KEMENTERIAN PENGAJIAN TINGGI

POLITEKNIK
MALAYSIA
SULTAN ABDUL HALIM MU'ADZAM SHAH

PROGRAMME HANDBOOK
DIPLOMA
MECHANICAL ENGINEERING
(MANUFACTURING)

1.0   INTRODUCTION

Politeknik Sultan Abdul Halim Mu'adzam Shah (POLIMAS) is a comprehensive, learner-centered higher education institution that serves its local and regional learners and their communities through high-quality and flexible education and training. It is aimed to develop students' employability skills to meet the needs of a more dynamic economy, which values innovation and productivity. Programs include a global perspective that will enable graduates to make a valuable contribution to the wider society as it changes in response to regional and international competition and demand.

POLIMAS programmes include a variety of Outcome-Based Education teaching approaches, adding value to POLIMAS teaching and learning which cater to students seeking a quality polytechnic education and training.
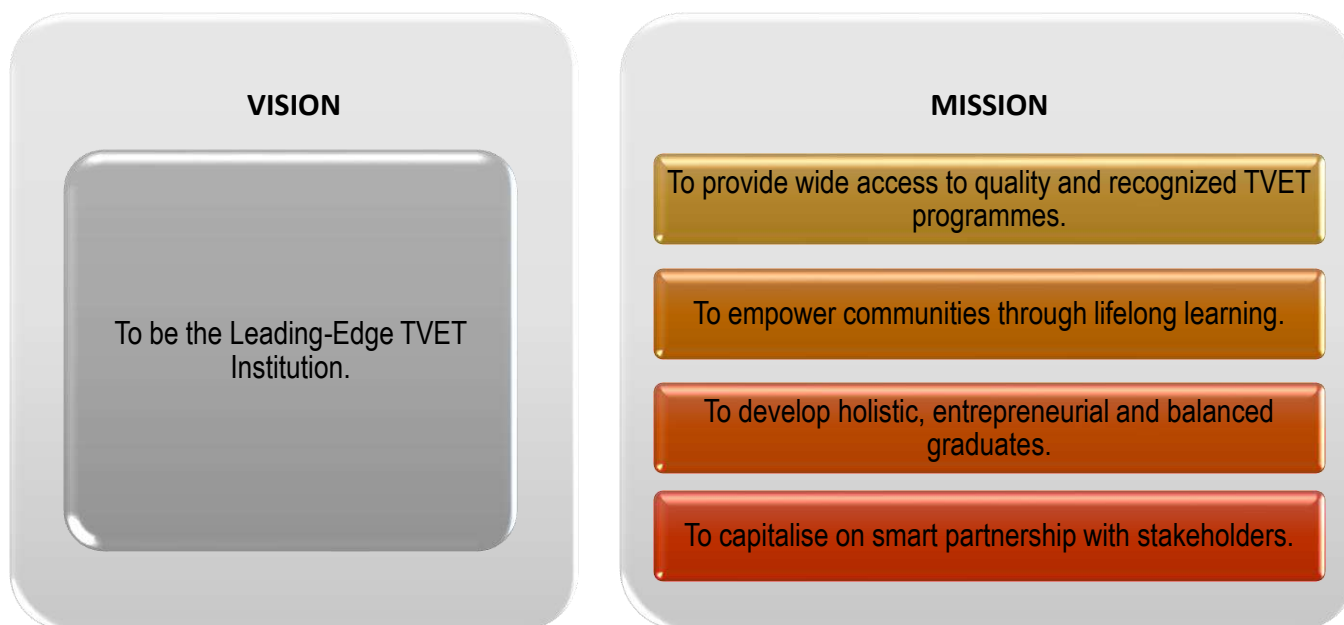
The POLIMAS Programme Handbook provides students with information on many facets of college life such as policies, procedures, and services. It is written for every student enrolled in one or more courses at POLIMAS.

This Handbook is aimed to guide students through the various procedural steps that lead to a Diploma study. It also provides graduate program descriptions, the requirements needed to obtain a graduate Diploma, and a clear outline of the procedural steps that students need to follow. Students are also provided with information on matters related to general administration such as student services and facilities, campus disciplinary measures, student organizations and other relevant matters.
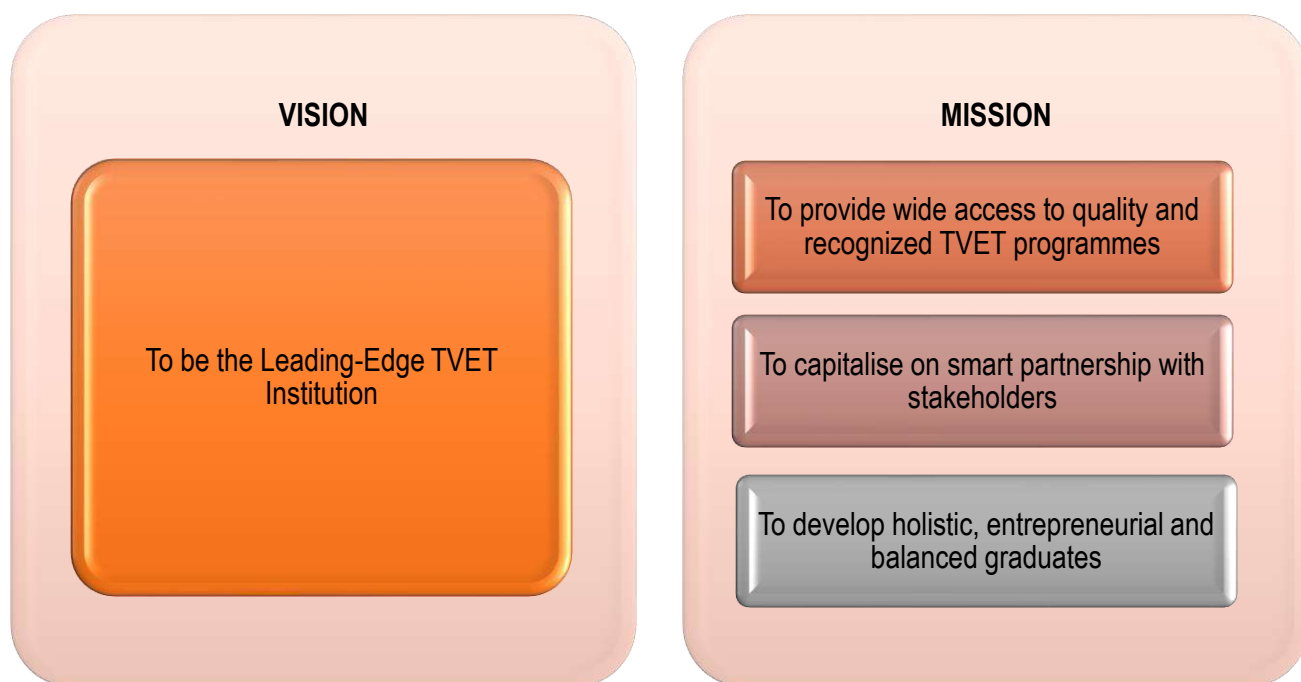
This book serves as a preliminary guide and does not purport to completely address every policy, procedure and regulation. In addition, no claim is made that this document covers all the rules and regulations in effect now at POLIMAS. Students must refer to their event POLIMAS Department programmes and services publications and other Departments and Units Policies for further information.

