POLITEKNIK MALAYSIA

SULTAN ABDUL HALIM MU'ADZAM SHAH

PROGRAMME HANDBOOK
DIPLOMA IN
MECHATRONIC ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

CONTENT **PAGE**

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 student's employability skills to meet the needs of a more dynamic economy, which values innovation and productivity. Programmes 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 there event POLIMAS Department programmes and services publications and other Departments and Units Policies for further information.

2.0 VISION & MISSION

DEPARTMENT OF POLYTECHNIC EDUCATION

VISION

To be the Premier Industry-led TVET institution.

MISSION

1. To provide access to quality and recognised TVET programme.
2. To develop industry-led curriculum and enhance graduate readiness through coordinated industry engagement.
3. To produce balanced and enterprising graduate through dynamic and sustainable study programme.
4. To gain international recognition through collaboration and active participations in TVET community.

SULTAN ABDUL HALIM MU'ADZAM SHAH POLYTECHNIC

POLIMAS VISION:

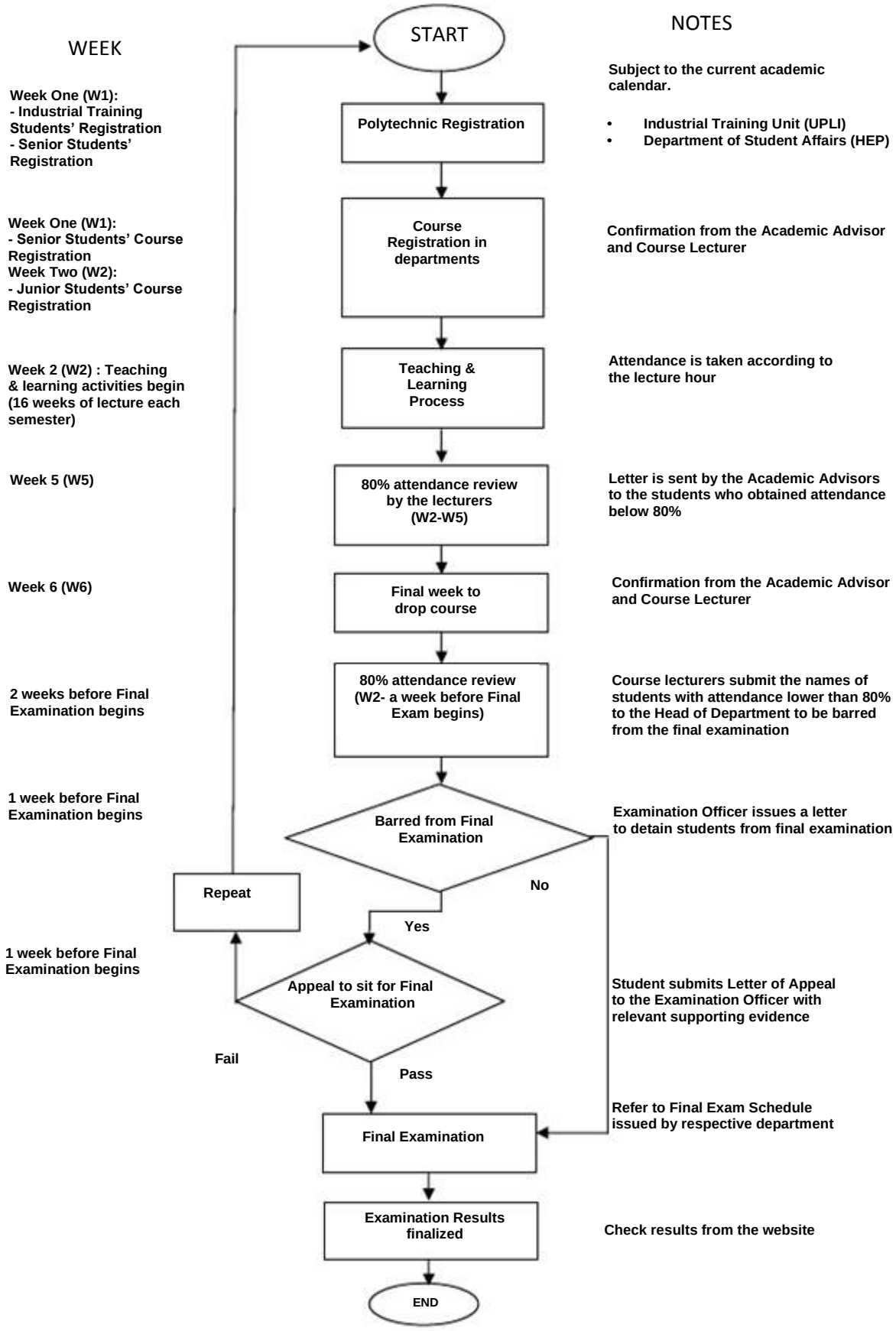
To be an excellent TVET institution in line with industrial needs.

POLIMAS MISSION:

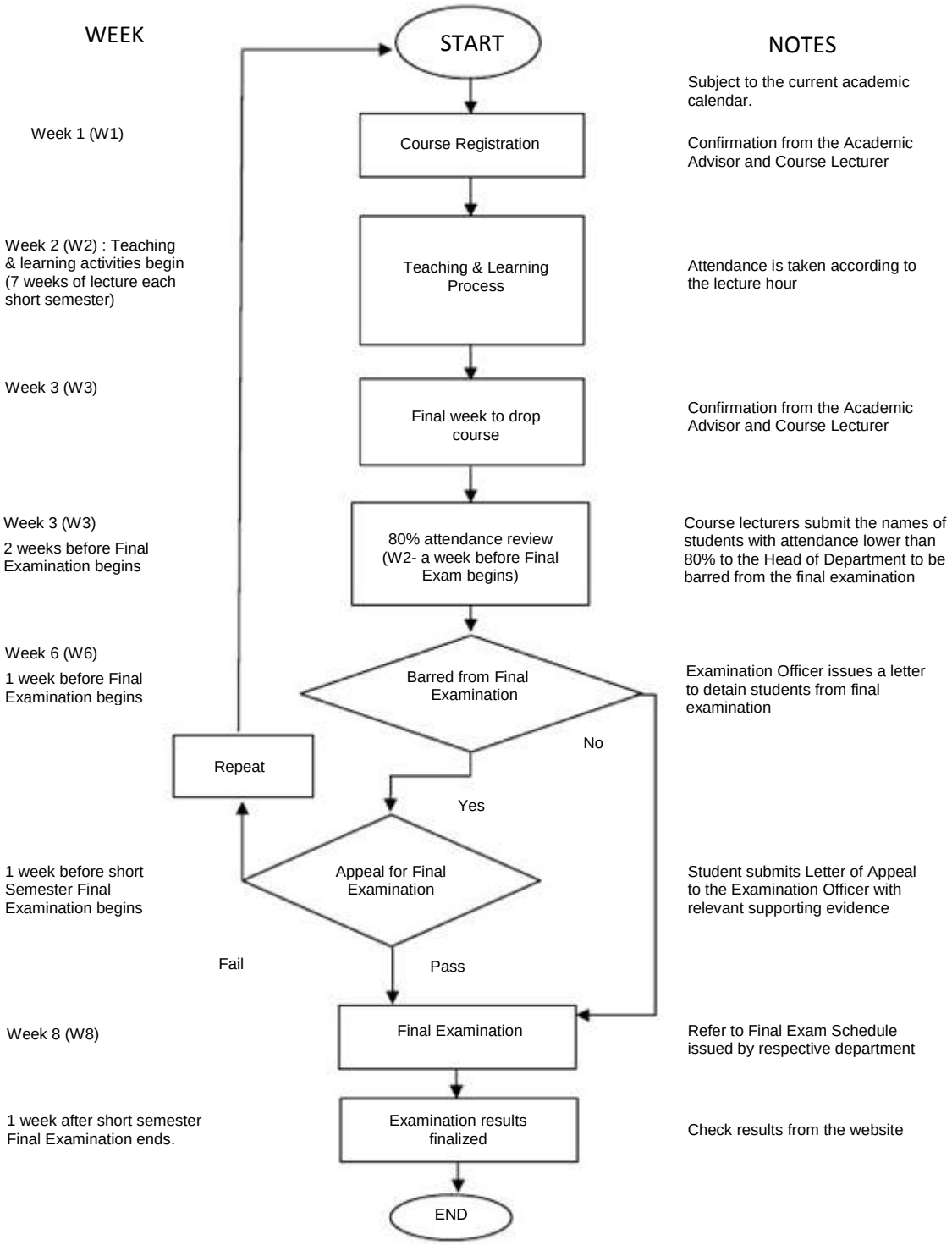
Provide access to quality and recognised TVET programmes to produce holistic, enterprising and competitive human capital in line with glocal industrial needs.

