

# STUDENT'S STUDY GUIDE

Diploma in Civil  
Engineering



## **Endorsement**

This Student's Study Guide for this programme has been prepared and approved to be used  
by Session I 2022/2023

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This edition of Student's Study Guide is issued without going through the evaluation and editing process. The quality of this edition will be improved from time to time based on feedback and new information received.

Distribution of this Student's Study Guide is only allowed in the area or premises of PSMZA only.

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## **Assalamualaikum Warahmatullahi Wabarakatuh**

I wish to welcome and congratulate all the junior students of Department of Civil Engineering, Polytechnic Sultan Mizan Zainal Abidin. Diploma in Civil Engineering provide practical training and knowledge for students to prepare themselves with skills in civil engineering to fulfill the nation's needs in public and private sectors. So, I hope all the students will use the opportunities wisely.

This booklet, *Student's Study Guide* is a primary reference for students during their studies in polytechnic. It helps students to plan and understand the programme structure in other way to allow early preparation for further their studies in the next semester.

With the implementation of the Outcome-Based Education (OBE) in PSMZA, I hope the students can involve in all assessments that have been planned and grab the opportunities in order to complete their studies in polytechnic successfully.

I believe if the students are able to adapt themselves in the campus environment, always concentrate during lectures and active in all the activities planned, polytechnic's dream to produce quality graduates will become a reality.

**Mohd Shahrezal bin Abd Hamid**  
**Head of Civil Engineering Department**  
**Department of Civil Engineering**  
**Polytechnic Sultan Mizan Zainal Abidin**

## **Assalamualaikum Warahmatullahi Wabarakatuh**

Firstly, I wish to congratulate all the junior students of Department of Civil Engineering, Politeknik Sultan Mizan Zainal Abidin.

*This Student's Study Guide* contains all the important instruments in Diploma of Civil Engineering such as Programme Learning Outcome (PLO), synopsis of each course and complete programme structure for students to plan and complete their studies successfully. This is important as PSMZA is in their way to implement the Outcome Base Education (OBE) and of course the students should know all the outcomes learning in their studies.

Finally during 3 years of their studies, I hope the students are able to manage their time and grab the oppurtunities in order to obtain a good results to help PSMZA to produce competitive human capital in generating economy led by innovation.

Congratulations and Good Luck!

**Ts. Khairul Azam bin Elias**  
**Head of Programme (DKA)**  
**Civil Engineering Department**  
**Department of Civil Engineering**  
**Polytechnic Sultan Mizan Zainal Abidin**

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## **INTRODUCTION**

### ***Vision of PSMZA***

**Menjadi Peneraju Institusi TVET yang Unggul**

*To be the Leading-Edge TVET Institution.*

### ***Mission of PSMZA***

**1. Menyediakan akses yang meluas kepada program TVET berkualiti dan diiktiraf**

*To provide wide access to quality and recognised TVET programmes*

**2. Memperkasa komuniti melalui pembelajaran sepanjang hayat**

*To empower communities through lifelong learning*

**3. Melahirkan graduan holistik, berciri keusahawanan dan seimbang**

*To develop holistic, entrepreneurial and balanced graduates*

**4. Memanfaatkan sepenuhnya perkongsian pintar dengan pihak berkepentingan.**

*To capitalise on smart partnership with stakeholder*

### ***Vision of JKA***

JKA aspires to be a center of educational excellence in the field of civil engineering to produce graduates who are competent, honorable and responsible in accordance with the

*Falsafah Pendidikan Negara.*

### ***Mission of JKA***

Aim to produce semi-professional workforce of competent and competitive, quality and able to meet the need of Malaysia current industry.

## **DEPARTMENT OF CIVIL ENGINEERING (JKA)**

Department of civil engineering is one of the academic departments at the Polytechnic of Sultan Mizan Zainal Abidin (PSMZA), Dungun, Terengganu that has been established in 2002.

JKA aims to produce well-trained student, efficient, skilled in construction industries.

The department is currently led by En. Mohd Shahrezal bin Abd hamid as Head of Department and assisted by Ts. Khairul Azam bin Elias as Head of Program. JKA has 45 lecturers, 2 Assistant Engineer, 1 Lab Assistant who manage and maintain the lab equipment and assist administrative work.

JKA offers diploma program which is **Diploma in Civil Engineering** - that provide practical training and knowledge for students to prepare themselves with skills in construction industries to fulfill the nation's needs in public and private sectors.

## **CURRICULUM PROGRAM FOR DIPLOMA IN CIVIL ENGINEERING**

### **PROGRAMME OVERVIEW**

#### ***INTRODUCTION***

Diploma in Civil Engineering provides knowledge, skills and attitude to adapt to new technology in civil engineering with the ability to demonstrate professionalism and work ethics in fulfilling responsibilities towards the creator, client and society. This programme provides theory as well as carries out practical work. This programme also offers courses in Civil Engineering area such as Engineering Graphics, Water & Water Resources Engineering, Environment, Strength & Structural Design, Road & Transportation, Engineering Management and Geotechnics.

This programme is specially designed with hands-on training in addition to the theoretical learning in civil engineering. They are required to complete the industrial training to prepare graduates for employment in different sectors of the industry because the skills and knowledge acquired are used throughout modern industry. They will be able to use appropriate communication and interpersonal skills to perform tasks in various situations. Graduates will demonstrate desired behavioural traits like integrity, team work, problem solving and passion in performing the tasks related to their area of specialization. They will possess entrepreneurial skills to contribute to the economic growth for the nation's development in the construction industries. With these additional skills, they will be more competitive in the present job market



## ***SYNOPSIS***

This programme is designed to equip students with sound knowledge, skills, attitude and understanding of the environment, construction industries, construction designs and infrastructural development of civil engineering. The knowledge and skills acquired will be useful for success in future or current employment.

## ***JOB PROSPECT***

The knowledge and skills that the students acquire from the program will enable them to participate in the job market such as specified as:

- a. Technical Assistant
- b. Site Supervisor
- c. Inspector of Work
- d. Assistant Engineer
- e. Contractor
- f. Health and Safety Officer
- g. Research Assistant
- h. Quality Control Assistant Engineer
- i. Material Coordinator
- j. Entrepreneur

## ***PROGRAMME AIM***

This programme believes that all individuals have potential to be proactive and responsible senior technicians to support national agenda in transforming construction industry to be highly productive, environmentally sustainable with globally competitive players while focused on safety and quality standards.