2.0   VISION & MISSION

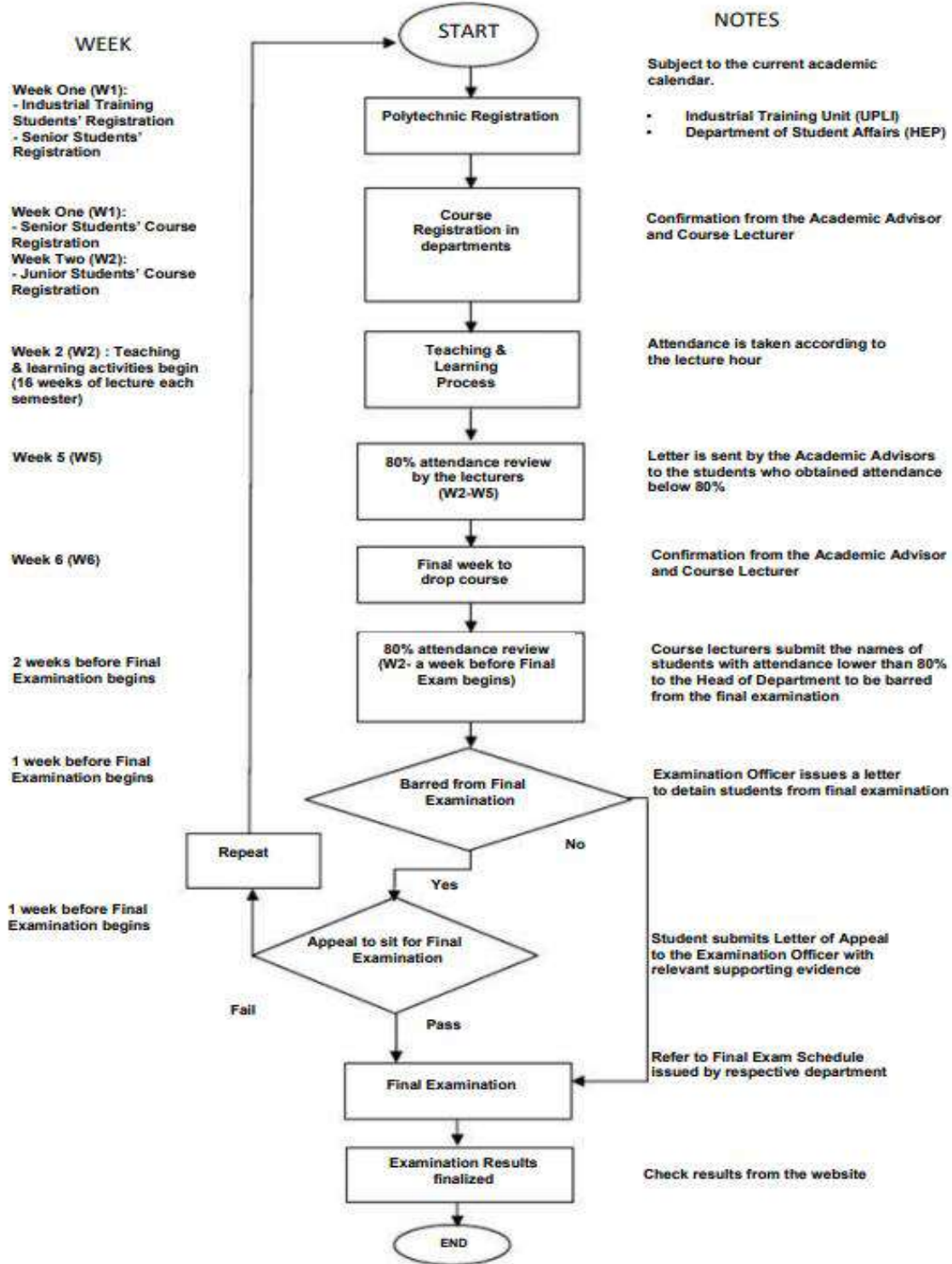### DEPARTMENT OF POLYTECHNIC EDUCATION AND COMMUNITY COLLEGE EDUCATION

VISION

To be the Leading-Edge TVET Institution.

MISSION

To provide wide access to quality and recognized TVET programmes.

To empower communities through lifelong learning.

To develop holistic, entrepreneurial and balanced graduates.

To capitalise on smart partnership with stakeholders.

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3.0 ACADEMIC FLOW CHART

ACADEMIC FLOW CHART FOR SEMESTER

WEEK

Week One (W1):
- Industrial Training Students' Registration
- Senior Students' Registration

Week One (W1):
- Senior Students' Course Registration
Week Two (W2):
- Junior Students' Course Registration

Week 2 (W2) : Teaching & learning activities begin (16 weeks of lecture each semester)

Week 5 (W5)

Week 6 (W6)

2 weeks before Final Examination begins

1 week before Final Examination begins

1 week before Final Examination begins

NOTES

Subject to the current academic calendar.

- Industrial Training Unit (UPLI)
- Department of Student Affairs (HEP)

Confirmation from the Academic Advisor and Course Lecturer

Attendance is taken according to the lecture hour

Letter is sent by the Academic Advisors to the students who obtained attendance below 80%

Confirmation from the Academic Advisor and Course Lecturer

Course lecturers submit the names of students with attendance lower than 80% to the Head of Department to be barred from the final examination

Examination Officer issues a letter to detain students from final examination

Student submits Letter of Appeal to the Examination Officer with relevant supporting evidence

Refer to Final Exam Schedule issued by respective department

Check results from the website

Flow chart boxes:
- START
- Polytechnic Registration
- Course Registration in departments
- Teaching & Learning Process
- 80% attendance review by the lecturers (W2-W5)
- Final week to drop course
- 80% attendance review (W2- a week before Final Exam begins)
- Barred from Final Examination
- Repeat
- No
- Yes
- Appeal to sit for Final Examination
- Fail
- Pass
- Final Examination
- Examination Results finalized
- END

ACADEMIC FLOW CHART FOR SHORT SEMESTER

WEEK		NOTES
	START	Subject to the current academic calendar.
Week 1 (W1)	Course Registration	Confirmation from the Academic Advisor and Course Lecturer
Week 2 (W2) : Teaching & learning activities begin (7 weeks of lecture each short semester)	Teaching & Learning Process	Attendance is taken according to the lecture hour
Week 3 (W3)	Final week to drop course	Confirmation from the Academic Advisor and Course Lecturer
Week 3 (W3) 2 weeks before Final Examination begins	80% attendance review (W2- a week before Final Exam begins)	Course lecturers submit the names of students with attendance lower than 80% to the Head of Department to be barred from the final examination
Week 6 (W6) 1 week before Final Examination begins	Barred from Final Examination — No	Examination Officer issues a letter to detain students from final examination
	Repeat — Yes	
1 week before short Semester Final Examination begins	Appeal for Final Examination	Student submits Letter of Appeal to the Examination Officer with relevant supporting evidence
	Fail / Pass	
Week 8 (W8)	Final Examination	Refer to Final Exam Schedule issued by respective department
1 week after short semester Final Examination ends.	Examination results finalized	Check results from the website
	END	

4.0   OUTCOME-BASED EDUCATION [OBE]

Outcome-based education (OBE) is an educational model for students to demonstrate their knowledge and able to perform according to the required outcomes. It is a student- centered approach that focuses on students' learning. It starts with a clear picture of what students should know, what they should be able to do, and what desirable attitudes and values needed to organize the curriculum, instruction, and assessment to ensure an ultimate learning (Spady, 1994:1). Thus, OBE involves the restructuring of curriculum and assessment that reflects achievement of high learning order and mastery learning.

OBE helps students to be aware of what they should learn, aware of what they are learning, and the control over their learning. It leads to successful student learning and encourages lecturers to be well prepared. It also provides students with appropriate, purposeful learning experiences and opportunities for students to develop originality, self-motivation and independence while acquiring useful knowledge and skills.