3.0 ACADEMIC FLOW CHART

ACADEMIC FLOW CHART FOR SEMESTER



ACADEMIC FLOW CHART FOR SHORT SEMESTER

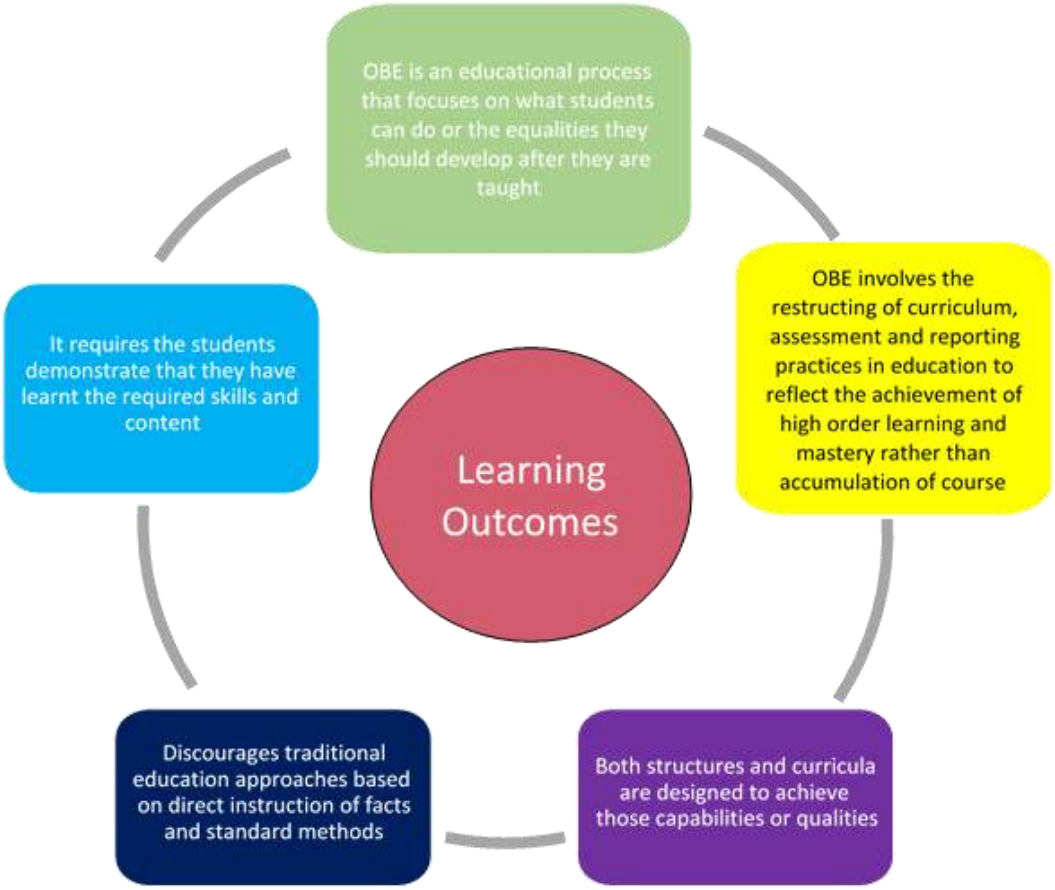


4.0 OUTCOME-BASED EDUCATION [OBE]

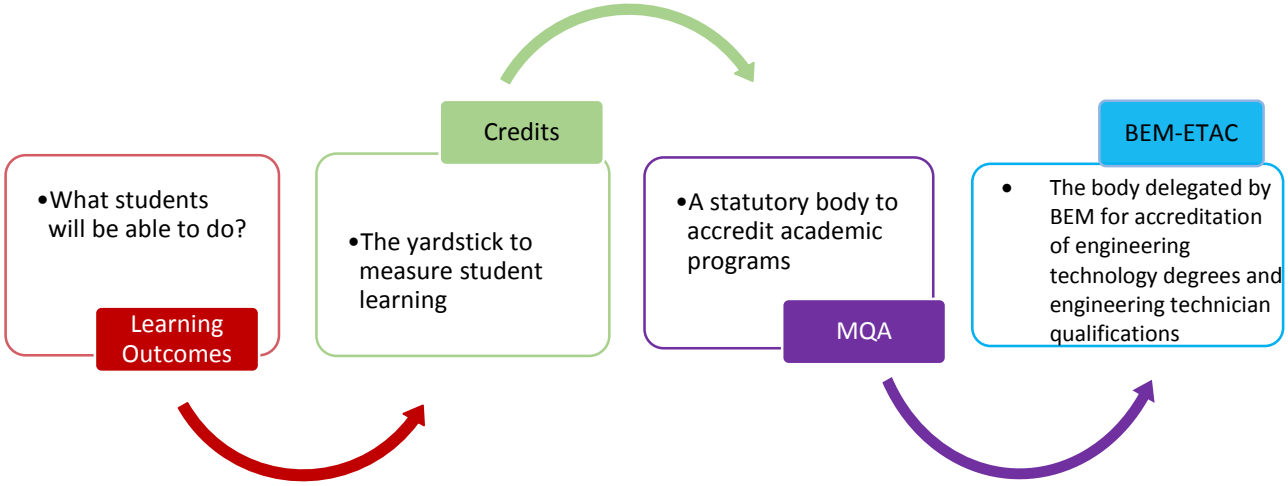
Outcome-based education (OBE) is an educational model for students to demonstrate their knowledge and able to perform according to the required outcomes. It is a student-centered approach that focuses on students' learning. It starts with a clear picture of what students should know, what they should 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 own 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.

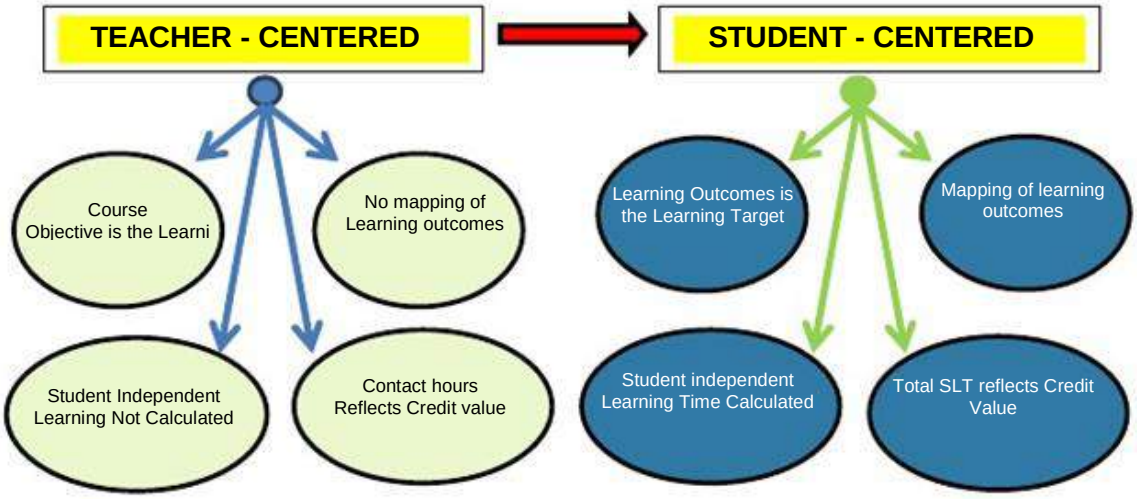
4.1 WHAT IS OUTCOME-BASED EDUCATION [OBE]