## ***PROGRAMME EDUCATIONAL OBJECTIVES (PEO)***

The Diploma in Civil Engineering programme shall produce semi-professionals who are:

PEO1 : working in the field of civil engineering

PEO2 : lead or a team member to support their role in industries

PEO3 : engaged in activities to enhance knowledge or starting/embark their own enterprise

PEO4 : fulfill professional and communities responsibilities, conforming to ethical and environmental values

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

Upon completion of the programme, students 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 to wide 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 consequent responsibilities relevant to engineering technician practice and solutions to well-defined engineering problems (DK7)

**PLO7:** understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined engineering problems in societal and environmental contexts (DK7)

**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

Notes:

DK1: A descriptive, formula-based understanding of the natural sciences applicable in a sub-discipline

DK2: Procedural mathematics, numerical analysis, statistics applicable in a subdiscipline

DK3: A coherent procedural formulation of engineering fundamentals required in an accepted sub-discipline

DK4: Engineering specialist knowledge that provides the body of knowledge for an accepted sub-discipline

DK5: Knowledge that supports engineering design based on the techniques and procedures of a practice area

DK6: Codified practical engineering knowledge in recognised practice area. DK7: Knowledge of issues and approaches in engineering technician practice ethics, financial, cultural, environmental and sustainability impacts

**PROGRAMME STRUCTURE - MATRIX OF COURSES VS  
PROGRAMME LEARNING OUTCOMES (PLO)**

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS			PROGRAMME LEARNING OUTCOME (PLO)												PRE REQUISITE / CO-REQUISITE			
			L	P	T	CREDIT VALUES	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11		PLO12		
							CLS1	CLS2	CLS2	CLS3a	CLS3c	CLS3b	CLS5	CLS5	CLS3d	CLS3b	CLS4		CLS4		
<b>SEMESTER 1</b>																					
Compulsory	MPU21032	Penghayatan Etika dan Peradaban	1	0	2	0	2											√		√	
	DUE10012	Communicative English 1	1	0	2	0	2												√	√	
	MPU24XX1	Sukan ***	0	2	0	0	1												√		
	MPU24XX1	Unit Beruniform 1 ***	0	2	0	0	1													√	
Common Core	DUW10022	Occupational, Safety & Health for Engineering	2	0	0	0	2	√										√	√		
	DBS10012	Engineering Science	2	1	0	2	√				√										
	DBM10013	Engineering Mathematics 1	2	0	2	0	3	√					√						√		
Discipline Core	DCC10012	Engineering Drawing and Computer Aided Drafting (CAD)	0	4	0	0	2					√							√		
	DCC10022	Brickworks and Concrete Laboratory	0	3	0	0	2					√							√		
	DCC10032	Civil Engineering Materials	2	0	0	0	2	√											√	√	
<b>TOTAL</b>			<b>26</b>				<b>18</b>														
<b>SEMESTER 2</b>																					
Compulsory	MPU23052	Sains, Teknologi dan Kejuruteraan Dalam Islam*	1	0	2	0	2												√	√	
	MPU23042	Nilai Masyarakat Malaysia**	0	2	0	0	1														
	MPU24XX1	Kelab/Persatuan ***	0	2	0	0	1												√	√	
	MPU24XX1	Unit Beruniform 2	0	2	0	0	1													√	
Common Core	DBM20023	Engineering Mathematics 2	2	0	2	0	3	√					√						√	DBM10013	
Discipline Core	DCC20042	Plumbing and Carpentry Workshop	0	3	0	0	2					√							√		
	DCC20053	Mechanics of Civil Engineering Structure	3	0	1	0	3	√	√										√		
	DCC20063	Engineering Survey	2	3	0	0	3	√	√			√							√		
	DCC20073	Contract and Estimating	3	0	1	0	3	√	√										√	√	
<b>TOTAL</b>			<b>25</b>				<b>17</b>														
<b>SEMESTER 3</b>																					
Compulsory	DUE30022	Communicative English 2	1	0	2	0	2												√	√	DUE10012
	MPU22012	Entrepreneurship	1	0	2	0	2												√	√	
Discipline Core	DCC30082	Industrialised Building System (IBS) in Sustainable Construction	0	4	0	0	2					√							√	√	
	DCC30093	Geotechnical Engineering	3	0	1	0	3	√	√		√								√		
	DCC30103	Highway and Traffic Engineering	3	0	1	0	3	√	√										√		
	DCC30112	Geotechnical and Highway Engineering Laboratory	0	3	0	0	2					√	√								
DCC30122	Fluids Mechanics	2	0	1	0	2	√	√											√		
<b>TOTAL</b>			<b>24</b>				<b>16</b>														

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS				PROGRAMME LEARNING OUTCOME (PLO)												PRE-REQUISITE / CO-REQUISITE			
			L	P	T	O	CREDIT VALUES	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9	PLO10	PLO11		PLO12		
								Knowledge	Problem analysis	Design/development of solutions	Investigation	Modern Tool Usage	The Engineer and Society	Environment & Sustainability	Ethics	Individual and Team Work	Communications	Project Management and Finance		Life Long Learning		
<b>SEMESTER 4</b>																						
Compulsory	DUE50032	Communicative English 3	1	0	2	0	2													√	√	DUE30022
Discipline Core	DCC40132	Project Management and Practices	2	1	0	0	2	√				√									√	
	DCC40142	Steel Structure Design	2	1	0	0	2		√		√				√							DCC20053
	DCC40152	Water Supply and Waste Water Engineering	2	0	1	0	2	√						√					√			
	DCC40163	Theory of Structures	3	0	1	0	3	√	√													DCC20053
	DCC40172	Structure, Hydraulics and Water Quality Laboratory	0	3	0	0	2				√	√		√								
DCC40181	Final Year Project 1	0	2	0	0	1				√									√	√	√	
Electives		Electives 1	0	4	0	0	2															
<b>TOTAL</b>			<b>25</b>				<b>16</b>															
<b>SEMESTER 5</b>																						
Discipline Core	DCC50194	Final Year Project 2	0	8	0	0	4				√	√							√		DCC40181	
	DCC50203	Reinforced Concrete Design	3	0	1	0	3		√		√				√							
	DCC50212	Hydrology	2	0	1	0	2	√	√					√								
	DCC50222	Hydraulics	2	0	1	0	2	√	√							√						DCC30122
	DCC50232	Engineering in Society	2	0	0	0	2						√		√							√
Electives		Electives 2	2	0	0	0	2															
<b>TOTAL</b>			<b>22</b>				<b>15</b>															
<b>SEMESTER 6</b>																						
Industrial Training	DUI600610	Industrial Training	0	0	0	0	10					√		√		√	√	√	√	√		
<b>TOTAL</b>			<b>0</b>				<b>10</b>															
<b>TOTAL CREDIT VALUE</b>			<b>92</b>																			
<b>ELECTIVES COURSES</b>																						
1	DCC50242	Building Information Modeling (BIM)	0	4	0	0	2					√				√				√		
2	DCC50252	Building Services	2	0	0	0	2			√				√		√						
3	DCC50262	Environmental Pollution and Control	2	0	0	0	2			√				√		√						
<b>FREE ELECTIVES*</b>																						
1	DUD10012	Design Thinking	1	0	0	1	2		√													

