of repeating the module is also subject to whether the module is offered or not during the semester.

## IMPROVING COURSE GRADES

Students who passed with grade C-, D+ or D for any course;

- i. is allowed to improve course grade for a particular course once during his/ her duration of study.
- ii. should undertake all the learning activities associated with the course during any subsequent semester including short semester.
- iii. will have the highest grade earned used to compute the grade point obtained for the particular course.
- iv. can enrol to improve the course grade for a particular course but the total number of credit taken should not exceed twenty (20) credits. Under circumstances where this is not possible, student must obtain the approval of the Head of Department.

## PROGRESSION IN THE PROGRAMME OF STUDIES

Students who obtained good standing (KB) and conditional standing (KS) are eligible to progress to subsequent semester.

## CATEGORIES OF ASSESSMENT RESULTS

Assessment result for each semester will be categorized as below:

- i. **Full Pass (LP)**  
Final semester students who acquire a CGPA that is equal to or more than 2.00, fulfil the required conditions, are qualified to be awarded a certificate.
- ii. **Good Standing (KB)**  
Students who acquire a CGPA that is equal to or more than 2.00.
- iii. **Conditional Standing (KS)**  
Students who acquire a CGPA that is equal to or more than 1.60 but less than 2.00.

**iv. Fail and Termination of Study (GB)**

Fail and termination of study status will be given to students who:

- a) Attain a CGPA that is less than 1.60
- b) Attain a GPA that is less than 1.00
- c) Fail a particular course three (3) times, which include the special final examination or special assessment or short semester
- d) Attain KS standing three (3) times consecutively
- e) Fail Industrial training course TWICE
- f) Fail the same WBL course TWICE
- g) Have exceeded the maximum duration of study for a particular programme.

**DURATION OF STUDY**

The duration of study for a Diploma course is as follows:

- i. Minimum: 5 semesters
- ii. Maximum: 9 semesters

**CONFERMENT OF AWARD**

Students are deemed to have completed their studies and qualified to be awarded a certificate of a particular programme if they satisfy the following criteria;

- i. Pass all required courses for the particular programme;
- ii. Obtain a CGPA that is equal to or more than 2.00
- iii. Acquire the total credit assigned to the particular programme
- iv. Endorsed by the Examination Board.

**HOW TO CALCULATE PNM (GPA)**

$$\text{Credit Hour} \times \text{Value Point} = \text{Credit Point}$$

KOD	NAMA KURSUS	JAM KREDIT	GRED	NILAI MATA	MATA KREDIT
DUB1012	PENGAJIAN MALAYSIA	2.0	A	4.00	8.00
DUE1012	COMMUNICATIVE ENGLISH 1	2.0	A	4.00	8.00
DUW1012	OCCUPATIONAL SAFETY AND HEALTH	2.0	C-	1.67	3.34
DVD1013	FUNDAMENTAL OF ART AND DESIGN	3.0	B	3.00	9.00
DVG1012	FUNDAMENTAL OF DIGITAL PHOTOGRAPHY	2.0	A-	3.67	7.34
DVI1012	ART HISTORY	2.0	B+	3.33	6.66
DVV1013	FUNDAMENTAL OF DRAWING	3.0	C	2.00	6.00
DVV1022	SCRIPT WRITING	2.0	A-	3.67	7.34

KEPUTUSAN : KEDUDUKAN BAIK

PNM : 3.09

HPNM : 3.09

Jam Kredit Diambil	: 18.0
Jam Kredit Diambilkira	: 18.0
Jam Kredit Terkumpul	: 18.0
Jam Kredit Minimum	: 91.0

Sample of student results for semester 1

$$\text{PNM / CGPA} = \frac{\text{TOTAL CREDIT POINT FOR ALL SUBJECTS}}{\text{TOTAL CREDIT HOUR}}$$

$$\text{PNM /GPA} = (8.00 + 8.00 + 3.34 + 9.00 + 7.34 + 6.66 + 6.00 + 7.34)/18$$

$$\text{PNM /GPA} = 55.68 / 18$$

**PNM /GPA = 3.09**



HOW TO CALCULATE HPNM (CGPA)

KOD	NAMA KURSUS	JAM KREDIT	GREDE	NILAI MATA	MATA KREDIT
DUB1012	PENGAJIAN MALAYSIA	2.0	A	4.00	8.00
DUE1012	COMMUNICATIVE ENGLISH 1	2.0	A	4.00	8.00
DUW1012	OCCUPATIONAL SAFETY AND HEALTH	2.0	C-	1.67	3.34
DVD1013	FUNDAMENTAL OF ART AND DESIGN	3.0	B	3.00	9.00
DVG1012	FUNDAMENTAL OF DIGITAL PHOTOGRAPHY	2.0	A-	3.67	7.34
DVI1012	ART HISTORY	2.0	B+	3.33	6.66
DVV1013	FUNDAMENTAL OF DRAWING	3.0	C	2.00	6.00
DVV1022	SCRIPT WRITING	2.0	A-	3.67	7.34

KEPUTUSAN : KEDUDUKAN BAIK      PNM : 3.09      HPNM : 3.09

**Jam Kredit Diambil : 18.0**

Jam Kredit Diambilkira : 18.0

Jam Kredit Terkumpul : 18.0

Jam Kredit Minimum : 91.0

KOD	NAMA KURSUS	JAM KREDIT	GREDE	NILAI MATA	MATA KREDIT
DPB2012	ENTREPRENEURSHIP	2.0	A	4.00	8.00
DRX2001	KOKURIKULUM 2	1.0	A	4.00	4.00
DUA2042	SENI DALAM ISLAM	2.0	A-	3.67	7.34
DVD2013	STORYBOARDING	3.0	B	3.00	9.00
DVG2022	DIGITAL IMAGING	2.0	A-	3.67	7.34
DVV2013	TEKNOLOGI AUDIO VIDEO	2.0	B+	3.33	9.99
DVV2023	SINEMATOGRAFI	3.0	B+	3.33	9.99
DVV2032	PENGENALAN KEPADA PENERBITAN VIDEO	2.0	A-	3.67	7.34

KEPUTUSAN : KEDUDUKAN BAIK      PNM : 3.50      HPNM : 3.30

**Jam Kredit Diambil : 18.0**

Jam Kredit Diambilkira : 18.0

Jam Kredit Terkumpul : 36.0

Jam Kredit Minimum : 91.0

Sample of student results for semester 1

Sample of student results for semester 2

$$\text{HPNM / CGPA} = \frac{\text{TOTAL CREDIT POINT FOR ALL SEMESTER}}{\text{TOTAL CREDIT HOUR ALL SEMESTER}}$$

$$\text{HPNM / CGPA} = ((8.00 + 4.00 + 7.34 + 9.00 + 7.34 + 9.99 + 9.99 + 7.34) + 55.68) / (18 + 18)$$

$$\text{HPNM / CGPA} = (63 + 55.68) / 36$$

$$\text{HPNM / CGPA} = 118.68 / 36$$

**HPNM / CGPA = 3.30**

## EDITORIAL COMMITTEE

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**WELCOME TO  
MECHANICAL DEPARTMENT  
POLITEKNIK NILAI**

Great success always starts with small step