4.1   WHAT IS OUTCOME-BASED EDUCATION [OBE]
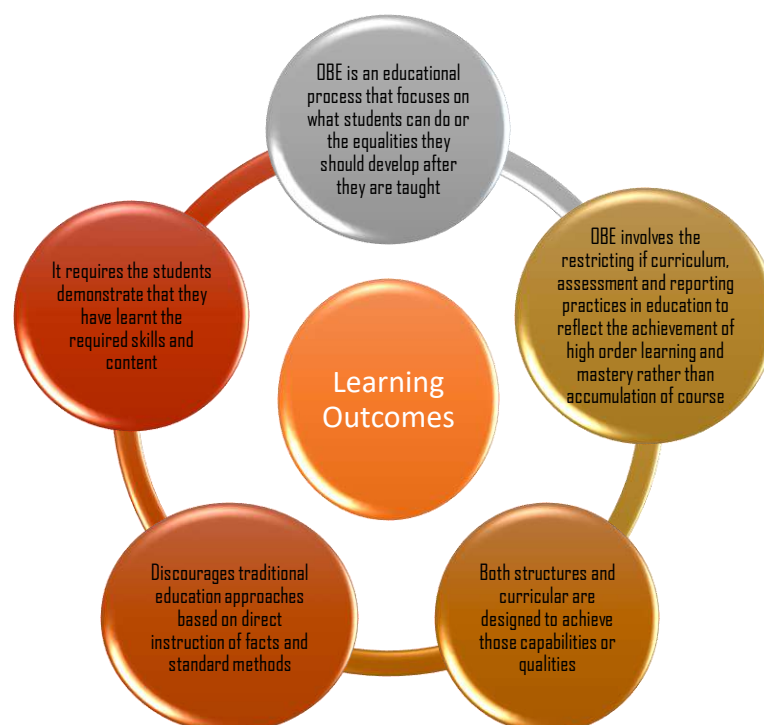
4.2   ACREDITATION PROCESS

•What students will be able to do? **Learning Outcomes**	Credits •The yardstick to measure student learning	•A statutory body to accredit programs **MQA**	**BEM-ETAC** •The body delegatd by BEM for accreditation of engineering technology degrees and engineering technician qualification
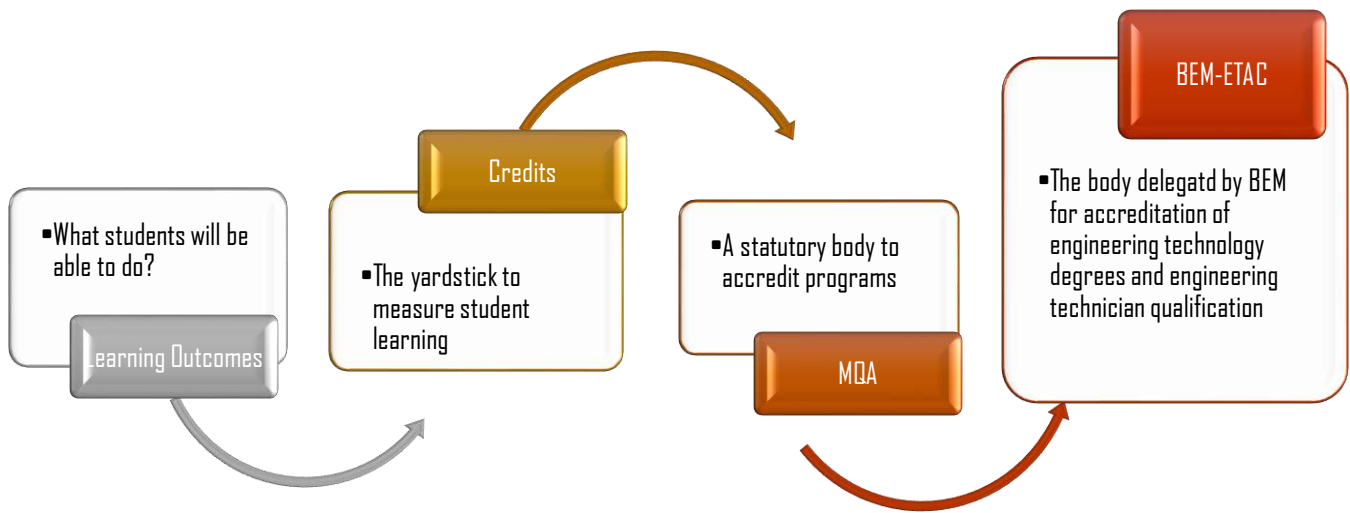
4.3   HOW DOES OBE AFFECT TEACHING-LEARNING?

Teacher -Centered

- Course Objective in The Learning
- No Mapping of Learning Outcomes
- Students Independent Learning Not Calculated
- Contact Hours Reflects Credit Value

Student- Centered

- Learning outcomes is The Learning Target
- Mapping of Learning Outcomes
- Students Independent Learning Time Calculated
- Total SLT Reflects Credit Value
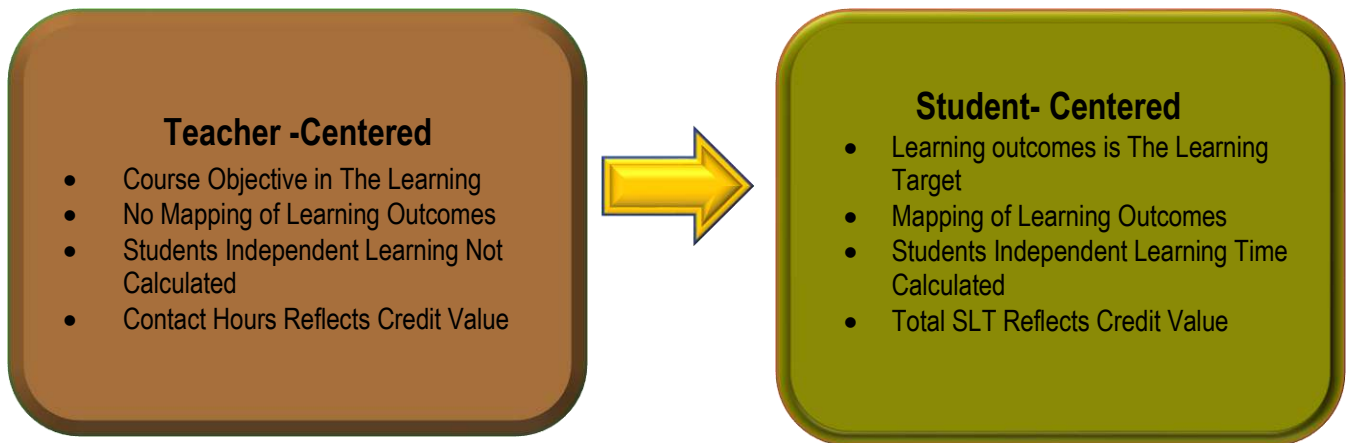
4.4 EXPECTATIONS ON STUDENTS

Be more creative, able to analyze and synthesize information

Students should be able to write proposals, complete projects, analyze case studies, give case, presentatition, show their abilities to think, question, research and make decisions based on the findings

Students are expected to be able to do more challenging tasks other than memorize and reproduce what was taught

Able to plan and organize tasks, able to work in a team as a community or in entrepreneurial service teams to propose solutions to problem and market their solution

4.5   DIFFERENT LEVELS OF OBE

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)	FEW YEARS AFTER GRADUATION
PROGRAMME LEARNING OUTCOMES (PLO)	UPON GRADUATION
COURSE LEARNING OUTCOME (CLO)	UPON COURSE COMPLETION
TOPIC OUTCOMES	UPON TOPIC COMPLETION
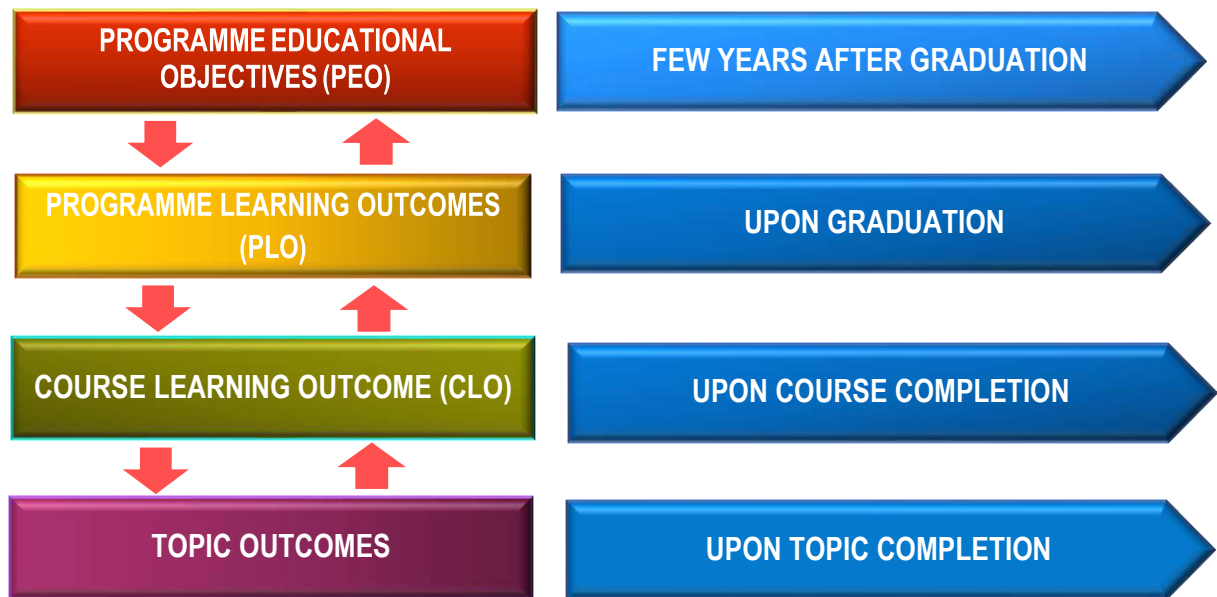
5.0   MANAGEMENT ORGANISATION CHART
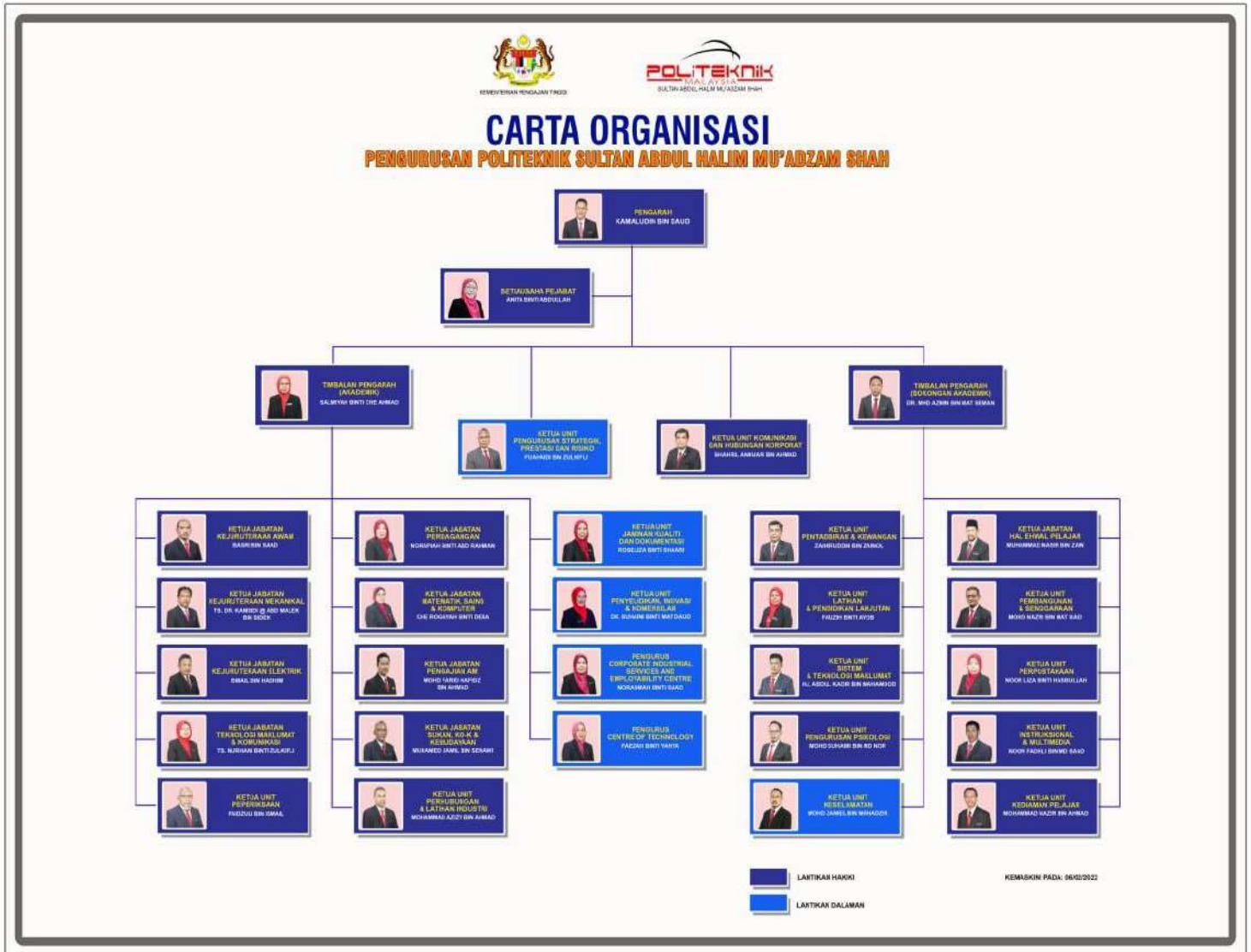
6.0 MECHANICAL ENGINEERING DEPARTMENT