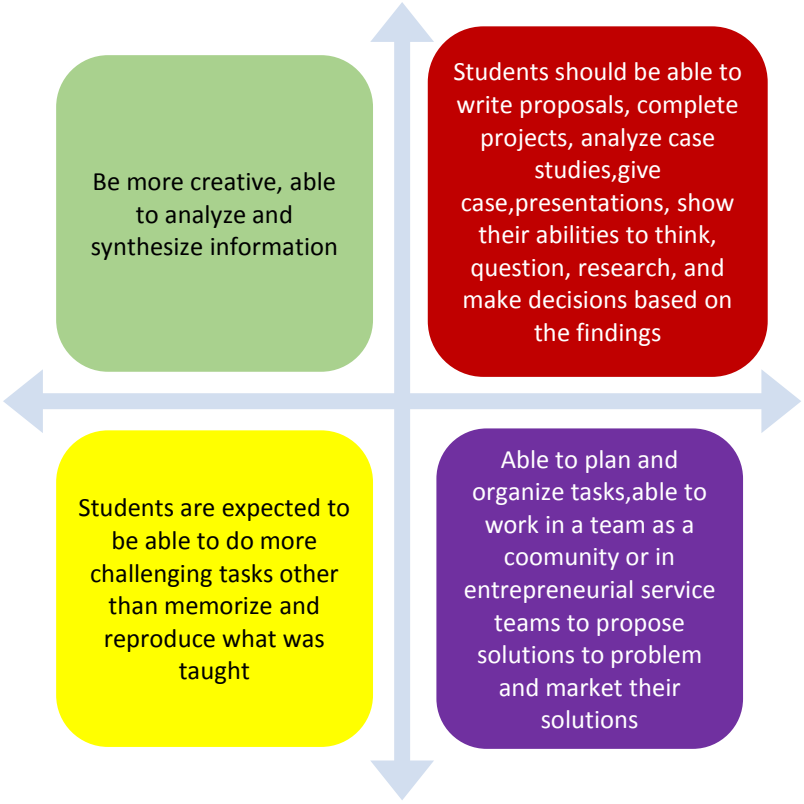
4.2 ACREDITATION PROCESS



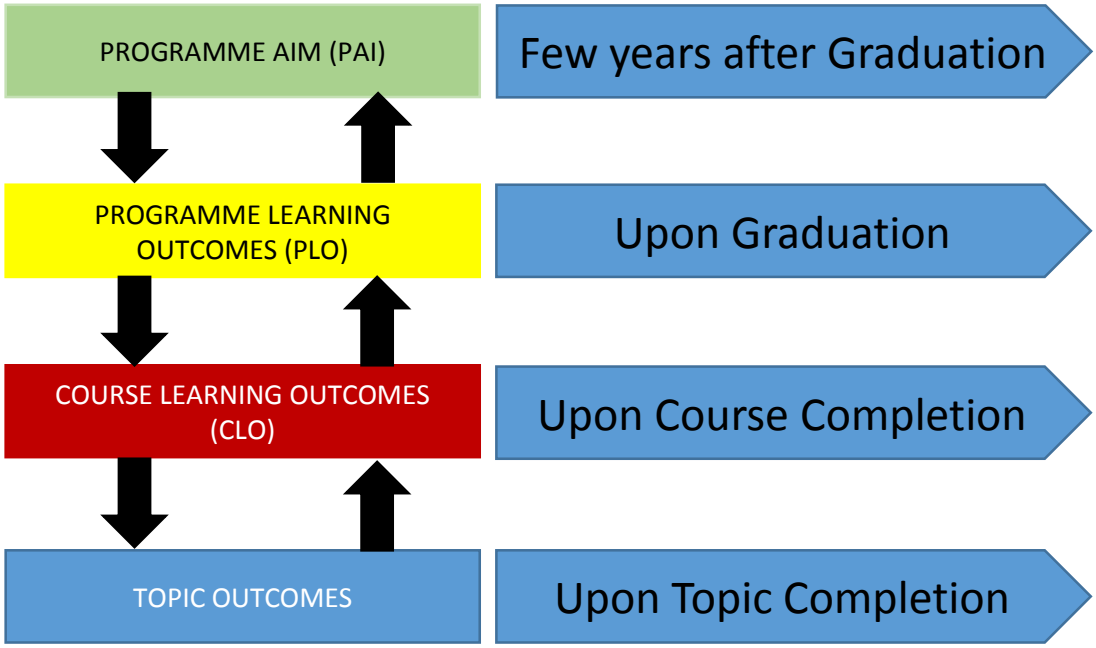
4.3 HOW DOES OBE AFFECT TEACHING-LEARNING



4.4 EXPECTATIONS ON STUDENTS



4.5 DIFFERENT LEVELS OF OBE



4.6 EXPECTED LEARNING DOMAIN

5.0 MANAGEMENT ORGANISATION CHART

6.0 MECHANICAL ENGINEERING DEPARTMENT

6.1 MECHANICAL ENGINEERING DEPARTMENT ORGANISATION CHART

KETUA JABATAN: **IR NIK AHMAD FARIS BIN NIK ABDULLAH**
PEN. KETUA JABATAN (Hal-Hal Pelajar): **NAZRI BIN AHMAD**
PEN. KETUA JABATAN (Akademik): **KAMSIDI @ ABD MALEK**

PROGRAM KEJ. MEKANIKAL LOJI (DJL)		
1	**Muhammad bin Abdullah (KP)**	DH44
2	Abd Khalid Bin Juraimi	DH52
3	Mohamad Pauzi Bin Mat Din	DH48
4	Mohd Fathurahman Bin Kamarudin	DH48
5	Airul Aznie Bin Mohd Sahari	DH44
6	Haslawati Binti Mohamad	DH44
7	Mohd. Fadzli Bin Othman	DH44
8	Muhammad Adli Bin Haron	DH44
9	Nazri Bin Ahmad	DH44
10	Norhasimah Binti Habibi	DH44
11	Rokayah Binti A. Rashid	DH44
12	Siti Salwa binti Samsuri	DH44
13	Rohaizan Bin Radzi	DH41
14	Mohd Nizam Bin Osman	DH42
15	Mohd Rafidi Bin A. Aziz	DH41
16	Mohd Radzi Bin Mohd Rajab	DH34
17	Wan Mahafez Bin Rosni	DH34

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

PROGRAM KEJ. MEKANIKAL PEMBUATAN (DTP)		
1	**Khairul Adly Bin Abd Wahib (KP)**	DH44
2	Normah Binti Cheman	DH52
3	Kamarulna Fuzi Bin Mad Kasim	DH48
4	Mohd. Nadzri Bin Lazim	DH48
5	Neza Nurulhuda Binti Nekmat	DH48
6	Syaiful Nizam Bin Ab. Rahim	DH48
7	Ahmad Asmadishah Bin Samsudin	DH44
8	Azijan Bin Murad	DH44
9	Mohd Hazri Bin Omar	DH44
10	Mohd Helmi Bin Abd Halim	DH44
11	Mohd Nazri Bin Abd Halim	DH44
12	Nur Faridah Hanim binti Mohd. Mokhtar	DH44
13	Syed Mohd. Fadly Bin Syed Hassan	DH44
14	Zainol Bin Hashim	DH44
15	Mohd Izham Bin A. Rahim	DH41
16	Nor Ruzzana Binti Abd Rahman	DH41
17	Zairini Binti Mohammad	DH41
18	Mohd Shakir Bin Mohammad Isa	DH42
19	Abdul Rahman Bin Mohd Khaidzir	DH34

PROGRAM KEJ. MEKANIKAL PLASTIK(DMK)		
1	**Azunaidi Bin Abdul Aziz (KP)**	DH44
2	Azimah Binti Ismail	DH48
3	Nor Mahani Binti Md Rasidi	DH48
4	Riduwan Bin Zakaria	DH48
5	Wan Aziz Bin Wan Abd Kadir	DH48
6	Ahmad Fahmi Bin Fadzil	DH44
7	Mahdir Bin Abdullah	DH44
8	Mohd Hairol Mizzam Bin Haris	DH44
9	Noor Ikhsan Bin Mohd Jamil	DH44
10	Suzana Binti Shafie	DH44
11	Azora Binti Jaafar	DH41
12	Jefri Bin Hanafiah	DH41
13	Ku Nasharudin Bin Ku Ismail	DH41
14	Mohd Alfathi Bin Md Udin	DH41
15	Siti Rohanah Binti Murad	DH41
16	Zulkifli Bin Hamzah	DH41
17	Muhammad Izzuddin Bin Mohd Yusoff	DH34
18	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 MECHATRONIC ENGINEERING LECTURERS

No.	Name	Designation	Contact No.	E-mail
1.	**SYUKRUL HASSANI BIN JAMALUDIN (KP)**	Head Of Programme	04-914 6100 ex 6226	syukrul@polimas.edu.my
2.	CHE MOHD AZMI BIN CHE IBRAHIM	Lecturer	04-914 6100 ex 6226	azmiman@gmail.com
3.	FAIZAL BIN AHMAD	Lecturer	04-914 6100 ex 6226	faizal_polimas78@yahoo.com
4.	MOHD YAHYA BIN SAAD	Lecturer	04-914 6100 ex 6226	mohdyahya829@gmail.com
5.	NORFIDAH BINTI ABDUL HAMID	Lecturer	04-914 6100 ex 6226	norfidah_68@yahoo.com
6.	MUFFILI BIN MAHADI	Lecturer	04-914 6100 ex 6226	muffili@polimas.edu.my
7.	AZAHAR BIN MOHD NOOR	Lecturer	04-914 6100 ex 6226	arbaex@gmail.com
8.	KAMSIDI @ ABD MALEK BIN SIDEK	Lecturer	04-914 6100 ex 6226	kamsidisidek@gmail.com
9.	LIZAWATI BINTI JAAFAR	Lecturer	04-914 6100 ex 6226	lizakbk8594@yahoo.com
10.	MOHD NAZRI BIN SAAD	Lecturer	04-914 6100 ex 6226	nazrisd@gmail.com
11.	MOHD. ZANIEL BIN MAHADZIR	Lecturer	04-914 6100 ex 6226	mohdzaniel@yahoo.com
12.	SHAIFUL ZAMRI BIN ABDUL SATTAR	Lecturer	04-914 6100 ex 6226	latiprazak73@gmail.com
13.	SHARIMAN BIN JOHARI	Lecturer	04-914 6100 ex 6226	street93@yahoo.com
14.	WAN NOR HARMAN BIN WAN YAHAYA	Lecturer	04-914 6100 ex 6226	wannorharman@gmail.com
15.	ABDUL LATIF BIN ABD RAZAK	Lecturer	04-914 6100 ex 6244	shaiful_zamri@yahoo.com
16.	SITI ARFAH BINTI HASHIM	Lecturer	04-914 6100 ex 6226	sitiarfahhashim@gmail.com
17.	SOFIAN BIN YUSOFF	Lecturer	04-914 6100 ex 6226	sofian_yusoff@yahoo.com.my
18.	MOHD ZULKIFLEE FAIZAL BIN SALEH	Lecturer	04-914 6100 ex 6226	Zulfaizal80@gmail.com