	Total Credit	%
i. (a) Compulsory	14	15%
(b) Compulsory (Bahasa Kebangsaan A) <sup>b</sup>	2 <sup>b</sup>	0%
ii. Common Core	10	11%
iii. Discipline Core	54	59%
iv. Specialization	0	0%
<b>Total Credit</b>	<b>78</b>	<b>100%</b>
v. Elective	4	4%
(b) Free Electives <sup>a</sup>	2 <sup>a</sup>	0%
vi. Industrial Training	10	11%
<b>Grand Total Credit</b>	<b>92</b>	<b>100%</b>

Engineering & Engineering Technology Courses	Total Hours	%
i. Lecture	38	41%
ii. Practical	38	41%
iii. Tutorial	17	18%
<b>Total Contact Hours</b>	<b>93</b>	<b>100%</b>

**Legend:**

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

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

\*For Muslim Students

\*\*For Non Muslim Students

**Notes:**

1. The minimum and maximum credit value of Electives must be referred to the programme standard or professional bodies.
2. <sup>a</sup>Free Electives are courses which are not included in any programme structure but if taken, will contribute towards students' CGPA, provided that institutions adhere to the Jabatan Pendidikan Politeknik & Kolej Komuniti Free Electives Guidelines.
3. <sup>b</sup>MPU22042 Bahasa Kebangsaan A is COMPULSORY for students who did not attain credit in Bahasa Melayu at Sijil Pelajaran Malaysia (SPM) level and will contribute to students' CGPA.
4. Co-curriculum pathways:
  - a. Path 1 : Sport and Club
  - b. Path 2 : Uniform Unit (Students are required to PASS Uniform Unit 1 as a prerequisite to Uniform Unit 2)
5. Clusters:
  - a. CLS1 : Knowledge & Understanding
  - b. CLS2 : Cognitive Skills
  - c. CLS3a: Practical Skills
  - d. CLS3b: Interpersonal & Communication Skills
  - e. CLS3c : Digital & Numeracy Skills
  - f. CLS3d : Leadership, Autonomy & Responsibility
  - g. CLS4 : Personal & Entrepreneurial Skills
  - h. CLS5 : Ethics & Professionalism

## PROGRAMME STRUCTURE

COMPONENTS	COURSE CODE	COURSE	CONTACT HOURS			CREDIT HOURS
			L	P	T	
<b>SEMESTER 1</b>						
<b>Compulsory</b>	MPU21032	Penghayatan Etika dan Peradaban	1	0	2	2
	DUE10012	Communicative English 1	1	0	2	2
	MPU24XX1	Sukan***	0	2	0	1
	MPU24XX1	Unit Beruniform 1***				
<b>Common Core</b>	DUW10022	Occupational, Safety and Health	2	0	0	2
	DBM10013	Engineering Mathematics 1	2	0	2	3
	DBS10012	Engineering Science	2	1	0	2
<b>Discipline Core</b>	DCC10012	Engineering Drawing and CAD	0	4	0	2
	DCC10032	Civil Engineering Materials	3	0	0	2
	DCC10022	Brickworks and Concrete Laboratory	0	3	0	2
		<b>Total</b>	<b>26</b>			<b>18</b>
<b>SEMESTER 2</b>						
<b>Compulsory</b>	MPU23052	Sains, Teknologi dan Kejuruteraan Dalam Islam *	1	0	2	2
	MPU23042	Nilai Masyarakat Malaysia **				
	MPU24XX1	Kelab/Persatuan ***	0	2	0	1
	MPU24XX1	Unit Beruniform 2				
<b>Common Core</b>	DBM20023	Engineering Mathematics 2	2	0	2	3
<b>Discipline Core</b>	DCC20042	Plumbing and Carpentry Workshop	0	3	0	2
	DCC20053	Mechanic of Civil Engineering Structure	3	0	1	3
	DCC20063	Engineering Survey	2	3	0	3
	DCC20073	Contract and Estimating	3	0	1	3
		<b>Total</b>	<b>25</b>			<b>17</b>
<b>SEMESTER 3</b>						
<b>Compulsory</b>	DUE30022	Communicative English 2	1	0	2	2
	MPU22012	Entrepreneurship	0	4	0	2
<b>Discipline Core</b>	DCC30082	Industrialised Building System (IBS) in Sustainable Construction	0	4	0	2
	DCC30093	Geotechnical Engineering	3	0	1	3
	DCC30103	Highway and Traffic Engineering	3	0	1	3
	DCC30112	Geotechnical and Highway Engineering Laboratory	0	3	0	2
	DCC30122	Fluids Mechanics	2	0	1	2

		<b>Total</b>	<b>24</b>	<b>16</b>
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COMPONENTS	COURSE CODE	COURSE	CONTACT HOURS			CREDIT HOURS
			L	P	T	
<b>SEMESTER 4</b>						
<b>Compulsory</b>	DUE50032	Communicative English 3	1	0	2	2
<b>Discipline Core</b>	DCC40132	Project Management and Practices	2	1	0	2
	DCC40142	Steel Structure Design	2	0	1	2
	DCC40152	Water Supply and Waste water Engineering	2	0	1	2
	DCC40163	Theory of Structures	3	0	1	3
	DCC40172	Structure, Hydraulics and Water Quality Laboratory	0	3	0	2
	DCC40181	Final Year Project 1	0	4	0	1
<b>Electives</b>	DCC50242	Building Information Modelling (BIM)	0	4	0	2
		<b>Total</b>	<b>25</b>			<b>16</b>
<b>SEMESTER 5</b>						
<b>Discipline Core</b>	DCC50194	Final Year Project 2	0	8	0	4
	DCC50203	Reinforced Concrete Design	3	0	1	3
	DCC50212	Hydrology	2	0	1	2
	DCC50222	Hydraulics	2	0	1	2
	DCC50232	Engineering in Society	2	0	0	2
<b>Electives</b>	DCC50252	Building Services				
	DCC50262	Environmental Pollution and Control	2	0	0	2
		<b>Total</b>	<b>22</b>			<b>15</b>
<b>SEMESTER 6</b>						
<b>Industrial Training</b>	<b>DUT600610</b>	Industrial Training	0	0	0	10
		<b>Total</b>	<b>0</b>			<b>10</b>
<b>TOTAL CREDIT VALUE</b>						<b>92</b>