6.1 MECHANICAL ENGINEERING DEPARTMENT ORGANISATION CHART

KETUA JABATAN: **WAN AB AZIZ BIN WAN KADIR**
PEN. KETUA JAB: **IR DR NIK AHMAD FARIS BIN NIK ABDULLAH**

PROGRAM KEJ. MEKANIKAL PEMBUATAN (DTP)		
1	Syed Mohd. Fadly bin Syed Hassan (KP)	DH44
2	Dr Syaiful Nizam bin Ab. Rahim	DH52
3	Ts Kamarulna Fuzi bin Mad Kasim	DH48
4	Neza Nurulhuda binti Nekmat	DH48
5	Azijan bin Murad	DH48
6	Khairul Adly bin Abd Wahib	DH44
7	Mohd Izham bin A. Rahim	DH44
8	Mohamad Nazri bin Abd Halim	DH44
9	Mohd Helmi bin Abd Halim	DH44
10	Nur Faridah Hanim binti Mohd. Mokht	DH44
11	Zainol bin Hashim	DH44
12	Nor Ruzanna binti Abd Rahman	DH41
13	Zairini binti Mohammad	DH41
14	Mohd Shakir bin Mohammad Isa	DH42
15	Abdul Rahman bin Mohd Khaidzir	DH40

PROGRAM KEJ. MEKATRONIK (DEM)		
1	Syukrul Hassani bin Jamaludin (KP)	DH44
2	Che Mohd Azmi bin Che Ibrahim	DH48
3	Ts Mohd Yahya bin Saad	DH48
4	Mohd Zaniel bin Mahadzir	DH48
5	Muffili bin Mahadi	DH48
6	Norfidah binti Abdul Hamid	DH48
7	Shaiful Zamri bin Abdul Sattar	DH48
8	Wan Nor Harman bin Wan Yahaya	DH48
9	Azahar bin Mohd Noor	DH44
10	Lizawati binti Jaafar	DH44
11	Mohd Nazri bin Saad	DH44
12	Salmi binti Abdullah	DH44
13	Shariman bin Johari	DH44
14	Abdul Latif bin Abd Razak	DH41
15	Mohd Zulkiflee Faizal bin Saleh	DH41
16	Siti Arfah binti Hashim	DH41
17	Sofian bin Yusoff	DH41

PROGRAM KEJ. MEKANIKAL LOJI (DJL)		
1	Ku Nasharudin bin Ku Ismail (KP)	DH44
2	Ts Mohamad Pauzi bin Mat Din	DH48
3	Muhammad Adli bin Haron	DH48
4	Siti Salwa binti Samsuri	DH48
5	Airul Aznie bin Mohd Sahari	DH44
6	Azunaidi bin Abdul Aziz	DH44
7	Mohd Fadzli bin Othman	DH44
8	Norhasimah binti Habibi	DH44
9	Rokayah binti A. Rashid	DH44
10	Mohd Nizam bin Osman	DH42
11	Mohd Rafidi bin A. Aziz	DH41
12	Rohaizan bin Radzi	DH41
13	Siti Rohanah binti Murad	DH41
14	Mohd Radzi bin Mohd Rajab	DH34

PROGRAM KEJ. MEKANIKAL PLASTIK(DMK)		
1	Mohd Hairol Mizzam Bin Haris (KP)	DH44
2	Ir Dr Nik Ahmad Faris bin Nik Abdul	DH52
3	Ts Azimah binti Ismail	DH52
4	Riduwan bin Zakaria	DH48
5	Suzana binti Shafie	DH48
6	Ahmad Fahmi bin Fadzil	DH44
7	Mahdir bin Abdullah	DH44
8	Azora binti Jaafar	DH41
9	Jefri bin Hanafiah	DH41
10	Mohd Alfathi bin Md Udin	DH41
11	Zulkifli bin Hamzah	DH41
12	Muhammad Izzudin bin Mohd Yuso	DH34
13	Mohd Nubli bin Ahmat	DH34

STAF SOKONGAN		
PEMBANTU MAKMAL		
1	Ishak bin Man	C17
2	Norizan binti Md Isa	C17
3	Norazaimi binti Ramli	C17
PENOLONG JURUTERA		
1	Mohamad Taufik bin A.Rahman	JA29
PEMBANTU OPERASI		
1	Mohd Padzri bin Bakar	N11

6.2   PROGRAMME MECHANICAL ENGINEERING (MANUFACTURING) LECTURERS

No.	Name	Designation	Contact No.	E-mail
1.	SYED MOHD. FADLY BIN SYED HASSAN	Head of Programme	04-9146100 ext. 6293	syedfadly@polimas.edu.my
2.	DR SYAIFUL NIZAM BIN AB. RAHIM	Senior Lecturer	04-9146100 ext. 6293	syaifuln@polimas.edu.my
3.	TS KAMARULNA FUZI BIN MAD KASIM	Senior Lecturer	04-9146100 ext. 6293	kamarulnafuzi@polimas.edu.my
4.	NEZA NURULHUDA BINTI NEKMAT	Senior Lecturer	04-9146100 ext. 6293	nezanurulhuda@polimas.edu.my
5.	AZIJAN BIN MURAD	Senior Lecturer	04-9146100 ext. 6293	azijan@polimas.edu.my
6.	KHAIRUL ADLY BIN ABD WAHIB	Lecturer	04-9146100 ext. 6293	adly@polimas.edu.my
7.	ZAINOL BIN HASHIM	Lecturer	04-9146100 ext. 6293	zainolhashim@polimas.edu.my
8.	MOHAMAD NAZRI BIN ABD HALIM	Lecturer	04-9146100 ext. 6293	mnazri.ahalim@polimas.edu.my
9.	NUR FARIDAH HANIM BINTI MOHD. MOKHTAR	Lecturer	04-9146100 ext. 6293	hanim83@polimas.edu.my
10.	MOHD HELMI BIN ABD HALIM	Lecturer	04-9146100 ext. 6293	mohdhelmi@polimas.edu.my
11.	MOHD IZHAM BIN A. RAHIM	Lecturer	04-9146100 ext. 6293	mohdizham@polimas.edu.my
12.	NOR RUZANNA BINTI ABD RAHMAN	Lecturer	04-9146100 ext. 6293	norruzanna@polimas.edu.my
13.	ZAIRINI BINTI MOHAMMAD	Lecturer	04-9146100 ext. 6293	zairini@polimas.edu.my
14.	MOHD SHAKIR BIN MOHAMMAD ISA	Lecturer	04-9146100 ext. 6293	mohdshakir@polimas.edu.my
15.	ABDUL RAHMAN BIN MOHD KHAIDZIR	Lecturer	04-9146100 ext. 6293	arahman.khaidzir@polimas.edu.my

6.3   PROGRAMME DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)

6.3.1   PROGRAMME OVERVIEW

SYNOPSIS

The Diploma in Mechanical Engineering (Manufacturing) programme is designed to produce 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, Electrical, Manufacturing, Instrumentation & Control and Mechanical Maintenance.