6.3 PROGRAMME DIPLOMA IN MECHATRONIC ENGINEERING - DEM

6.3.1 PROGRAMME OVERVIEW

SYNOPSIS

Diploma in Mechatronic Engineering at Polytechnic's Ministry of Education Malaysia is designed to cover the current wide discipline of mechatronic engineering with added specialization subjects in the field of mechatronic engineering. Core courses offered include Engineering Drawing, Mechatronic Workshop Practice, C Programming, Electrical Technology, Thermofluid, Engineeing Mechanics, Computer Aided Design, Electronic System, Strength of Material, Industrial Electronics, Digital System, Programmable Logic Controller, Control System, Pneumatic & Hydaulics, Power Electronics, Project, Industrial Automation, Power Tranmission Mechanism and Embedded System Application. Graduates are also required to complete one elective course at each semester 5 and 6 with a minimum total of four credits. Elective courses include Microprocessor, CADCAM, Industrial Robotics, Industrial Management, C++ Programming, Diagnosis & Troubleshooting for Mechanical Component, Tamadun Islam, Integrasi Malaysia and Computer Application. Common core courses included in the programme are Occupational Health & Safety, Engineering Mathematics, Engineering Science and Entrepreneurship. Compulsory courses offered include *Sains Teknologi dan Kejuruteraan Dalam Islam, Komunikasi dan Penyiaran Islam, Pengajian Malaysia, Nilai Masyarakat Malaysia,* Communicative English, Sukan, *Kelab/Persatuan, Asas Unit Beruniform dan Unit Beruniform* would provide students with interpersonal ability, attitude and professionalism towards their career.

6.3.2 JOB PROSPECT

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

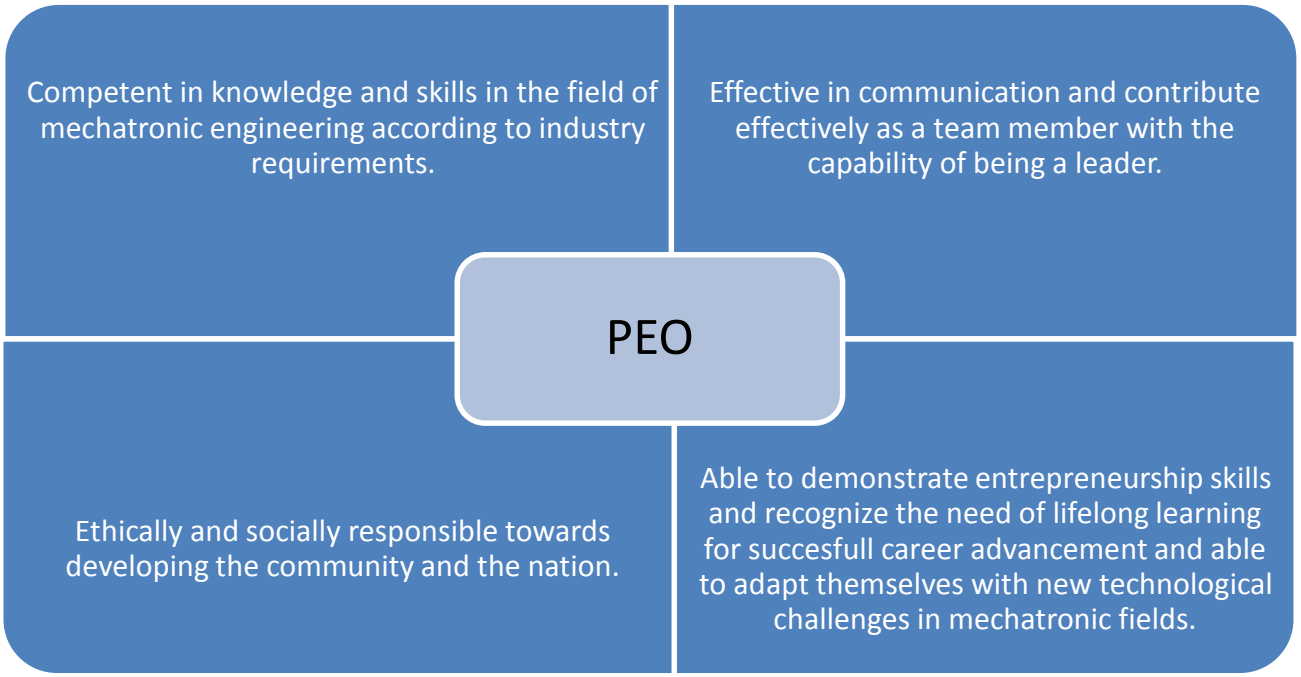
- Technical Assistant
- Production Technician
- Test & Reliabilty Technician
- Sales Engineer

- Application Engineer
- Controller System Supervisor
- Automation and Robotic Supervisor
- Mechanical and Electrical System Engineer

6.3.3 PROGRAMME AIMS

The diploma in Mechatronic Engineering graduates in Polytechnics, Ministry of Education will have the knowledge, technical skills, community service responsibilities and attitude to adapt themselves with new technological advancement and challenges in the mechatronic engineering field.

6.3.4 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)



6.3.5 PROGRAM LEARNING OUTCOMES (PLO)

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

PLO 1	• apply knowledge of mathematics, science, engineering fundamental and social sciences to well-defined mechatronic engineering procedures and practice.
PLO 2	• analyse well-defined mechatronic engineering problems with respect to operation and troubleshooting.
PLO 3	• conduct investigations and assist in the design of solutions for mechatronic engineering systems.
PLO 4	• apply appropriate techniques, resources and engineering tools to well-defined mechatronic engineering activities, with an awareness of limitations.
PLO 5	• demonstrate an awareness and consideration for societal, health, safety, legal and cultural issues and their consequent resposibilities.
PLO 6	• communicate effectively with the engineering community and society at large.
PLO 7	• function effectively as an individual and as a member in diverse technical teams.
PLO 8	• demonstrate an understanding of professional ethics, responsibilities and norms of engineering practices.
PLO 9	• demonstrate an awareness of management and entrepreneurship.
PLO 10	• demonstrate an understanding of the impact of engineering practices, taking into account the needs for sustainable development.
PLO 11	• recognise the needs for professional development and to engage in independent and lifelong learning.