## COURSE SYNOPSIS

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DCC10012</b>	<p>ENGINEERING DRAWING &amp; COMPUTER AIDED DRAFTING (CAD) covers the basic manual drafting of technical drawing to enhance engineering student ability to communicate ideas in modern technology industry. It provides a platform for student to interpret engineering drawings, use CAD and develop their skills in technical sketching. Student should be able to produce engineering drawing using manual graphics sketching and CAD software related to IR4.0</p>	<p>CLO1: Display ability to produce basic engineering drawing using appropriate tool and equipment correctly. (P3, PLO 5)</p> <p>CLO2: Build 2D plan in engineering drawing appropriately. (P4, PLO 5)</p> <p>CLO3: Present an understanding of drawing process in mini project presentation verbally. (A3, PLO 10)</p>
<b>DCC10022</b>	<p>BRICKWORKS AND CONCRETE LABORATORY covers a basic concept of practical works and principles regarding the brickworks and concrete works including the safety exposure in workshop. This course emphasizes the related brick laying using mortar mixing 1:3 and student needed to complete a selected mini project. As for concrete works the method of statement for concrete which referred is BS1881. The cement to be used throughout the work shall be Portland cement obtained from an approved manufacturers that comply with MS 522. Fine and coarse aggregates shall comply with MS 29. All testing specification were referred by MS EN 206. This course also need students to participate actively in teamwork during the practical activities.</p>	<p>CLO1: perform practical activities using appropriate tools and techniques for concrete works with safety awareness (P3, PLO 5)</p> <p>CLO2: complete a selected mini project on brickworks through group participation (P5, PLO 5)</p> <p>CLO3: participate actively in a teamwork during practical activities (A3, PLO 9)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
DCC10032	<p>CIVIL ENGINEERING MATERIALS course is designed to equip students with a comprehensive knowledge and skills related to construction materials used in civil engineering. It will emphasize on types and function of cement, the function of aggregates in concrete, water, admixtures, properties of fresh and hardened concrete, concrete mix design, and manufacturing concrete on site. This course also focuses on the properties of timber, types and characteristics of brick and concrete block, steel and nonsteel, the types and function of building finishes materials and the introduction to building elements.</p>	<p>CLO1: Apply fundamental concept and behaviour of different types of material in civil engineering construction (C3, PLO 1)</p> <p>CLO2: Present orally the use of construction materials in a particular project using visual aids appropriately. (A2, PLO 10)</p> <p>CLO3: Display the ability to search various resources about current construction materials to the assigned topics. (C2 , PLO 1)</p>
DCC20042	<p>PLUMBING AND CARPENTRY WORKSHOP covers basic practical works of plumbing and carpentry works. This course emphasizes the related materials used and active participation of student to produce simple project.</p>	<p>CLO1: assemble appropriate tools and techniques for plumbing works with safety awareness. (P3, PLO 5)</p> <p>CLO2: complete a mini project for carpentry works within a given time frame. (P5, PLO 5)</p> <p>CLO3: participate actively in a teamwork during practical activities. (A3, PLO 9)</p>
DCC20053	<p>MECHANICS OF CIVIL ENGINEERING STRUCTURES covers knowledge of facts and basic principles of types of forces, strength of materials and behavior of loaded structures. This course provides exposure to the impact of loaded structures on direct and shear stresses, slope and deflection. This exposure will be the pre requisite to understand other courses in Civil Engineering.</p>	<p>CLO1: apply the fundamental knowledge and principles of mechanic structure in civil engineering (C3, PLO 1)</p> <p>CLO2: analyze structure behavior in determinate structure based on the problem given (C4, PLO 2)</p> <p>CLO3: construct the diagram related to stress and deflection of determinate beam (P3, PLO 10)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DCC20063</b>	<p>ENGINEERING SURVEY focus on the basic principles of levelling and total station traverse survey. This course emphasizes the basic distance measurement, bearing and angle in order to get the shape of terrain and the position on the field. It also gives knowledge and practical skills to students in operating and handling survey instruments, control survey, detail survey, data collection or acquisition, calculation and plotting of survey works. The course emphasis on the method used to carry out surveying works especially data collection or acquisition to produce plan based on the scope of work. It also gives exposure to the need for accurate data to be used for other surveying work</p>	<p>CLO1: apply correctly the fundamental principles and practices of surveying work. (C3, PLO 1)</p> <p>CLO2: perform Civil Engineering Survey works using appropriate instrument based on standard procedure and current surveying instrument. (P3, PLO 5)</p> <p>CLO3: initiate positive leadership and teamwork by contributing actively in groups during fieldwork that yield valid results. (A3, PLO 9)</p>
<b>DCC20073</b>	<p>CONTRACT AND ESTIMATING is a study of construction industry in general, tender procedure, contract procedure, preliminary estimating method, build-up rate and quantity measurement. The module emphasies on contract condition and provide exposure to the students regarding the procedures and standard practice in the construction field based on Standard Form of Contract (P.W.D. Form 203/ 203A).</p>	<p>CLO1: explain the fundamental concepts of construction industry in general, tender procedure and contract procedure in Malaysia (C3, PLO 1)</p> <p>CLO2: estimate the cost of construction project by using preliminary estimating method, build-up rate method and quantity measurement (C4, PLO 2)</p> <p>CLO3: describe the understanding of the professional engineering ethics and practice based on Standard Form of Contract (P.W.D Form 203/203A) efficiently. (A3, PLO 8)</p> <p>CLO4: perform efficient management of time and resources through quantity measurement and build-up rate in accordance with Public Work Department Practice. (A5, PLO 11)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DCC30082</b>	<p>IBS IN SUSTAINABLE CONSTRUCTION is designed to equip student the concept of Industrialised Building System (IBS) in conjunction with sustainability of the construction industry. This course teaches on elements such as Modular Coordination and IBS Score, site management and supervision and installation of IBS components. This course will also include practical work in assembling green system, supervision and quality checking in IBS construction and also installation of IBS in a small scale project pertaining to sustainable construction.</p>	<p>CLO1: assemble suitable green materials and Industrialised Building System (IBS) components with supervision (P3, PLO 5)</p> <p>CLO2: construct green system and IBS component with compliance to measurement of Modular Coordination and IBS Score (P4, PLO 5)</p> <p>CLO3: demonstrate punctuality and responsibility in completing task of assembling green system and IBS (A3, PLO 8)</p> <p>CLO4: organize time and resources efficiently in site management (A5, PLO 11)</p>
<b>DCC30093</b>	<p>GEOTECHNICAL ENGINEERING covers basic knowledge of the process of soils and rock formation and the characteristics of soil. It also covers soil improvement works such as compaction, shear strength, seepage, slope stability, earth pressure and foundation.</p>	<p>CLO 1: apply fundamental of engineering properties of soils in civil engineering works (C3, PLO 1)</p> <p>CLO 2: analyze geotechnical engineering problem using appropriate method in determination of safety, stable earthworks and geotechnical structures. (C4, PLO 2)</p> <p>CLO 3: analyze data to reach conclusion on assigned topic of case study. (C4, PLO 4)</p> <p>CLO 4: explain verbally in formal presentation based on assign topic. (A3, PLO 10)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