6.3.2   JOB PROSPECT

JOB PROSPECT This programme provides the knowledge and skills in Manufacturing 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. Production/ Process Supervisor

c. Technical Assistant d. Technician

d. Product Designer

e. Quality Officer

f. CNC Programmer Technical Assistant

g. Precision Machinist

h. Production / Process Executive

i. Procurement Executive

j. Technical Specialist

k. Technical Instructor or Lecturer

l. Entrepreneur

6.3.3 PROGRAMME AIMS

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

6.3.4 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

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 with strong linkage with society and players in the industry
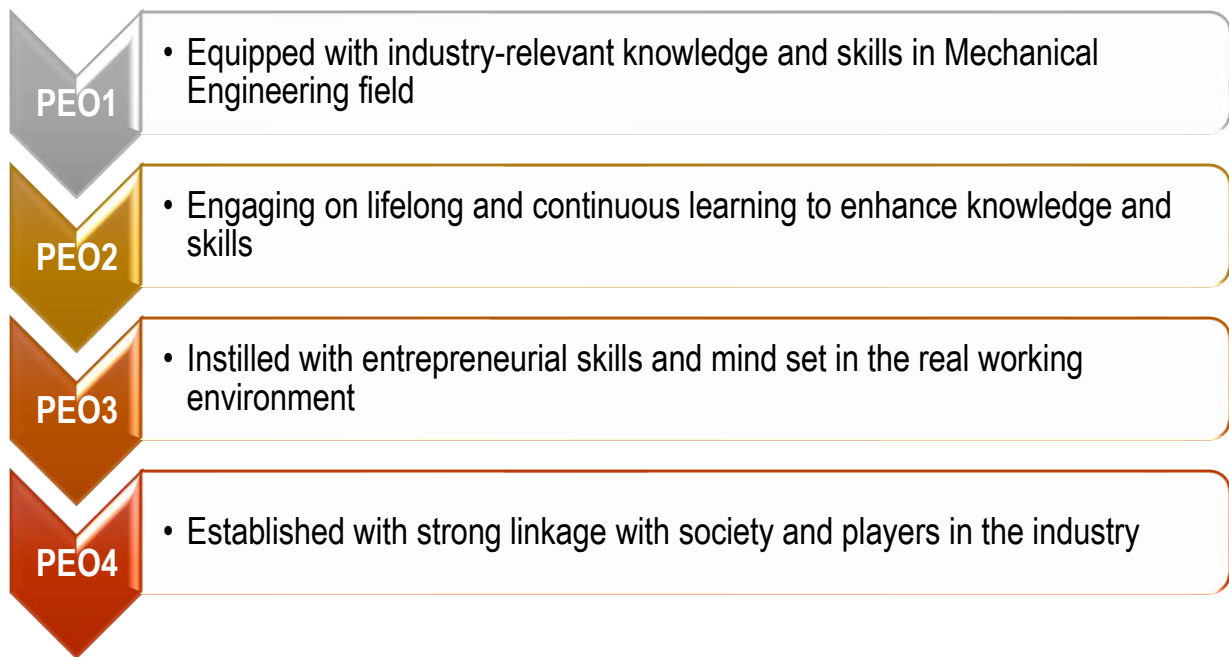
6.3.5   PROGRAMME LEARNING OUTCOMES(PLO)

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

PLO1	• Apply knowledge of applied mathematics, applied science, engineering fundamentals and an engineering specialisation as specified in DK1 to DK4 respectively for practical procedures and practices
PLO2	• Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity (DK1 to DK4)
PLO3	• Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations (DK5)
PLO4	• Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements
PLO5	• Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)
PLO6	• Demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequentresponsibilitiesrelevant to engineering technician practice and solutions to well-defined engineering problems (DK7)
PLO7	• Uunderstand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts (DK7)
PLO8	• Understand and commit to professional ethics and responsibilities and norms of technician practice
PLO9	• Function effectively as an individual, and as a member in diverse technical teams PLO10: 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
PLO11	• 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
PLO12	• Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge

6.3.6 PROGRAMME STRUCTURE FOR DIPLOMA IN MECHANICAL ENGINEERING (MANUFACTURING)

CLASSIFICATION	COURSE CODE	COURSE	L	P	T	O	CREDIT VALUES	PLO 1 Knowledge (CLS 1)	PLO 2 Problem Analysis (CLS2)	PLO 3 Design/Development of Solution (CLS2)	PLO 4 Investigation (CLS2)	PLO 5 Modern Tool Usage (CLS 3a/c)	PLO 6 The Engineer and Society (CLS 3b)	PLO 7 Environment and Sustainability (CLS5)	PLO 8 Ethic (CLS5)	PLO 9 Individual and Teamwork (CLS 3d)	PLO 10 Communication (CLS 3b)	PLO 11 Project Management and Finance (CLS 4)	PLO 12 Life Long Learning (CLS 4)	PREREQUISITE / CO-REQUISITE
SEMESTER 1																				
Compulsory	DUE10012	Communicative English 1	1	0	2	0	2										√		√	
Compulsory	MPU24XX1	Sukan / Unit Beruniform 1	0	2	0	0	1									√			√	
Common Core	DUW10022	Occupational, Safety and Health for Engineering	2	0	0	0	2	√							√		√			
Common Core	DBS10012	Engineering Science	2	1	0	0	2	√				√								
Common Core	DBM10013	Engineering Mathematics 1	2	0	2	0	3	√				√					√			
Discipline Core	DJJ10013	Engineering Drawing	1	3	0	0	3	√				√				√				
Discipline Core	DJJ10022	Mechanical Workshop Practice 1	0	4	0	0	2					√	√							
Discipline Core	DJJ10033	Workshop Technology	3	0	0	0	3	√								√			√	
		TOTAL		25			18													
SEMESTER 2																				
Compulsory	MPU23052 / MPU23042	Sains, Teknologi dan Kejuruteraan Dalam Islam* / Nilai Masyarakat Malaysia**	1	0	2	0	2								√				√	
Compulsory	MPU24XX1	Kelab/Persatuan / Unit Beruniform 2	0	2	0	0	1									√			√	MPU24XX1
Common Core	DBM20023	Engineering Mathematics 2	2	0	2	0	3	√				√					√			DBM10013
Discipline Core	DJJ20053	Electrical Technology	2	2	0	0	3	√				√								
Discipline Core	DJJ20063	Thermodynamics	2	2	0	0	3	√				√								
Discipline Core	DJJ20073	Fluid Mechanics	2	2	0	0	3	√				√								
Specialization	DJF21012	Manufacturing Workshop Practice 1	0	4	0	0	2					√	√							DJJ10022
		TOTAL		25			17													
SEMESTER 3																				
Compulsory	DUE30022	Communicative English 2	1	0	2	0	2										√		√	DUE10012
Compulsory	MPU21032	Penghayatan Etika dan Peradaban	1	0	2	0	2								√				√	
Common Core	DBM30033	Engineering Mathematics 3	2	0	2	0	3	√				√					√			DBM20023
Discipline Core	DJJ30113	Material Science and Engineering	2	2	0	0	3	√				√				√				
Discipline Core	DJJ30093	Engineering Mechanics	2	2	0	0	3	√	√			√								
Discipline Core	DJJ30122	Computer Aided Design	1	2	0	0	2	√				√					√			DJJ10013
Specialization	DJF31022	Manufacturing Workshop Practice 2	0	4	0	0	2					√	√							DJF21012
		TOTAL		25			17													

Classification	Code	Course	L	P	T	O	Credit														Pre-requisite
SEMESTER 4																						
Common Core	DJJ40132	Engineering Society	2	0	0	0	2							√	√	√						
Discipline Core	DJJ40153	Pneumatic & Hydraulics	2	2	0	0	3	√			√		√									
	DJJ30103	Strength Of Materials	2	2	0	0	3	√	√				√									
	DJJ40182	Project 1	2	0	0	0	2		√						√					√		
Specialization	DJF41032	Manufacturing Workshop Practice 3	0	4	0	0	2						√			√						DJF31022
	DJF41042	CAD/CAM	0	4	0	0	2				√		√								√	
	DJF41052	Manufacturing System	2	0	0	0	2		√			√						√				
Elective		Elective ***																				
TOTAL				22			16															
SEMESTER 5																						
Compulsory	DUE50032	Communicative English 3	1	0	2	0	2										√		√		DUE30022
	MPU22012	Entrepreneurship	1	0	2	0	2										√	√			
Discipline Core	DJJ50193	Project 2	0	4	0	0	3			√	√						√	√			DJJ40182
Specialization	DJF51062	Manufacturing Control	2	0	0	0	2		√		√							√			
	DJF51072	Jig and Fixture Design	1	2	0	0	2		√	√				√							
	DJF51082	Quality Control	2	0	0	0	2	√	√							√					
	DJF51092	Tool Design	1	2	0	0	2		√	√				√							
Elective		Elective***																				
TOTAL				20			15															
SEMESTER 6																						
Industrial Training	DUT600610	Industrial Training	0	0	0	0	10					√	√		√	√	√			√		
TOTAL				0			10															
TOTAL CREDIT VALUES							95															

	Code	**ELECTIVES COURSES**	L	P	T	O	Credit														
1	DJF42012	Advanced Manufacturing Process	2	0	0	0			√		√					√					
2	DJF52032	Manufacturing Economy	2	0	0	0			√		√							√			
3	DJJ42032	Instrumentation and Control	2	0	0	0			√		√						√				
4	DJJ42022	Industrial Management	2	0	0	0	2		√						√		√				
5	DJJ52052	Railway Track System	2	0	0	0		√				√				√					
6	DJM20032	C Programming	1	2	0	0		√		√										√	
7	DJM40082	Programmable Logic Control	1	2	0	0		√	√	√											
8	DJM40092	Control System	2	1	0	0			√	√						√					