6.3.6 PROGRAMME STURUCTURE FOR DIPLOMA IN MECHATRONIC ENGINEERING

PROGRAMME STRUCTURE FOR DIPLOMA IN MECHATRONIC ENGINEERING						
COMPONENTS	COURSE CODE	COURSE	CONTACT HOURS			CREDIT
			L	P	T	
SEMESTER 1						
Compulsory	DUB1012	Pengajian Malaysia	1	0	2	2
	DUE1012	Communicative English 1	1	0	2	2
	DRB1XX0	Asas Unit Beruniform	0	2	0	0
Common Core	DUW1012	Occupational Safety and Health	2	0	0	2
	DBM1013	Engineering Mathematics 1	2	0	0	3
	DBS1012	Engineering Science	2	1	0	2
Dicipline Core	DJJ1012	Engineering Drawing	1	2	0	2
	DJM1012	Mechatronic Workshop Practice 1	0	4	0	2
	DJM1022	C Programming	1	2	0	2
		TOTAL	27			17
SEMESTER 2						
Compulsory	DUA2012	Sains, Teknologi Dan Kejuruteraan Dalam Islam	1	0	2	2
	DUB2012	Nilai Masyarakat Malaysia	1	0	2	2
	DRS2XX1	Sukan	0	2	0	1
	DRB2XX1	Unit Beruniform 1	0	2	0	1
Common Core	DBM2013	Engineering Mathematics 2	2	0	2	3
Dicipline Core	DJJ2022	Electrical Technology	2	2	0	2
	DJM2012	Mechatronic Workshop Practice 2	0	4	0	2
	DJJ2062	Computer Aided Design 1	1	2	0	2
	DJM2032	Electronic System	2	1	0	2
	DJM2043	Thermofluid	3	1	0	3
		TOTAL	29			17
SEMESTER 3						
Compulsory	DUE3012	Communicative English 2	1	0	2	2
	DRK3XX2	Kelab/Persatuan	0	4	0	2
	DRB3XX2	Unit Beruniform 2	0	4	0	2
Dicipline Core	DJM3052	Industrial Electronics	1	2	0	2
	DJJ3053	Engineering Mechanics	2	2	0	3
	DJM3072	Programmable Logic Controller	1	2	0	2
	DJM3063	Digital System	2	2	0	3
	DJJ3103	Strength Of Materials	2	2	0	3
		TOTAL	29			17
SEMESTER 4						
Compulsory	DUE5012	Communicative English 3	1	0	2	2
Common Core	DBM3013	Engineering Mathematics 3	2	0	2	3
Dicipline Core	DJJ5123	Pneumatic & Hydraulics	2	2	0	3
	DJM5072	Control System	2	1	0	2
	DJM5103	Power Electronics	2	2	0	3
	DJJ5141	Project 1	0	2	0	1
Elective	DBC2012	Computer Application	1	1	0	2
		TOTAL	16			16

SEMESTER 5						
Compulsory	DUA6022	Komunikasi dan Penyiaran Islam	1	0	2	2
Common Core	DPB2012	Entrepreneurship	2	1	0	2
Dicipline Core	DJJ6143	Project 2	0	4	0	3
	DJM6113	Industrial Automation	2	2	0	3
	DJM6122	Power Transmission Mechanism	2	0	1	2
	DJM6132	Embedded System Application	1	2	0	2
Elective	DJJ6202	Diagnosis & Troubleshooting For Mechanical Component	1	2	0	2
	DJJ6192	Industrial Management	2	0	0	2
	DUA6042	Tamadun Islam	2	0	1	2
	DUA6012	Integrasi Malaysia	1	0	2	2
		TOTAL	24			16
SEMESTER 6						
	DUT40110	Industrial Training	0	0	0	10
		TOTAL				10

	Total Credit	%
i. Compulsory	15	16%
ii. Common Core	15	16%
iii. Dicipline Core	49	53%
iv. Elective	4	4%
v. Industrial Training	10	11%
TOTAL CREDIT	93	100%

	TOTAL	%
i. Lecture	50	38%
ii. Practical (Practical + Tutorial)	80	62%
iii. Contact Hours	130	-

PROGRAMME STRUCTURE FOR DIPLOMA IN MECHATRONIC ENGINEERING																													
COURSE CODE							COURSE	SEMESTER 1				SEMESTER 2				SEMESTER 3				SEMESTER 4				SEMESTER 5				S6
	L1	L2	L3	L4	L5	L6		L	P	T	C	L	P	T	C	L	P	T	C	L	P	T	C	L	P	T	C	
							COMPULSORY																						
DUB	1012						Pengajian Malaysia	1	0	2	2																		
DUB		2012					Nilai Masyarakat Malaysia**					1	0	2	2														
DUA		2012					Sains, Teknologi dan Kejuruteraan Islam*					1	0	2	2														
DUA						6022	Komunikasi dan Penyiaran Islam																			1	0	2	2	
DUE	1012		3012		5012		Communicative English 1, 2 & 3	1	0	2	2					1	0	2	2	1	0	2	2						
DRS		2XX1					Sukan					0	2	0	1														
DRK			3XX2				Kelab/Persatuan									0	4	0	2										
DRB	1XX0						Asas Unit Beruniform	0	2	0	0																		
DRB		2XX1					Unit Beruniform 1					0	2	0	1														
DRB			3XX2				Unit Beruniform 2									0	4	0	2										
							TOTAL	**2**	**2**	**4**	**4**	**2**	**4**	**4**	**3**	**1**	**8**	**2**	**4**	**1**	**0**	**2**	**2**	**1**	**0**	**2**	**2**		
							COMMON CORE																						
DUW	1012						Occupational, Safety and Health	2	0	0	2																		
DBM	1013	2013	3013				Engineering Mathematics 1,2 & 3	2	0	2	3	2	0	2	3					2	0	2	3						
DBS	1012						Engineering Science	2	1	0	2																		
DPB		2012					Entrepreneurship																	2	1	0	2		
							TOTAL	**6**	**1**	**2**	**7**	**2**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**3**	**2**	**1**	**0**	**2**		
							DISCIPLINE CORE																						
DJJ	1012						Engineering Drawing	1	2	0	2																		
DJJ		2062					Computer Aided Design					1	2	0	2														
DJJ		2022					Electrical Technology					2	2	0	2														
DJJ			3053				Engineering Mechanics									2	2	0	3										
DJJ			3103				Strength Of Materials									2	2	0	3										
DJJ					5123		Pneumatic & Hydraulics													2	2	0	3						
DJJ					5141	6143	Project 1,2													0	2	0	1	0	4	0	3		
							TOTAL	**1**	**2**	**0**	**2**	**3**	**4**	**0**	**4**	**4**	**4**	**0**	**6**	**2**	**4**	**0**	**4**	**0**	**4**	**0**	**3**		
							SPECIALIZED CORE CORE																						
DJM	1012	2012					Mechatronic Workshop Practice 1,2	0	4	0	2	0	4	0	2														
DJM	1022						C Programming	1	2	0	2																		
DJM		2032					Electronic System					2	1	0	2														
DJM		2043					Thermofluids					3	1	0	3														
DJM			3052				Industrial Electronics									1	2	0	2										
DJM			3072				Programmable Logic Controller									1	2	0	2										
DJM			3063				Digital System									2	2	0	3										
DJM					5092		Control System													2	1	0	2						
DJM					5103		Power Electronics													2	2	0	3						
DJM						6113	Industrial Automation																	2	2	0	3		
DJM						6122	Power Transmission Mechanism																	2	0	1	2		
DJM						6132	Embedded System Application																	1	2	0	2		
							TOTAL	**1**	**6**	**0**	**4**	**5**	**6**	**0**	**7**	**4**	**6**	**0**	**7**	**4**	**3**	**0**	**5**	**5**	**4**	**1**	**7**		
							ELECTIVE																						
DJF					5032		CADCAM																	1	2	0	2		
DJF					5042		Industrial Robotics													2	0	0	2						
DJM					5082		Microprocessor													2	1	0	2						
DJJ						6202	Diagnosis & Troubleshooting For Mechanical Component																	1	2	0	2		
DJJ						6192	Industrial Management																	2	0	0	2		
DUA						6042	Tamadun Islam																	2	0	1	2		
DUA						6012	Integrasi Malaysia																	1	0	2	2		
DBC		2012					Computer Application													1	0	2	2						
							Students are required to take a minimum of four credits of elective courses.																						
							TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**2**	**1**	**2**	**0**	**2**		
							GRAND TOTAL	**10**	**11**	**6**	**17**	**12**	**14**	**6**	**17**	**9**	**18**	**2**	**17**	**10**	**7**	**4**	**16**	**9**	**9**	**3**	**16**		
							CONTACT HOURS/CREDIT	**27**			**17**	**32**			**17**	**29**			**17**	**21**			**16**	**21**			**16**	**10**	
							TOTAL CREDIT	**93**																					

DUT40110 INDUSTRIAL TRAINING

Legend / Notes:

L1 - L6 : Level 1 - Level 6
L : Lecture, P : Practical / Lab
T : Tutorial, C : Credit
*For Muslim Students
**For Non Muslim Students

For Co-curriculum,
1. Path 1 : Sport and Club
Path 2 : Uniform Unit

Uniform Unit (Students who choose Uniform Unit are required to complete 5 modules for commisioning).
1. DRB1XX0 (Asas Unit Beruniform) is a prerequisite to DRB2XX1 (Unit Beruniform 1).
2. DRB2XX1 and DRB3XX2 are graded.
3. DRB5XX0 and DRB6XX0 are optional, non-graded, audited courses with full assessment. Upon completion of DRB6XX0, students are entitled for commisioning.