DCC30103	<p>HIGHWAY AND TRAFFIC ENGINEERING is a study on history of highway construction and the organization involved in Malaysia. This course also provides the students with the knowledge regarding the method and design involved in traffic engineering. This course emphasizes on introduction to highway and traffic, pavement materials, construction of flexible pavement, construction of rigid pavement, traffic control equipment and road furniture, flexible pavement design, junction design, traffic management and highway maintenance.</p>	<p>CLO1: apply appropriate model to solve problem in highway and traffic engineering (C3, PLO 1)</p> <p>CLO2: assesses design performance for highway and traffic engineering based on appropriate specification with consideration of public safety, society and environment (C5, PLO 3)</p> <p>CLO3: explain the findings of a case study/assign topic in a formal presentation (A3, PLO 10)</p>
DCC30112	<p>GEOTECHNICAL AND HIGHWAY LABORATORY covers knowledge in the form of practical through the experiments which are carried out based on the concepts and the theories learned in the class. The emphasis of the course is on the method of conducting experiments, analysis and understanding its relationship with theories learned. The course also focused on the geotechnical and highway which are the core of the civil engineering field.</p>	<p>CLO1: construct appropriate instrumentation/ measurement techniques/ models/ simulation in geotechnical and highway engineering using standard procedure and equipment. (P 3, PLO 5)</p> <p>CLO2: practices the importance of achieving safety in geotechnical and highway according to OSH standard. (A4, PLO 6)</p> <p>CLO3: analyse laboratory result in achieving objective of geotechnical and highway using engineering report standard. (C4, PLO 4)</p>
DCC30122	<p>FLUID MECHANICS covers the behaviour and characteristics of engineering fluid and their application in hydrostatic and hydrodynamic fluid. This course involves discussion on fluid properties, fluid flow concept and basic equations, moving fluid forces, dimensional analysis, flow in closed conduits and pipe network, and momentum equations</p>	<p>CLO1: explain the fundamental and principles in fluid mechanics engineering (C2, PLO 1)</p> <p>CLO2: determine the principles of fluid mechanics engineering in pipe flow appropriately (C4, PLO 2)</p> <p>CLO3: describe verbally the fundamental and principles in fluid mechanics engineering (A3, PLO 10)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DCC40132</b>	<p>PROJECT MANAGEMENT AND PRACTICES focuses on the basic knowledge and understanding of project management. Students will be introduced to the definition and basic concept of project management and practices. . Every aspect in project management is explained starting from the overview of project management, the influences of organizational structures in project management, project lifecycle, resources in project management, planning and scheduling, project control and monitoring, safety control, environmental management plan and quality assurance in project management. The application of common software such as Microsoft Project for planning and scheduling also will be exposed to the student.</p>	<p>CLO1: apply correctly the fundamental engineering concepts of project management (C3, PLO 1)</p> <p>CLO2: manipulate appropriate techniques and software tool for planning and scheduling related to civil engineering activities (P3, PLO 5)</p> <p>CLO3: perform efficient management of time and resources in civil engineering field. (A2, PLO 11)</p>
<b>DCC40142</b>	<p>STEEL STRUCTURE DESIGN covers the fundamental concepts and basic principles required to design steel structures including beam, column, roof truss and connections. This course enables student to develop understanding basic knowledge related to the theoretical background for the design of steel structures and the practical expertise to translate this background knowledge into successfully performing actual design calculations according to Eurocode 3 (EC3) for a single storey steel building</p>	<p>CLO1: design single storey building for steel structure correctly according to Eurocode 3 (C6, PLO3)</p> <p>CLO2: create the design output drawing for single storey steel structure design according to Eurocode 3 using current software (P5, PLO5)</p> <p>CLO3: adhere to the engineering ethic through presentation (A4, PLO8)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DCC40152</b>	<p>WATER &amp; WASTEWATER ENGINEERING is a study of water resources, water characteristics, usage and demand of water supply, raw water treatment process and water distribution system. This course also includes the information on the process in sewage treatment plant, sludge treatment and disposal. It also emphasize on the parameter of drinking water and effluent from sewage treatment plant.</p>	<p>CLO1: apply the concept of water supply and wastewater treatment according to related and current standard. (C3, PLO 1)</p> <p>CLO2: explain verbally in formal presentation based on given task. (A5, PLO 10)</p> <p>CLO3: determine the sustainability and impact of environmental issues regarding to water and wastewater treatment. (C5, PLO 7)</p>
<b>DCC40163</b>	<p>THEORY OF STRUCTURE covers basic knowledge of facts and principles in calculate the reactions, bending moments and shear forces for statically indeterminate beams and portal frame using the slope deflection method and moment distribution method. It also includes basic principles in analyse the forces in truss members using the equilibrium joint method for the statically determinate and using unit load method for the statically indeterminate trusses. Influence lines have important application for the design of structures that resist large live loads. Evaluation in influence lines include determination of shear force, bending moment and the absolute maximum moment.</p>	<p>CLO1: calculate statically indeterminate beams and portal frame using appropriate method (C3, PLO 1)</p> <p>CLO2: analyze joint displacement in statically determinate trusses and internal forces for statically indeterminate trusses correctly (C4, PLO 2)</p> <p>CLO3: evaluate the influence lines for statically determinate beams correctly (C5, PLO 2)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DCC40172</b>	<p>STRUCTURE, HYDRAULICS AND WATER QUALITY LABORATORY covers knowledge in the form of practical through the experiments which are carried out based on the concepts and the theories learned in the class. The emphasis of the course is on the method of conducting experiments, analysis and understanding its relationship with theories learned. The course also focused on the structure, hydraulics and water quality which are the core of the civil engineering field.</p>	<p>CLO1: construct appropriate instrumentation/ measurement techniques/ models/ simulation in structure, hydraulics and water quality engineering using standard procedure and equipment. (P3, PLO 5)</p> <p>CLO2: practice the importance of achieving safety in structure, hydraulics and water quality according to OSH standard. (A4, PLO 6)</p> <p>CLO3: analyse laboratory result in achieving objective of structure, hydraulics and water quality using engineering report standard. (C4, PLO 4)</p>
<b>DCC40181</b>	<p>FINAL YEAR PROJECT 1 covers the knowledge and displays practice skills in civil engineering. The students are exposed to communication skills, group works, work planning, decision making and creativity using available facilities.</p>	<p>CLO1: develop the investigation process in civil engineering based in a clear and concise manner (C3, PLO 4)</p> <p>CLO2: complete a presentation for project proposal using an engineering appropriate standard (A3, PLO 10)</p> <p>CLO3: propose appropriate methodology in management and resources based on civil engineering project (A3, PLO 11)</p> <p>CLO4: display self-education skills in gathering technical information from various resources (P3, PLO 12)</p>



COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
DCC50194	<p>FINAL YEAR PROJECT 2 covers knowledge and skills in civil engineering exposed to communication skills, group making, recommendation and gain creativity by using related facilities to a design of a system. This course also covers laboratory/workshop, field works, and a product or method of civil engineering related. learn the method to analyze data, preparation</p>	<p>CLO1 : organize the project tasks based on relevant appropriate tools ( P4 , PLO 5 )</p> <p>CLO2 : analyze the project results in achieving standard and regulation ( C4 , PLO 4 )</p> <p>CLO3 : write the project report based on project format ( C3 , PLO 10 )</p> <p>CLO4 : complete the project presentation content ( PLO 10 )</p>
DCC50203	<p>REINFORCED CONCRETE DESIGN covers concepts and methods of design for reinforced concrete structures comprising beam and slab. This course emphasizes on knowledge and practice of producing double storey reinforced concrete building design starting from the layout plan, action analysis, structural design and detailing according to Eurocode 2 (EC2).</p>	<p>CLO1: Design double storey building for reinforced concrete structure correctly according to Eurocode 2 (C6, PLO3)</p> <p>CLO2: Display a safe design for double storey reinforced concrete structure according to Eurocode 2 (P5, PLO5)</p> <p>CLO3: Adhere to the engineering ethic to complete the design task (A4, PLO8)</p>
DCC50212	<p>HYDROLOGY. This course introduces students to the concepts of engineering hydrology including hydrologic cycle and rainfall-runoff processes. It covers the quantification of rainfall and runoff processes for engineering design, including computation of design rainfalls, peak discharges and hydrographs. The basic concept of Urban Drainage Design and compliance with local guideline of Urban Storm Water Management Manual for Malaysia (MSMA) are discussed and employed in considering sustainability environmental value.</p>	<p>CLO1 : apply basic concept of applied hydrology in civil engineering ( C3 , PLO 1 )</p> <p>CLO2 : solve problem in applied hydrology for civil engineering ( C4 , PLO 2 )</p> <p>CLO3 : construct hydrological analysis using available software ( P3 , PLO 7 )</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DCC50222</b>	<p>HYDRAULICS covers the application in hydrostatic and hydrodynamic fluids. This course involves discussion on hydrostatics concept and basic equations of stability and buoyancy. This course also emphasizes on the application of constituents of pumps and open channel flow concept appropriately in solving hydraulics problem.</p>	<p>CLO1: explain the fundamental and principles in hydraulic engineering. (C3, PLO 1 )</p> <p>CLO2: determine the principles of hydraulic engineering in pumps and fluid flow (C3, PLO 2)</p> <p>CLO3: demonstrate the ability to work in team to solve problems on uniform and non-uniform open channel flow. (A3, PLO 9)</p>
<b>DCC50232</b>	<p>ENGINEERING IN SOCIETY focuses on the introduction to the role of engineers in the context of their employment in industry and their interaction with the wider community. In this course, students will be exposed to safety and health of the public, technology, and development in industry of civil engineering. This course also covers the meaning and impacts of engineering in society, ethical decision making, professional codes of ethics and sustainable development in the context of science and engineering application locally and globally. The students will be able to display excellent teamwork skills for working in group projects and organizing the activities of engineering practice in the society.</p>	<p>CLO1: discuss the roles of engineering in society and the duties of maintaining health and safety in the workplace. (A2, PLO6)</p> <p>CLO2: justify the importance of ethical issues and rules of conduct for the profession in civil engineering associated with contemporary technology and environmental protection in civil engineering (A3, PLO8)</p> <p>CLO3: display skills of self-education and communication techniques in organizing the activities of engineering practice (P4, PLO12)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
DCC50242	<p>BUILDING INFORMATION MODELLING (BIM) focuses on the designing and analysing building models using techniques, resources, and BIM tools. Students will be introduced to building models using BIM process for architectural, structural and plumbing. It covers BIM clash detection and construction scheduling. This course is a project-based where students gain knowledge and skills on the implementation of BIM concepts from planning to design stage.</p>	<p>CLO1 : construct building models using technical tools for basic modelling correctly. ( P3 , PLO 5 )</p> <p>CLO2 : build building models using techniques to create a 3D model in architecture, structure and plumbing ( P3 , PLO 5 )</p> <p>CLO3 : propose BIM coordination of 3D models and adhere to professional ethics appropriately. ( A3 , PLO 8 )</p> <p>CLO4 : perform 5D (costing) in project management ( P3 , PLO 11 )</p>
DCC50252	<p>BUILDING SERVICES focuses on the basic concepts and the principles of the systems in a building. The course emphasizes on the electrical installation system, fire prevention system, building transportation system, air conditioning system, maintenance works, and the demolition works.</p>	<p>CLO1: choose appropriate building services system with consideration of safety procedures, rules and regulations by the authority (C5, PLO4)</p> <p>CLO2: identify building services system with consideration of the environmental impact (A4, PLO7)</p> <p>CLO3: display teamwork in completing a case study of a building services system (A5, PLO9)</p>
DCC50262	<p>ENVIRONMENTAL POLLUTION AND CONTROL is a study on types and effects of communicable and non-communicable diseases to public health. It also emphasizes on the control and monitoring of pollution from water, air and noise and the effects to general health and environment. It also covers the knowledge on management of municipal solid waste and hazardous waste. The students are exposed to the Environmental Quality Act 1974 as the guidelines and procedures in managing environmental pollution.</p>	<p>CLO1: analyze technical concept of environmental pollution problems within environmental sustainability (C4 , PLO 4 )</p> <p>CLO2: determine the integration of sustainable environment element in solving solid waste and hazardous waste management (C5, PLO 7)</p> <p>CLO3: display teamwork in solving environmental problem effectively within community (A5, PLO 9)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>Common Core &amp; Compulsory Courses</b>		
<b>DUW10022</b>	<p>OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING course is designed to impart understanding of the self-regulatory concepts and provisions under the Occupational Safety &amp; Health Act (OSHA). This course presents the responsibilities of workers in implementing and complying with the safety procedures at work.</p> <p>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.</p>	<p>CLO1 : Explain briefly Occupational Safety and Health (OSH) procedures, regulation and its compliance in Malaysia. (C2 , PLO 1)</p> <p>CLO2 : Initiates incident hazards, risks and safe work practices in order to maintain health and safe work environment. (A3 , PLO 8)</p> <p>CLO3 : Demonstrate communication skill in group to explain the factor that can lead to accident in workplace. (A3 , PLO 10)</p>
<b>MPU 22012</b>	<p>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</p>	<p>CLO1 : propose the value proposition of entrepreneurial idea using Business model Canvas ( A3 , CLS 3b )</p> <p>CLO2 : develop a viable business plan by organizing business objectives according to priorities ( A4 , CLS 4 )</p> <p>CLO3 : organise the online presence business in social media marketing platform ( A3 , CLS 4 )</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
MPU 21032	<p>PENGHAYATAN ETIKA DAN PERADABAN ini menjelaskan tentang konsep etika daripada perspektif peradaban yang berbeza. Ia bertujuan bagi mengenal pasti sistem, tahap perkembangan, kemajuan dan kebudayaan merentas bangsa dalam mengukuhkan kesepaduan sosial. Selain itu, perbincangan dan perbahasan berkaitan isu-isu kontemporari dalam aspek ekonomi, politik, sosial, budaya dan alam sekitar daripada perspektif etika dan peradaban dapat melahirkan pelajar yang bermoral dan profesional. Penerapan amalan pendidikan berimpak tinggi (HIEPs) yang bersesuaian digunakan dalam penyampaian kursus ini.</p>	<p>CLO1 : membentangkan konsep etika dan peradaban dalam kepelbagaian tamadun. ( A2 , CLS 5 )</p> <p>CLO2 : menerangkan sistem, tahap perkembangan, kesepaduan sosial dan kebudayaan merentas bangsa di Malaysia. ( A2 , CLS 5 )</p> <p>CLO3 : mencadangkan sikap yang positif terhadap isu dan cabaran kontemporari dari perspektif etika dan peradaban. ( A3 , CLS 4 )</p>
MPU 23052	<p>SAINS, TEKNOLOGI DAN KEJURUTERAAN DALAM ISLAM memberi pengetahuan tentang konsep Islam sebagai al-Din dan seterusnya membincangkan konsep sains, teknologi dan kejuruteraan dalam Islam serta impaknya, pencapaiannya dalam tamadun Islam, prinsip serta peranan syariah dan etika Islam, peranan kaedah fiqh serta aplikasinya</p>	<p>CLO1 : Melaksanakan dengan yakin amalan Islam dalam kehidupan seharian ( A2 , CLS 4 )</p> <p>CLO2 : Menerangkan etika dan profesionalisme berkaitan sains teknologi dan kejuruteraan dalam Islam ( A3 , CLS 5 )</p> <p>CLO3 : Menghubunkait minda ingin tahu dengan prinsip syariah, etika dan kaedah fiqh dalam bidang sains, teknologi dan kejuruteraan menurut perspektif Islam ( A4 , CLS 4 )</p>
MPU 23042	<p>NILAI MASYARAKAT MALAYSIA membincangkan aspek sejarah pembentukan masyarakat, nilai-nilai agama, adat resam dan budaya masyarakat di Malaysia. Selain itu, pelajar dapat mempelajari tanggungjawab sebagai individu dan nilai perpaduan dalam kehidupan di samping cabaran- cabaran dalam membentuk masyarakat Malaysia.</p>	<p>CLO1 : Membincangkan sejarah dan nilai dalam pembentukan masyarakat di Malaysia ( A2 , CLS 4 )</p> <p>CLO2 : Menerangkan etika dan profesionalisme terhadap konsep perpaduan bagi meningkatkan semangat patriotisme masyarakat Malaysia ( A3 , CLS 5 )</p> <p>CLO3 : Menghubunkait minda ingin tahu dengan cabaran-cabaran dalam membentuk masyarakat Malaysia ( A4 , CLS 4 )</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
DBS10012	<p>ENGINEERING SCIENCE course introduces the physical concepts required in engineering disciplines. Students will learn the knowledge of fundamental physics in order to identify and solve engineering physics problems. Students will be able to perform experiments and activities to mastery physics concepts.</p>	<p>CLO1: Use basic physics concept to solve engineering physics problems (C3, CLS 1)</p> <p>CLO2: Apply knowledge of fundamental physics in activities to mastery physics concept (C3, CLS 1)</p> <p>CLO3: Perform appropriate activities related to physics concept (P3, CLS 3a)</p>
DBM10013	<p>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.</p>	<p>CLO1: Use mathematical statement to describe relationship between various physical phenomena. (C3, CLS 1)</p> <p>CLO2: Show mathematical solutions using the appropriate techniques in mathematics. (C3, CLS 3c)</p> <p>CLO3: Use mathematical expression in describing real engineering problems precisely, concisely and logically. (A3, CLS 3b)</p>
DBM20023	<p>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.</p>	<p>CLO1: Use algebra and calculus knowledge to describe relationship between various physical phenomena. (C3, CLS 1)</p> <p>CLO2: Solve the mathematical problems by using appropriate and relevant fundamental calculus techniques. (C3, CLS 3c)</p> <p>CLO3: Use mathematical language to express mathematical ideas and arguments precisely, concisely and logically in calculus. (A3, CLS 3b)</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
DUE10012	<p>COMMUNICATIVE ENGLISH 1 focuses on developing students' speaking skills to enable them to communicate effectively and confidently in group discussions and in a variety of social interactions. It is designed to provide students with appropriate reading skills to comprehend a variety of texts. The students are equipped with effective presentation skills as a preparation for academic and work purposes.</p>	<p>CLO1 : Participate in a discussion using effective communication and social skills to reach an amicable conclusion by accommodating differing views and opinions ( A3 , CLS 3b )</p> <p>CLO2 : Demonstrate awareness of values and opinions embedded in texts on current issues ( A3 , CLS 3b )</p> <p>CLO3 : Present a topic of interest that carries identifiable values coherently using effective verbal and nonverbal communication skills ( A2 , CLS 4 )</p>
DUE30022	<p>COMMUNICATIVE ENGLISH 2 emphasises the skills required at the workplace to describe products or services as well as processes or procedures. This course will also enable students to make and reply to enquiries and complaints.</p>	<p>CLO1 : Describe a product or service effectively by highlighting its features and characteristics that appeal to a specific audience ( A3 , CLS 3b )</p> <p>CLO2 : Describe processes, procedures and instructions clearly by highlighting information of concern ( A3 , CLS 4 )</p> <p>CLO3 : Demonstrate effective communication and social skills in handling enquiries and complaints amicably and professionally ( A3 , CLS 3b )</p>