	Code	**FREE ELECTIVES***	L	P	T	O	Credit											
1	DUD10012	Design Thinking	1	0	0	1	2		√							√		

Course Classification	Total Credit	%
i. (a) Compulsory	14	15
(b) Compulsory (Bahasa Kebangsaan A)[b]	2[b]	0
ii. Common Core	15	16
iii. Discipline Core	36	38
iv. Specialization	18	19
Total Credit	**83**	**88**
v. (a) Elective	2	2
(b) Free Electives*	2[a]	0
vi. Industrial Training	10	10
Grand Total Credit	**95**	**100**

Engineering and Engineering Technology Courses	Credit	%
i. Practice - Oriented Components	32	48
ii. Engineering and Engineering Technology Total Credit	66	100

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

6.3.7 SYNOPSIS AND COURSE LEARNING OUTCOMES (CLO)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
1	DBM10013 ENGINEERING MATHEMATICS 1	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 3x3 matrix. Credit(S): 3 Pre-Requisite(S): None	1. Use mathematical statement to describe relationship between various physical phenomena. (C3, CLS1) 2. Show mathematical solutions using the appropriate techniques in mathematics. (C3, CLS3c) 3. Use mathematical expression in describing real engineering problems precisely, concisely and logically. (A3, CLS3b)
1	DBS10012 ENGINEERING SCIENCE COURSE	ENGINEERING SCIENCE 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. Credit(S): 2 Pre-Requisite(S): None	1. Use basic physics concept to solve engineering physics problems (C3, CLS1) 2. Apply knowledge of fundamental physics in activities to mastery physics concept (C3, CLS 1) 3. Perform appropriate activities related to physics concept (P3, CLS 3a)
1	DJJ10013 ENGINEERING DRAWING	ENGINEERING DRAWING 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 the CAD 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. Credit(S): 3 Pre-Requisite(S): None	1. Apply the fundamentals of technical drawing and features of CAD software in producing engineering drawing. (C3, P1) 2. Construct the technical drawing and 2D CAD drawing according to the engineering drawing standards. (P3, PLO5) 3. Propose a project report with following engineering norms and practices in engineering drawing. (A3, PLO8)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
1	DJJ10022 MECHANICAL WORKSHOP PRACTICE 1	MECHANICAL WORKSHOP PRACTICE 1 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. Credit(S): 3 Pre-Requisite(S): None	1. Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology (C3, PLO1) 2. Apply standard practice in operating mechanical tools and component (C3, PLO8) 3. Demonstrate continuous learning and information management skills to complete assigned task (A3, PLO12)
1	DJJ10033 WORKSHOP TECHNOLOGY	WORKSHOP TECHNOLOGY provides exposure and knowledge in using hand tools, machine operation such as drilling, lathe, milling and computer numerical control. It also covers on gear measurement and inspection welding process in oxy acetylene, Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW). Credit(S): 3 Pre-Requisite(S): None	1. Apply the knowledge of basic mechanical components and equipment, hand tools and measuring equipment in workshop technology (C3, PLO1) 2. Apply standard practice in operating mechanical tools and component (C3, PLO8) 3. Demonstrate continuous learning and information management skills to complete assigned task (A3, PLO12)
1	DUW10022 OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING	OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING 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, Fire Safety, Hazard Identification Risk Control and Risk Assessment (HIRARC), Workplace Environment and Ergonomics and guide the students gradually into this multi-disciplinary science. Credit(S): 2 Pre-Requisite(S): None	1. Explain briefly Occupational Safety and Health (OSH) procedures, regulation and its compliance in Malaysia. (C2, PLO1) 2. CLO2: Initiates incident hazards, risks and safe work practices in order to maintain health and safe work environment. (A3, PLO8) 3. CLO3: Demonstrate communication skill in group to explain the factor that can lead to accident in workplace. (A3, PLO10)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
2	DJF21012 MANUFACTURING WORKSHOP PRACTICE	MANUFACTURING WORKSHOP PRACTICE exposes the students to the fundamental of manufacturing processes, industrial environment, cultural issues and hands on experiences. This course enables students to apply knowledge and develop required technical skills on sand casting, conventional machining and TIG/MIG welding. The workshop practice helps the students to practice appropriate safety procedures and standard operation on completing mini project and practical task. The practical skills also cover the organizational and housekeeping activity, schedule maintenance, planning skills, supervising design, inspecting and testing welding task in order to meet the quality requirement. Credit(S): 2 Pre-Requisite(S): None	1. Build a project using casting, TIG and MIG welding process based on standard operational procedures and safety. (P3, PLO5) 2. Perform direct indexing operation using indexing head attachment in milling machine processes. (P4, PLO5) 3. Demonstrate an understanding of the responsibilities, societal, health, safety, legal and cultural issues during practical work session. (A3, PLO6)
2	DJJ20053 ELECTRICAL TECHNOLOGYCOURSE	ELECTRICAL TECHNOLOGY 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. Credit(S): 3 Pre-Requisite(S): None	1. Explain the principles and fundamental of electrical circuits, electromagnetism, transformers and electrical machine (C2, PLO1) 2. Solve the problem related to electrical circuits, electromagnetism, transformers and electrical machine (C3, PLO1) 3. Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO5)
2	DJJ20063 THERMODYNAMICS	THERMODYNAMICS 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. Credit(S): 3 Pre-Requisite(S): None	1. Explain fundamentals concept and properties of pure substances in thermodynamics (C2, PLO1) 2. Apply Laws of thermodynamics and it processes (C3, PLO1) 3. Organize appropriately experiments according to the Standard Operating Procedures (P4, PLO5)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
2	DJJ20073 FLUID MECHANICS	FLUID MECHANICS 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. Credit(S): 3 Pre-Requisite(S): None	1. Explain the fundamentals of fluid (C2, PLO1) 2. Solve problems related to fluid properties, fluid statics and fluid dynamics (C3, PLO1) 3. Organize appropriate experiments in groups according to the standard operating procedures (P4, PLO5)
2	MPU23052 Sains, Teknologi dan Kejuruteraan Dalam Islam*	Sains Teknologi dan Kejuruteraan dalam Islam memberi pengetahuan tentang Konsep Islam sebagai Ad 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. Credit(S): 2 Pre-Requisite(S): None	1. Melaksanakan dengan yakin amalan Islam dalam kehidupan seharian. 2. Menerangkan etika dan profesionalisme berkaitan sains teknologi dan kejuruteraan dalam Islam. 3. Menghubungkait minda ingi tahu dengan prinsip syariah, etika dan kaedah fiqh dalam bidang sains, teknologi dan kejuruteraan menurut perspektif Islam.
2	MPU23042 Nilai Masyarakat Malaysia**	Nilai masyarakat Malaysia membincangkan aspek sejarah pembentukan masyarakat, nilai-nilai agama, adat resam dan budaya masyarakat di Malaysia. Selain itu, pelajar dapat mempelajari tanggungjawab sebagai individu dan nilai pepaduan dalam kehidupan di samping cabaran-cabaran dalam membentuk masyarakat Malaysia. Credit(S): 2 Pre-Requisite(S): None	1. Membincangkan sejarah dan nilai dlam pembentukan masyarakat di Malaysia 2. Menerangkan etika dan profesionalisme terhadap konsep perpaduan bagi meningkatkan semangat patriotisme masyarakat Malaysia. 3. Menghubungkait minda ingin tahu dengan cabaran-cabaran dalam membentuk masyarakat Malaysia.
2	DBM20023 Engineering Mathematics 2	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. Credit(S): 3 Pre-Requisite(S): DBM10013	1. Use algebra and calculus knowledge to describe relationship between various physical phenomena. (C3,CLS 1) 2. Solve the mathematical problems by using appropriate and relevant fundamental calculus techniques. (C3,CLS 3c) 3. Use mathematical language to express mathematical ideas and arguments precisely, concisely and logically in calculus (A3,CLS 3b)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
3	DJF31022 MANUFACTURING WORKSHOP PRACTICE 2	MANUFACTURING WORKSHOP PRACTICE 2 exposes the students to the fundamental of manufacturing processes, industrial environment cultural issues and hands-on experiences. This course enables students to apply knowledge and develop required technical skills on CNC machine, conventional machining, surface grinding machine and TIG and MIG welding. The workshop practice helps the students to practice appropriate safety procedures and standard operation on completing mini project and practical task. The practical skills also cover the organizational and housekeeping activity, schedule maintenance, planning skills, supervising design, inspecting and testing welding task in order to meet the quality requirements. Credit(S): 2 Pre-Requisite(S): DJF21012	1. CLO1: Build a project using CNC machine, TIG and MIG welding process based on standard operational procedures and safety.(P3, PLO5) 2. CLO2: Perform contouring cutting operation using rotary table attachment in milling machine processes.(P4, PLO5) 3. CLO3: Demonstrate an understanding of the responsibilities, societal, health, safety, legal and cultural issues during practical work session.(A3, PLO6)
3	DJJ30093 ENGINEERING MECHANICS	ENGINEERING MECHANICS 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. Credit(S): 3 Pre-Requisite(S): None	1. Solve problems related to static and dynamics based on the concepts and principle of engineering mechanics (C3, PLO 1) 2. Analyze engineering related problems based on fundamentals of static and dynamics (C4, PLO 2) 3. Organize appropriately experiment in groups according to Standard Operation Procedures (P4, PLO 5)
3	DJJ30113 MATERIAL SCIENCE AND ENGINEERING	MATERIALS SCIENCE AND ENGINEERING 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. Credit(S): 3 Pre-Requisite(S): None	1. Apply the fundamental of material science to identify the materials, properties, behavior, processes and treatment.(C3 ,PLO1) 2. Performed appropriate material testing according to the Standard Operating Procedures. (P4, PLO5) 3. Demonstrate the ability to work individually and in groups to complete assigned tasks during the practical work session.