For a list of Course Inventory, please refer to www.cidos.edu.my

6.3.7 SYNOPSIS AND COURSE LEARNING OUTCOMES (CLO)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
1.	**DUB1012 PENGAJIAN MALAYSIA**	**PENGAJIAN MALAYSIA** memupuk penghayatan ke arah melahirkan generasi yang cintakan negara. Kursus ini juga dapat mendidik kelompok masyarakat yang mempunyai daya juang yang tinggi dan mampu menghadapi cabaran di peringkat antarabangsa. Kursus ini memberi penghayatan tentang sejarah dan politik, perlembagaan Malaysia, kemasyarakatan dan perpaduan, pembangunan negara dan isu-isu keprihatinan negara. Objektif kursus ini adalah untuk melahirkan warganegara yang setia dan cintakan negara, berwawasan serta bangga menjadi rakyat Malaysia. KREDIT: 2 PRASYARAT: TIADA	1. Menerangkan dengan baik sejarah bangsa dan negara. (C2, LD1) 2. Menjelaskan Perlembagaan Malaysia dan sistem pemerintahan negara. (C2, LD1) 3. Melaksanakan aktiviti berkaitan kenegaraan ke arah peningkatan patriotisme pelajar. (C3, LD1 : A3,LD6)
	DUE1012 COMMUNICATIVE ENGLISH 1	**COMMUNICATIVE ENGLISH 1** focuses on developing students' speaking skills to enable them to communicate effectively and confidently in group discussions and in a variety of social interactions. It is designed to provide students with appropriate reading skills to comprehend a variety of texts. It is also aimed to equip students with effective presentation skills. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Apply appropriate language and communication skills in discussions and conversations. (C3) 2. Apply effective listening skills to demonstrate comprehension of audio recordings in a variety of situations. (C3) 3. Comprehend a variety of reading texts by applying effective reading skills. (C2) 4. Write in response to a stimulus using appropriate language. (C3) 5. Deliver an effective presentation using appropriate visual aids, verbal and non-verbal communication skills. (C3, A3)
	DUW1012 OCCUPATIONAL, SAFETY AND HEALTH	**OCCUPATIONAL SAFETY AND HEALTH** course is designed to impart understanding of the self-regulatory concepts and provisions under the Occupational Safety & Health Act (OSHA). This course presents the responsibilities of employers and employees in implementing and complying with the safety procedures at work. This course provides an understanding of the key issues in OSH management, incident prevention, Emergency Preparedness and Response (EPR), fire safety, occupational first aid, Hazard Identification, Risk Assessment and	1. Identify the OSH legislation and its compliance in Malaysia. (C2, LD1) 2. Explain briefly incident hazards, risks and safe work practices in order to maintain health and safe work environment. (C2, LD1) 3. Discuss cooperatively in responding to an accident action at workplace. (C3,LD1; A2,LD4) 4. Adhere to the safety procedures in respective fields. (A3, LD8)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
		Risk Control (HIRARC) and guide the students gradually into this multi-disciplinary science. CREDIT(S): 2 PRE-REQUISITE(S): NONE	
	DBM1013 ENGINEERING MATHEMATICS 1	**ENGINEERING MATHEMATICS 1** expose students to the basic algebra including perform partial fractions. This course also exposes the concept of trigonometry and the method to solve trigonometry problems by using basic identities, compound angle and double angle formulae. Students also will be introduced to the theory of complex number and matrices method to solve simultaneous equation. This course also introduces students to concept of vector and scalar. CREDIT(S): 3 PRE-REQUISITE(S): NONE	1. Identify mathematical methods in solving the mathematical problems. (C2, LD1) 2. Solve the mathematical problems by using appropriate techniques and solutions. (C3, LD1) 3. Practice mathematical knowledge and skills in different mathematics problem. (C3, LD1)
	DBS1012 ENGINEERING SCIENCE	**ENGINEERING SCIENCE** is an applied science with theoretical concepts and practical learning sessions that can be applied in the engineering fields. This course focuses on the Physical Quantities, Measurement, Linear Motion, Force, Work, Energy, Power, Solid, Fluid, Temperature and Heat. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Solve the basic engineering science problems by using related concept. (C3, LD1) 2. Organise an appropriate experiments to prove related physic principles. (P3, LD2) 3. Apply related physic principles in various situations to enhance knowledge. (C3, LD1)
	DJJ1012 ENGINEERING DRAWING	The **ENGINEERING DRAWING** course provides the students with the fundamentals of engineering drawings. It emphasizes on the practical knowledge of drawing instruments and drawing techniques that will be applied in workshop practical activities and in Computer Aided Design courses. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Apply the basic fundamentals of engineering drawing in comply to related problems. (C3, PLO1) 2. Construct engineering drawings according to the required standards. (P4, PLO 4) 3. Demonstrate the understanding of engineering norms and practices in engineering drawing. (A3, PLO 8)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
	DJM1012 **MECHATRONIC WORKSHOP PRACTICE 1**	**MECHANICAL WORKSHOP PRACTICE 1** exposes the students to basic works in an engineering workshop with emphasis on safety practices. Student are exposed to fitting, welding and machining. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Practice correct techniques in handling fitting, machining and welding equipments. (P3) 2. Perform fitting, machining and welding works according to Standard Operation Procedure (SOP). (P4) 3. Demonstrate the understanding and awareness of safety procedure in mechanical workshops according to the workshop safety regulations. (A3)
	DJM1022 **C PROGRAMMING**	**C PROGRAMMING** course provides an introduction to pragramme design and development. Student will learn to design, code, debug, test and document well structured programs based on technical and engineering problem. Topic covered: software development principle, programming language basic, data types, input and output operation, the use of selection, loops, arrays and function structure. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Apply knowledge of basic concepts of C programming to solve given problem using an appropriate data type. (C3) 2. Construct a high level programming language in solving variety engineering and scientific problems. 3. Demonstrate problem solving skills an assigned project based on programming. (A3)
2.	**DUA2012** **SAINS, TEKNOLOGI DAN KEJURUTERAAN ISLAM**	**SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM** memberi pengetahuan tentang konsep Islam sebagai al-Din dan seterusnya membincangkan konsep sains, teknologi dan kejuruteraan dalam Islam serta impaknya, pencapaiannya dalam tamadun Islam, prinsip serta peranan syariah dan etika Islam, peranan kaedah fiqh serta aplikasinya. KREDIT: 2 PRASYARAT: TIADA	1. Menghuraikan konsep Islam sebagai cara hidup. (C2, LD1 : P2, LD2) 2. Menjelaskan konsep sains, teknologi dan kejuruteraan dalam Islam. (C2, LD1) 3. Membincangkan prinsip syariah dan kaedah fiqh dalam sains, teknologi dan kejuruteraan. (C3, LD1 : A3, LD6)
	DUB2012 **NILAI MASYARAKAT MALAYSIA**	**NILAI MASYARAKAT MALAYSIA** membincangkan aspek sejarah pembentukan masyarakat Malaysia, nilai-nilai agama serta adat resam dan budaya masyarakat majmuk. Selain itu, pelajar diberi kefahaman mengenai tanggungjawab individu dalam kehidupan dan cabaran-cabaran dalam membangunkan masyarakat Malaysia. KREDIT: 2 PRASYARAT: TIADA	1. Menerangkan sejarah pembentukan masyarakat dan nilai agama di Malaysia. (C2 : LD1) 2. Menghubung kait tanggungjawab individu dalam kehidupan masyarakat dan negara. (C3 : LD1, A2 : LD5) 3. Membincangkan cabaran-cabaran dalam membangunkan masyarakat Malaysia. (C3 : LD1, A3 : LD6)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
	DBM2013 ENGINEERING MATHEMATICS 2	**ENGINEERING MATHEMATICS 2** exposes students to the basic laws of exponents and logarithms. This course also introduces the basic rules of differentiation concept to solve problems that relate maximum, minimum and calculate the rates of changes. This course also discuss integration concept in order to strengthen student knowledge for solving area and volume bounded region problems. In addition, students also will learn application of both techniques of differentiation and integration. CREDIT(S): 3 PRE-REQUISITE(S): NONE	1. Solve the mathematical problems by using appropriate mathematical techniques and solutions. (C3, LD1) 2. Show the solution for differentiation and integration problem by using appropriate method. (C3, LD1) 3. Practice mathematical knowledge and skills in different mathematics problem. (C3, LD1)
	DJJ2022 ELECTRICAL TECHNOLOGY	**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 Technology. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Explain the principles of electrical circuits, electromagnetism, transformers and electrical machines to solve related problems. (C4,PLO2) 2. Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4,PLO4) 3. Demonstrate continuous learning and information management skills while engaging in independent acquisition of new knowledge and skills in laboratory report. (A3,PLO11)
	DJJ2062 COMPUTER AIDED DESIGN 1	**COMPUTER AIDED DESIGN 1** provides a comprehensive introduction to Computer-Aided Design software. It is an introductory level where the students will learn to navigate and use the software to create two-dimensional design in engineering. Students shall be able to demonstrate competency in using some standard available features of a CAD application to create and manipulate objects or elements and to modify them. They should be able to change object properties and to	1. Apply the fundamental features of CAD software in producing engineering drawing. (C3, PLO 1) 2. Construct 2D drawing using fundamental features of CAD software. (P4, PLO 4) 3. Demonstrate continuous learning and information management skill while engaging in independent acquisition of new knowledge and skill to solve assigned task. (A3, PLO 11)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
		undertake printing or plotting activity associated with the delivery outputs. In addition, students are required to use some advanced features of CAD software, such as inserting objects from other applications. CREDIT(S): 2 PRE-REQUISITE(S): NONE	
	DJM2012 MECHATRONIC WORKSHOP PRACTICE 2	**MECHATRONIC WORKSHOP PRACTICE 2** enhances knowledge on CNC and EDM and also enables student to carry out related task scopes. This course also emphasizes on how to operate CNC and EDM machines properly. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Operate the CNC and EDM machiness according to prescribed procedures and manual. (P3) 2. Perform CNC and EDM machine programming. (P4) 3. Demonstrate awareness of safety / health related machine programs to complete certain projects in practical work procedure and practices. (A3)
	DJM2032 ELCTRONIC SYSTEM	**ELCTRONIC SYSTEM** covers knowledge on basic of electronic concepts and digital systems. The course emphasizes on the electrical characteristics and properties of semiconductor materials, operation of linear DC power sipplies, amplifier circuits and sinusoidal wave oscillator circuits. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Analyze the characteristics and properties of semiconductor materials. (C4) 2. Construct electronic circuit based on schematic diagrams. (P4) 3. Demonstrate understanding of electronic circuit. (A3)
	DJM2043 THERMOFLUIDS	**THERMOFLUIDS** provides students to the basic concepts of thermodynamics and fluids mechanics into one integrated course. This course emphasizes on concepts of conceptual principles in thermofluids, fluids applications, properties of pure substances, first and second law of thermodynamics. This course also provides knowledge and understanding of theory, concepts and application of principles to solve problems related to thermofluids processes. CREDIT(S): 3 PRE-REQUISITE(S): NONE	1. Solve problem correctlyrelated thermodynamics and fluid mechanics with approriate formula and theories. (C3) 2. Study the theory of thermofluids to solve related engineering problems in group. (A3) 3. Conduct experiment on thermofluids application. (P4)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
3.	**DUE3012 COMMUNICATIVE ENGLISH 2**	**COMMUNICATIVE ENGLISH 2** emphasises the skills required at the workplace to describe products or services as well as processes or procedures. It also focuses on the skills to give and respond to instructions. This course will also enable students to make and reply to enquiries and complaints. CREDIT(S): 2 PRE-REQUISITE(S): DUE1012 COMMUNICATIVE ENGLISH 1	1. Describe products or services related to their field of studies using appropriate language. (C3, A3) 2. Transfer information of a process or procedure accurately from linear to non-linear form and vice versa. (C3) 3. Listen and respond to enquiries using appropriate language. (C3) 4. Make and respond to complaints using appropriate language. (C3)
	DJM3052 INDUSTRIAL ELECTRONIC	**INDUSTRIAL ELECTRONIC** provides exposure to mechanical, electrical and electronic devices. This course discusses structures of circuits, switches, relays, solenoids, sensors and telemetry systems. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Apply the mechatronic devices, switches, relays, solenoid, electronic control devices, sensor and telemetry system in industrial application. (C3) 2. Construct the circuit of relays and sensors according to operational principle. (P4) 3. Demonstrate the understanding of mechatronic devices. (A3)
	DJJ3053 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. Analyze problems related to statics and dynamics based on the concept and principles of engineering mechanics and data from the experiments in relation to the theoretical aspects. (C4, PLO2) 2. Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO4) 3. Demonstrate ability to work in team to complete assigned tasks during practical work sessions. (A3, PLO7)
	DJM3072 PROGRAMMABLE LOGIC CONTROLLER	**PROGRAMMABLE LOGIC CONTROLLER (PLC)** provides knowledge regarding the concept and basic principle of automation systems as well as PLC. This course emphasizes on the use, design process, programming and maintenance method of automation systems as well as PLC. This course also provides knowledge and skill training to construct automation systems based on the use of PLC systems. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Organize variant type of automation system achieveable with proper PLC selection, maintenance and programming. (C5) 2. Develop the PLC program based on the automation requirements. (P4) 3. Systematize troubleshooting and maintenance of PLC system. (A4)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
	DJJ3103 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): 3 PRE-REQUISITE(S): NONE	1. Analyze problems related to strength of materials and data from the experiments in relation to the theoretical aspects. (C4, PLO2) 2. Organize appropriately experiments in groups according to the Standard Operating Procedures. (P4, PLO4) 3. Demonstrate ability to work in team to complete assigned tasks during practical work sessions. (A3, PLO7)
	DJM3063 DIGITAL SYSTEM	**DIGITAL SYSTEM** provides the knowledge on the concepts and basic principles of digital circuits used in computer systems. This course focuses on sequential logic circuits, counters and registers. This course also covers the topics on the methods of signal conversion in electronic circuits. CREDIT(S): 3 PRE-REQUISITE(S): NONE	1. Distinguish the characteristics and operations of various digital circuits. (C4) 2. Contruct digital circuits based on schematic diagrams. (P4) 3. Demonstrate the role of digital circuits in real world applications. (A3)
4.	**DUE5012 COMMUNICATIVE ENGLISH 3**	**COMMUNICATIVE ENGLISH 3** aims to develop the necessary skills in students to analyse and interpret graphs and charts from data collected as well as job hunting mechanics. Students will learn to present data through the use of graphs and charts. Students will learn the process of job hunting which includes job search strategies and making enquiries. They will also learn to write resumes and cover letters. The students will develop skills to introduce themselves, highlight their strengths and abilities, present ideas, express opinions and respond appropriately during job interviews. CREDIT(S): 2 PRE-REQUISITE(S): DUE3012 COMMUNICATIVE ENGLISH 2	1. Describe and analyze information contained in graphs and charts clearly and accurately based on a mini project. (C4, A3) 2. Write an effective resume and a supporting cover letter for a relevant job opening. (C3) 3. Handle a job interview effectively and confidently. (C3)
	DBM3023 ELECTRICAL ENGINEERING MATHEMATICS 3	**ELECTRICAL 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	1. Solve the mathematical problems by using appropriate mathematical technique and solution. (C3, LD1) 2. Show the solution for statistical and probability problems and Laplace Transformation by using