COURSE	SYNOPSIS	COURSE LEARNING OUTCOMES
<b>DUE50032</b>	<p>COMMUNICATIVE ENGLISH 3 aims to develop the necessary skills in students to analyse and interpret graphs and charts from data collected as well as to apply the job hunting mechanics effectively in their related fields. Students will learn to gather data and present them through the use of graphs and charts. Students will also learn basics of job hunting mechanics which include using various job search strategies, making enquiries, and preparing relevant resumes and cover letters. The students will develop communication skills to introduce themselves, highlight their strengths and abilities, present ideas, express opinions and respond appropriately during job interviews.</p>	<p>CLO1 : Present gathered data in graphs and charts effectively using appropriate language forms and functions ( A2 , CLS 3b )</p> <p>CLO2 : Prepare a high impact resume and a cover letter, highlighting competencies and strengths that meet employer’s expectations ( A4 , CLS 4 )</p> <p>CLO3 : Demonstrate effective communication and social skills in handling job interviews confidently ( A3 , CLS 3b )</p>
<b>Industrial Training</b>		
<b>DUT600610</b>	<p>ENGINEERING INDUSTRIAL TRAINING</p>	<p>ENGINEERING INDUSTRIAL TRAINING exposes students to related workplace competencies demanded by industries. This course provides exposure to students in terms of technology literacy, effective communication, practice social skills and teamwork, policies, procedures and regulations, professional ethics and reporting. It also equips students with real work experience, thus helping students to perform as novice workers.</p>