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
3	COMPUTER AIDED DESIGNCOURSECODE: DJJ30122	COMPUTER AIDED DESIGN 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. Credit(S): 3 Pre-Requisite(S): DJJ10013	1. Apply CAD commands in order to produce engineering drawing. (C3, PLO1) 2. Construct 3D drawing of Mechanical Components according Drawing Standards. (P4, PLO5) 3. Demonstrate a presentation with following technical standard Communication. (A3, PLO10)
3	DBM30033 ENGINEERING MATHEMATICS 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. Credit(S): 3 Pre-Requisite(S): DBM20023	1. Demonstrate an understanding of the common body of knowledge in mathematics. (C3, CLS 1) 2. Demonstrate problems solving skills in engineering problems. (C3, CLS 3c) 3. Use mathematical expression in describing real engineering problems precisely, concisely and logically. (A3, CLS 3b)
3	MPU21032 Penghayatan Etika dan Peradaban	Penghayatan etika dan Peradaban ini menjelaskan tentang konsep etika daripada perspektif peradaban yang berbeza. Ia bertujuan bagi mengenal pasti sistem, tahap perkembangan, kemajuan dan kebudayaan merentas bangsa dalam mengukuhkan kesepaduan sosial. Selain itu, perbincangan dan perbahasan berkaitan isu-isu kontemporari dalam aspek ekonomi, politik, sosial, budaya dan alam sekitar daripada perspektif etika dan peradaban dapat melahirkan pelajar yang bermoral dan profesional. Penerapan amalan pendidikan berimpak tinggi (HIEPs) yang bersesuaian digunakan dalam penyampaian kursus ini	1. Membentangkan konsep etika dan peradaban dalam kepelbagaian tamadun 2. Menerangkan sistem, tahap perkembangan, kesepaduan sosial dan kebudayaan merentas bangsa di Malaysia 3. Mencadangkan sikap yang positif terhadap isu dan cabaran kontemporari dari perspektif etika dan peradaban.

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
4	DJF41032 MANUFACTURING WORKSHOP PRACTICE 3	MANUFACTURING WORKSHOP PRACTICE 3 exposes the students to develop knowledge and skills in Robot Programming and Application, Programmable Logic Control, Additive Manufacturing and Plastic Processing. Robot Application helps the students to learn about programming, hands-on training and robot application. Students will also learn about creating a simple program using PLC which is widely used in manufacturing and mechanical processes. The Additive Manufacturing will focus on designing complex design shapes which involves in modifying and completing design of a prototype. Plastic processing process helps the students to understand the basic principle of the plastic manufacturing processes. Credit(S): 2 Pre-Requisite(S): Manufacturing Workshop Practice 2	1. Manipulates robot programming and PLC programming process. (P3, PLO5) 2. Manipulates robot programming and PLC programming process. (P3, PLO5) 3. Demonstrate an understanding of professional ethics, responsibilities, norms and practices during practical work session. (A3, PLO8)
4	DJF41042 CAD/CAM	CAD/CAM course covers theory and basic of coding languages, structures and the use of CAD/CAM systems to generate and verify tool path. This course aims to expose students about integration between CAD and CAM operation inclusive object's design, code producing, tool path simulation for machining operation and generate NC part programming. This course also covers the application on CAD/CAM software by transferring NC program to CNC milling/lathe machine. Credit(S): 2 Pre-Requisite(S): None	1. Display machining code (G and M code) by using CAD/CAM software as part of drilling and milling/lathe process. (P3, PLO3) 2. Build a project using CNC milling or lathe machine by utilizing related CAD/CAM simulation software. (P4, PLO5) 3. Demonstrate continuous learning and information management skill while engaging in independent acquisition of new knowledge and skill to develop a project. (A3, PLO12)
4	DJF41052 MANUFACTURING SYSTEM	MANUFACTURING SYSTEM explains the terminologies and concepts that are necessary in the learning of manufacturing system. It provides knowledge regarding fundamental of manufacturing system, industrial robotics, process layout, material handling systems and Lean system. Credit(S): 2 Pre-Requisite(S): None	1. Apply the basic concepts of manufacturing system, robotic in manufacturing, process analysis, process layout and material handling system. (C3, PLO2) 2. Investigate problem solving in Lean system. (C4, PLO4) 3. Demonstrate good communication skills in engineering society. (A3, PLO10)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
4	DJF52032 MANUFACTURING ECONOMY	MANUFACTURING ECONOMIC provides knowledge and understanding for students on economy aspect which includes concepts, categories, factor of supply and demand, basic element and characteristics of cost and decision involve in manufacturing process. This course also focuses on fixed cost, variable cost, direct and indirect cost, actual cost and break-even analysis which leads towards eliminating Credit(S): 2 Pre-Requisite(S): None	1. Apply knowledge to identify and classify of fixed cost, variable cost, direct and indirect cost which contribute to total cost in production. (C3, PLO2) 2. Analyze correctly the actual cost and break-even analysis for decision making process. (C4, PLO4) 3. Demonstrate ability to manage project including financial aspect for the task assigned. (A3, PLO11
4	DJJ 30103 STRENGTH OF MATERIALS	STRENGTH OF MATERIALS 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. Credit(S): 2 Pre-Requisite(S): None	1. Apply the concepts of strength of materials to solve related problems. (C3, PLO1) 2. Analyse problems correctly related to strength of materials (C4, PLO2) 3. Organize appropriately experiment in groups according to Standard Operation Procedures (SOP).(P4, PLO5)
4	DJJ 40132 ENGINEERING AND SOCIETY	ENGINEERING AND SOCIETY 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. Credit(S): 2 Pre-Requisite(S): None	1. Implement the roles of engineering profession towards the developing of society and its challenges in globalization (C3, PLO6) 2. Determine the important of work ethics, by laws and professionalism in engineering profession. (C4, PLO8) 3. Determine the needs for sustainable and green engineering towards providing the solutions in engineering field. (C4, PLO7)
4	DJJ 40153 PNEUMATIC & HYDRAULICS	PNEUMATIC & HYDRAULICS provides knowledge and understanding to the importance of pneumatics and hydraulics circuits, equipment and design along with its usage in the industry. Credit(S): 3 Pre-Requisite(S): None	1. Analyze the basic concept and function of pneumatics and hydraulics system. (C3, PLO1) 2. Design pneumatic, electro-pneumatic and hydraulic circuit according to assigned tasks. (C5, PLO3) 3. Perform experiment on pneumatic, electro-pneumatic and hydraulic circuit during practical session. (P4, PLO5)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
4	DJJ40182 PROJECT 1	PROJECT 1 provides students with solid foundation on knowledge and skills in formulating project proposal preparation, writing and presentation Credit(S): 2 Pre-Requisite(S): None	1. Identify the engineering problems to be solved (C4, PLO2) 2. Analyze methods to solve problems (C4, PLO7) 3. Propose a solution to problems (A3, PLO11)
5	DJF51062 MANUFACTURING CONTROL	MANUFACTURING CONTROL provides knowledge about basic principles and concept on managing an organization and major levels in manufacturing planning and control system (MPC) which will help students in making forecast, production plan, control production and manage inventory. This course also gives knowledge about production scheduling. It also includes knowledge in managing MRP system (material management), production scheduling and inventory management. Credit(S): 2 Pre-Requisite(S): None	1. Attain the concept and application of Manufacturing Forecasting, Production Scheduling, Inventory Control, Productivity and Capacity Planning. (C3, PLO2) 2. Integrate Material Requirement Planning (MRP) and inventory control for manufacturing process controlling activities. (C4, PLO4) 3. Adopt project management framework to develop a Material Requirement Planning (MRP) according to inventory management. (A3, PLO11)
5	DJF51072 JIG AND FIXTURE DESIGN	JIG AND FIXTURE DESIGN covers basic production needs in industry. The topics taught includes types and functions of jigs and fixtures, supporting and locating, clamping and work holding principles, design economics, designing and constructing plate jig and plate fixtures. This course also provides knowledge in management, sustainability and manufacturing systems. Credit(S): 2 Pre-Requisite(S): None	1. Apply the concepts and principles of jigs and fixtures design. (C3,PLO2) 2. Perform 3D design in planning and devising stage for mini project by using CAD software. (P4, PLO3) 3. Demonstrate convictions towards environment and sustainability to complete assigned tasks during mini project sessions. (A3, PLO7)
5	DJF51082 QUALITY CONTROL	QUALITY CONTROL 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 Credit(S): 2 Pre-Requisite(S): None	1. Apply the relation of statistics and quality management system in understanding of quality control and their application tools. (C3, PLO1) 2. Determine the related quality tools and techniques to control the quality of products or services based on case study. (C4, PLO2) 3. Demonstrate ability to work in team to complete the assigned tasks. (A3, PLO9)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
5	DJF51092 TOOL DESIGN	TOOL DESIGN exposes the students to the knowledge of datum concept, geometric tolerances and fundamentals to design tool based on clamping and locating principle. The topics also covers the principle of tool applications in metal and non-metal process. All the topics discussed will enable the students to plan and identify the use of tooling. They will also be exposed to the application of tooling in related industries. Credit(S): 2 Pre-Requisite(S): None	1. Apply appropriately the concepts of tool design method and tooling material selection in designing tools. (C3, PLO2) 2. Perform 3D design of mould, tool and die design using CAD software. (P4, PLO3) 3. Demonstrate conviction towards environment and sustainability to complete assigned tasks during practical work sessions. (A3, PLO7)
5	DJJ 50193 PROJECT 2	PROJECT 2 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. Credit(S): 2 Pre-Requisite(S): None	1. Demonstrate appropriate and creative solution in solving project problems. (P5, PLO3) 2. Perform project plan to achieve objectives with valid and reliable results. (P4, PLO4) 3. Explain the project work and defend project outcomes effectively with good communication skills. (A4, PLO10) 4. Organize project activities and outcomes in report accordance to the specified standard format that applies engineering management principles. (P4, PLO11)
5	MPU22012 ENTREPRENEURSHIP	ENTREPRENEURSHIP focuses on the fundamentals and concept of entrepreneurship in order to inculcate the value and interest in students to choose entrepreneurship as a career. This course can help students to initiate creative and innovative entrepreneurial ideas. It also emphasizes a preparation of a business plan framework through Business Model Canvas. Credit(S): 2 Pre-Requisite(S): None	1. Propose the value proposition of entrepreneurial idea using Business model Canvas. (A3, CLS 3b) 2. Develop a viable business plan by organizing business objectives according to priorities. (A4, CLS 4) 3. Organize the online presence business in social media marketing platform. (A3, CLS 4)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
6	DUT600610 ENGINEERING INDUSTRIAL TRAINING	ENGINEERING INDUSTRIAL TRAINING course will provide student with first-hand experience in an engineering practice environment outside the polytechnic. Students will practice their knowledge and skill based on knowledge learned in polytechnic through industry supervision to acquire the craft skill and essential. Student also need to demonstrate their responsibilities and professional ethics, communication, teamwork, and interpersonal and lifelong learning skills at the workplace Credit(S): 10 Pre-Requisite(S): Fulfill requirement industrial training guideline	1. Perform the assigned task accordingly based on job scope requirement (P4, PLO5) 2. Initiate responsibilities as engineering technician while dealing with societal, health, safety, legal, cultural and other issues (A3, PLO6) 3. Practice professional ethic and responsibility as an engineering technician. (A5, PLO8) 4. Display ability to work in team or indepently base on the given task (P4, PLO9) 5. Explain the task by using effectively verbal/ visual communication skill in performing job requirement (A4, PLO 10) 6. Write a report based on the given task accordingly to technical practice (C3, PLO 10) 7. Display life long-learning skill in completing the given task (P4, PLO12)