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
		Elimination method, LU Decomposition using Doolitle and Crout methods, polynomial problems using Simple Fixed Point Iteration methods and Newton Raphson method. In additional, the course also discuss Laplace Transform by using the table of Laplace. In order to strengthen the studenns in solving advanced engineering problems, ordinary Differential Equation (ODE) is also included. CREDIT(S): 3 PRE-REQUISITE(S): DBM2013 ENGINEERING MATHEMATICS 2	related mathematical methods. (C3, LD1) 3. Practice mathematical knowledge and skills in different mathematical problem. (C3, LD1)
	DJJ5123 PNEUMATIC & HYDRAULICS	**PNEUMATICS & 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. (C4,PLO2) 2. Construct pneumatic, electro-pneumatic and hydraulic circuit according to assigned tasks. (C5, PLO3 & P4, PLO4) 3. Demonstrate understanding of engineering norm and practices in pneumatics and hydraulics during practical work sessions. (A3, PLO8)
	DJM5092 CONTROL SYSTEM	**CONTROL SYSTEM** provides knowledge regarding various concepts of feedback control system and the required mathematical methods. The emphasis of the course is on control action, pneumatic control, hydraulic control and frequency response. This course also provides knowledge in analyzing and designing stability and performance test. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Analyze the basic concept of control system including controller principle, transfer function and stability. (C4) 2. Perform stability and performance analysis on the control system based on stability investigation method. (P4) 3. Demonstrate the ability to work in team for completing assigned task during practical work sessions. (A3)
	DJM5103 POWER ELECTRONICS	**POWER ELECTRONICS** provides knowledge on widely used motor control concepts especially those in high power industry. The course focuses on basic concepts of Power Electronic and applications with DC and AC motor covering construction of DC and AC electrical drives. CREDIT(S): 3 PRE-REQUISITE(S): NONE	1. Distinguish the characteristics and operations of various power electronic devices, AC & DC converters and electrical drives. (C4) 2. Construct power electronic converter and electrical drive circuits based on schematic diagram. (P4) 3. Demonstrate the understanding and awareness of safety procedure in practical work. (A3)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
	DJJ5141 **PROJECT 1**	**PROJECT 1** provides students with solid foundation on knowledge and skills in preparing project proposal, writing and presentation of proposal. CREDIT(S): 1 PRE-REQUISITE(S): NONE	1. Organize research or project systematically. (C5) 2. Demonstrate good communication skill of oral presentation in group. (A3) 3. Demonstrate continuous learning and information management skills while engaging in independent acquisition of new knowledge and skill to develop a project. (A3)
	DBC2012 **COMPUTER APPLICATION**	COMPUTER APPLICATION exposes students to different packages of applications software such as word processor, spreadsheet, database, presentation, project management and diagramming. This course mainly emphasizes on the practical aspects of using applications software. As the result, students will have opportunity to manipulate and create a variety of techniques and styles to produce documents. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Apply computer application knowledge and skills to perform related task. (C3, LD1) 2. Complete appropriate lab work task by using suitable application software to enhance computer knowledge and skills. (P4, LD2) 3. Organise a complete project report by using appropriate application software. (P4, LD2)
5.	**DUA6022** **KOMUNIKASI DAN PENYIARAN ISLAM**	**KOMUNIKASI DAN PENYIARAN ISLAM** memfokuskan kepada penguasaan konsep, kemahiran komunikasi dan penyiaran islam bagi meningkatkan kefahaman pelajar secara holistik terhadap kursus ini. KREDIT: 2 PRASYARAT: TIADA	1. Menjelaskan konsep, bentuk komunikasi dan hubungannya dalam Islam. (C2 : LD1) 2. Menunjukkan kemahiran pengurusan komunikasi dalam bidang penyiaran Islam. (C3, A4 : LD1, LD5) 3. Menghubung kait isu-isu semasa dalam komunikasi dan penyiaran Islam. (C3, A3 : LD1, LD6)
	DPB2012 **ENTREPRENEURSHIP**	**ENTREPRENEURSHIP** focuses the principles and concept of entrepreneurship. This course concentrates on the systematic methods of getting business ideas. This course also prepares students on conducting online business using social media marketing. It also emphasizes a preparation of business plan and developing their entrepreneurial skills. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Explain clearly the concept of entrepreneurship and process of developing an effective business.(C2, LD1) 2. Prepare completely a business plan according to standard format. (P2,LD2) 3. Build the online business presence using the social media marketing. (P3,LD2) (A4, LD7)
	DJJ6143 **PROJECT 2**	**PROJECT 2** introduces the students to the concepts of conducting a design or case study. The students select a project, list the project's needs, the	1. Develop creative solution to solve the problems in the project design or case study. (C5)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
		processes involved, cost estimation, project schedule by applying appropriate methodology in the project planning. It also involves project implementation, project report and presentation. CREDIT(S): 3 PRE-REQUISITE(S): DJJ5141 PROJECT 1	2. Organize the selected design or case study based on the project planning. (P5) 3. Demonstrate good communication skills of presentation in group. (A3) 4. Demonstrate ability to lead a team to complete assigned project during practical work sessions. (A3) 5. Demonstrate awareness of management, business practices and entrepreneurship related to product of project. (A3) 6. Demonstrate awareness of social responsibility in practical work procedure and practices. (A3)
	DJM6113 INDUSTRIAL AUTOMATION	The **INDUSTRIAL AUTOMATION** explains advantages and disadvantages of using automtion along with a description of the classification systems. It also students an understanding of modern industrial automation technology. CREDIT(S): 3 PRE-REQUISITE(S): DJM3072 PROGRAMMABLE LOGIC CONTROLLER	1. Apply the fundamental concept of industrial automation including the mechanical system, actuator control and sensory device. (C3) 2. Develop control structure for industrial automation system based on process specification. (P4) 3. Demonstrate good communication skills in group on assigned topic. (A3)
	DJM6122 POWER TRANSMISSION MECHANISM	**POWER TRANSMISSION MECHANISM** introduces and reveals element of mechanism movement power and commonly used converter common use. This module includes chain, bearing, gear, cam, followers, coupling, clutch and brake. This module gives knowledge on the working principle of elements power tranmission mechanism. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Classify types of power tranmission mechanism used in machines.(C3) 2. Analyze the physical dimensions and power tranmission mechanism based on utilization and design of machine. (C4) 3. Demonstrate the understanding of engineering norms and practices in solving power tranmission mechanism problem. (A3)
	DJM6132 EMBEDDED SYSTEM APPLICATION	**EMBEDDED SYSTEM APPLICATION** covers the basic concept and application of microcontroller system. Students will be able to learn software and hardware development on microcontroller development system and understand how to interface. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Explain the theory and basic architecture of microcontroller. (C2) 2. Write program using C language. (A2). 3 Design microcontroller external devices interface. (P5)