## **RELATED REFERENCES**

### **Student support services and facilities**

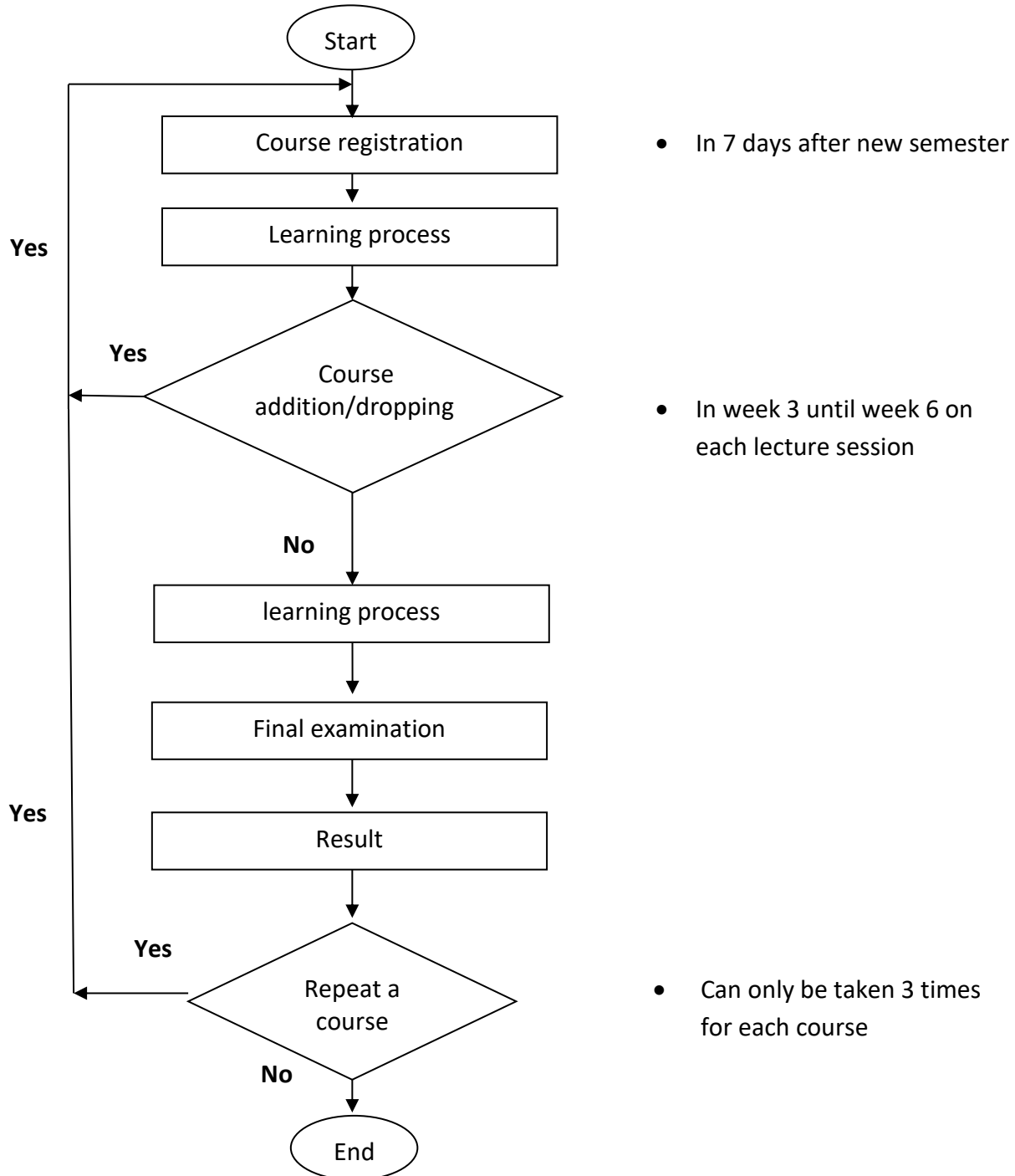
- |                        |   |
|------------------------|---|
| 1. Hostel              | 8. Pusat Islam  |
| 2. Health service      | 9. Lecture Hall   |
| 3. Insurance           | 10. Koperasi  |
| 4. Financial aid       | 11. Alumni  |
| 5. Sport Facilities    | 12. Counseling Unit, Career and Entrepreneurship Unit                                   |
| 6. Library             | 13. Customer Feedback Form, suggestion box and website                                  |
| 7. Canteen / Cafeteria | 14. ICT facilities ( Cyber Cafe Center, Local Area Network (LAN) system, Wireless, etc) |

### **Student's Act**

Refer "Buku Panduan dan Peraturan Am Pelajar Politeknik, Jabatan Pengajian Politeknik" for further information.

## Teaching and Learning Process

Student in *Diploma in Civil Engineering (DKA)* should accomplish 6 semesters for teaching and learning process and for each semester, the steps are as below:-



### **Examination**

Refer “*Arahan-arahan Peperiksaan dan Kaedah Penilaian*” for further information.

### **Academic Advisory System**

**Academic Advisory System (AAS)** is a systematic communication system for student to get guidance, advice and information from the reliable source. AAS help students determine the direction towards academic excellence and generic student attribute.

Refer “*Garis Panduan Kecemerlangan Sistem Penasihat Akademik Politeknik, Jabatan Pengajian Politeknik*” for further information.

### **Industrial Training**

Industrial Training is a MUST to all students under Diploma Program. Students have to pass industrial training before being recommended for the graduates of Diploma in Polytechnic, Ministry of Higher Education.

*\*Please refer to Industrial Training and Liaison Unit for further information*

## **REFERENCES**

1. Buku Panduan dan Peraturan AM Pelajar Politeknik, Jabatan Pengajian Politeknik
2. Arahan-arahan Peperiksaan dan Kaedah Penilaian
3. Garis Panduan Kecemerlangan Sistem Penasihat Akademik Politeknik, Jabatan Pengajian Politeknik
4. Garis Panduan Pengurusan dan Kaedah Penilaian Latihan Industri Politeknik, Jabatan Pengajian Politeknik

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