8.0 SUPPORT SERVICES

8.1 STUDENT AFFAIRS DEPARTMENT (HEP)

The Student Affairs Department basically has two main wings namely:

a. Admission and Data

The main function of this unit is to conduct the admission process efficiently and effectively. The process is conducted twice a year. Coordination and consultation with all the Head of Academic Departments is done in order to ensure the maximum enrolment of students.

b. Welfare and Discipline

The responsibilities of the Welfare and Discipline include the following:

- Scholarship and Education
- Insurance Policy
- Orientation Week
- Discipline
- Welfare
- Registration Of Student Vehicles
- Students' Representative Council

Each student will be covered under the insurance scheme known as *Accident Takaful* and *Family Group Takaful*. Insurance Policy from Takaful Company has been selected to cover the scope and amount of coverage as follows:

Company	Scope	Sum Assured
Takaful Malaysia Premium: RM15.00 yearly Students are insured 24 hours during their studies in POLIMAS	Death caused by accident	RM20,000.00
	Total Permanent/ Disablement	RM20,000.00
	Burial expenses	RM1000.00
	Medical Expenses	RM1000.00 @ RM40.00 per day

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

a. Students can get treatment from government or private hospitals in case of accidents.

b. Academic Advisors / Coordinators of Welfare / Students / Students Next Kin of Guardians / Guardians must report the accident to the Student Affairs Department (HEP), POLIMAS within 14 days from the date of accident. HEP will notify Takaful within 30 days after the report is made for further actions to be taken.

c. In the case of the student's location is far from POLIMAS and he or she may want to apply for claims from insurance companies, POLIMAS will hand the "Insurance Claim Form" to the student / family / guardian for follow-up actions. The completed claim form and supporting documents can be delivered or mailed to HEP POLIMAS.

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

a. A copy of the identity card and student card

b. A copy of the police report / industry

c. A copy of driver's license

d. Doctor report / Original medical bills

e. A copy of discharge letter

f. A copy of the death certificate / post mortem

g. Pictures (scene location / physical)

8.2   EXAMINATION UNIT

Each Polytechnic Ministry of Education is responsible for providing guidance on learning, assessment, control and conduct of the examination. Certificate and Diploma to each student is subject to approval and confirmation of Board of Examination and Certificate / Diploma Polytechnic after students have passed all examinations and meet all the requirements of the course. For a polytechnic, Examination Unit is the unit where responsible for planning, managing and implementing all activities related to student assessment based on the guidelines and evaluation set.

Grading System:

Marks	Grade Points	Grade	Status
90-100	4.00	A+	Excellent
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-	Passed
55-59	2.33	C+	Passed
50-54	2.00	C	Passed
47-49	1.67	C-	Passed
44-46	1.33	D+	Passed
40-43	1.00	D	Passed
30-39	0.67	E	Failed
20-29	0.33	E-	Failed
0-19	0.00	F	Failed

Complete information about Examination Unit can be referred to *ARAHAN-ARAHAN PEPERIKSAAN DAN KAEDAH PENILAIAN.*

8.3 LIAISON & INDUSTRIAL TRAINING UNIT

The Liaison & Industrial Training Unit (UPLI) is responsible for managing students' industrial training affairs. Students will be assigned to a particular organization during their training period based on their respective fields of study.

The placement process is finalized before training commences. Students are constantly advised to maintain a high level of discipline. They should abide by the rules and regulations of both the polytechnic and organization. Organizations are advised to consult the polytechnic immediately if there are any disciplinary problems.

Complete information about Liaison & Industrial Training Unit can be referred to ***PENGURUSAN DAN KAEDAH PENILAIAN LATIHAN INDUSTRI POLITEKNIK.***

8.4 LIBRARY UNIT

POLIMAS library provides academic resources and services to all students, staff and other members of POLIMAS community. The library provides quality and up to date information to everyone in terms of managing and providing access to information resources. Taking the role as a centre of knowledge, the library acts as a catalyst and assist in the teaching and learning and research in the process of producing creative and innovative semiprofessional.

Business Hour:

Sunday-Wednesday	8.30am – 4.45pm
Thursday	8.30am – 3.15 pm
Friday, Saturday and Public Holiday	Closed

8.5 PSYCHOLOGY, COUNSELING AND CAREER UNIT

The main objective of the Psychology, Counselling and Career Unit is to facilitate students' self-development by helping them make the most of their polytechnic experiences. This unit offers to help students in finding and searching for alternative ways to overcome their emotional and psychological difficulties in dealing with problem encountered during their course of study at the polytechnic, guiding students in their career planning as well as helping the acquire better access to the job market in the private and public sectors. The unit helps students to exercise self-determination, achieve and realize their potentials and become positive contributors to the society.

Psychology, Counselling and Career Unit is ready to guide and help students to overcome existing challenges in campus. It is hoped that through the counselling and consultation process offered by this unit, the students are able to achieve:

- •   Understanding of oneself
- •   Developing awareness of self-potential
- •   Able to make wise decision
- •   Actively participate in academic and co-curriculum activities

8.6 HALLS OF RESIDENCE UNIT

The management and administration consist of two parts:

- a.   Hostel management manage the hostel building and equipment
- b.   Hostel resident management in-out management, welfare activities, discipline and the resident security.

About 1100 new students been offered to stay at hostel with ratio 550 boys and 550 girls.

All information about support services and be referred to ***BUKU PANDUAN DAN PERATURAN AM.***

EDITORIAL COMMITTEES

Chairman   : Wan Abdul Aziz Bin Wan Kadir (Head of Department)

Editors   : Syed Mohd Fadly Bin Syed Hassan (Head of Programme)

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                                     Nor Ruzanna binti Abdul Rahman