SEM	COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO)
	DJF5032 CAD/CAM	**CAD/CAM** explains the theory and basic of coding languages, structures and the use of CAD/CAM systems for generating and verifying tool path. The students will learn how to use CAD/CAM software to design an object, produce a code and simulate machining. Besides, students will also be exposed to modern manufacturing system as well as Flexible Manufacturing System (FMS), Computer Integrated Manufacturing (CIM) and Reverse Engineering (RE). CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Explain briefly CAD, NC, CAM and various type of modern manufacturing system. (C4, PLO2) 2. Create NC code for particular product design by utilizing related CAD/CAM simulation software. (P7, PLO4) 3 Demonstrate continous learning and information management skill while engaging in independent acquisition of new knowledge and skill to develop a project. (A3, PLO11)
6.	DUT40110 INDUSTRIAL TRAINING	**INDUSTRIAL TRAINING** covers the basic knowledge and skills of the internship which students will undergo during the fourth semester of the Diploma program. This course provides exposure and experience to students in terms of technology literacy, effective communication, development of human capital, policies, procedures and regulations, professional perspective and reporting. This course will build enthusiasm and a proactive attitude in students and hence boost their confidence to become excellent trainees. CREDIT(S) : 10 PREREQUISITE : NONE	1. Apply the technology studied 2. Practice effective communication 3. Demonstrate the development of human capital 4. Professionally comply with policies, procedures and rules of the organization 5. Produce report

7.0 SPORTS & CO-CURRICULUM UNIT

The unit is responsible to oversee the implementation the sport and co-curriculum activities to fulfil their requirement for them to score a pass in co-curriculum activities before they are eligible to be awarded Polytechnic diploma.

Various co-curriculum units were set up to undertake the planning and implementation of activities for the students. The following are uniformed bodies, clubs and sports offered at the POLIMAS:

CATEGORY	UNIT	OFFERED	
		SEM 1	SEM 2
Uniformed Bodies	Civil Defence Multifunctional Team (PISPA)	√	√
	Territorial Army Regiment (ASKAR WATANIAH)	√	√
	Kelana Scouts Movement (PENGAKAP KELANA)	√	√
	Malaysian Civil Volunteer Corps Student Brigade (RELASIS)	√	√
Clubs	Computer	-	√
	English Language	-	√
	Consumers	-	√
	Kelab Mesra Alam	-	√
	Kelab Seni Suara (Nasyid)	-	√
Sports	Taekwondo-Do	-	√
	Badminton	-	√
	Netball	-	√
	Basketball	-	√
	Football	-	√
	Volleyball	-	√
	Hockey	-	√
	Adventure	-	√
	Athletics	-	√
	UNIT	OFFERED	
		SEM 1	SEM 2
	Table Tennis	-	√
	Rugby	-	√
	Sepak Takraw	-	√
	Squash	-	√
	Tennis	-	√
	Softball	-	√
	Seni Silat Gayong Pesaka Malaysia	-	√
	Seni Silat Cekak Ustaz Hanafi	-	√
	Archery	-	√

8.0 SUPPORT SERVICES

8.1 STUDENT AFFAIRS DEPARTMENT (HEP)

OFFICER IN CHARGE	•RESPONSIBILITY
AHMAD WALID B. MD YUSOF	•HEAD OF DEPARTMENT
ABDUL RAHMAN B. SAAD	•HEAD OF DISCIPLINE AND WELFARE UNIT
SAIFUL NIZAM B. SA'ARI	•STUDENT AFFAIRS (DISCIPLINE AND WELFARE)
MOHD HAFEEZ B. MOHD SOID	•STUDENT AFFAIRS (INTAKE & DATA)
ROSNITA BT HARUN	•LOANS AND SCHOLARSHIPS

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 Total Permanent/ Disablement Burial expenses Medical Expenses	RM20,000.00 RM20,000.00 RM1000.00 RM1000.00 @ RM40.00 perday

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), PSAS 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 PSAS and he or she may want to apply for claims from insurance companies, PSAS 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 PSAS.

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 finalised 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 semi-professional.

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

Advisor	:	Deputy Director of POLIMAS (Academic)
Chairman	:	Head of Department Ir. Nik Ahmad Faris Bin Nik Abdullah
Chief Editor	:	Syukrul Hassani Bin Jamaludin
Editor	:	Muffili Bin Mahadi