POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH

DEPARTMENT OF CIVIL ENGINEERING

5th EDITION STUDENT HANDBOOKS COMMITTEE

(CIVIL ENGINEERING DEPARTMENT)

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GREETING FROM DIRECTOR…

السَّلَامُ عَلَيْكُمْ وَرَحْمَةُ اللهِ وَبَرَكَاتُهُ

To all my dearest students,

Welcome to Politeknik Tuanku Sultanah Bahiyah,Kulim (PTSB) ~ your first step to a brighter future!

Thank you for choosing PTSB as your higher learning institution. I assure you that you will not regret it. PTSB offers twelve diploma programs; both in engineering and non-engineering fields, all accredited by ETAC and MQA. The programs are highly sought after by industries, and since 2015, we have achieved a graduate employability rate of over 90%. So, if you are looking for a job after completing your diploma, rest assured, you will not be disappointed. If you wish to pursue further studies at a higher level, do not worry, as more than 10% of our students continue their degrees at local universities.

We want you to make the most of your time with us, experiencing and learning as much as possible. Therefore, this Students' Handbook is designed to help you kick-start your quest for knowledge at PTSB with ease and without any trouble. It will also help you to understand how the learning system works. Learning at the polytechnic involves face-to-face interactions as well as online learning. This means, you will not only attend lectures but also engage in hands-on work in the workshops or laboratories. Occasionally, your lecturers may assign certain tasks to be completed online. 'Blended Learning' has become a culture at PTSB, and we believe that learning in this way can be enjoyable. We have CIDOS and MSTeam as official platforms for online learning, but we can always utilize any other online platforms to enrich our resources. Additionally, the Outcome-Based Education (OBE) approach encourages student-centered learning and teamwork, helping develop your leadership and communication skills.

Please make full use of the facilities available on our campus. You are welcome to enjoy the sport center, library, Pusat Islam, canteen and cafeteria. In addition, we provide the Sistem Penasihatan Akademik, competent counselors at the Counselling Unit, and friendly Majlis Perwakilan Pelajar (MPP) to help you throughout your study journey.

I sincerely hope that you will enjoy this phase of your learning journey and **I WISH YOU… ALL THE BEST**!!

TN. HJ. MOHD RUZI BIN HAMZAH
Director,
Politeknik Tuanku Sultanah Bahiyah.

1. About Polytechnic of Tuanku Sultanah

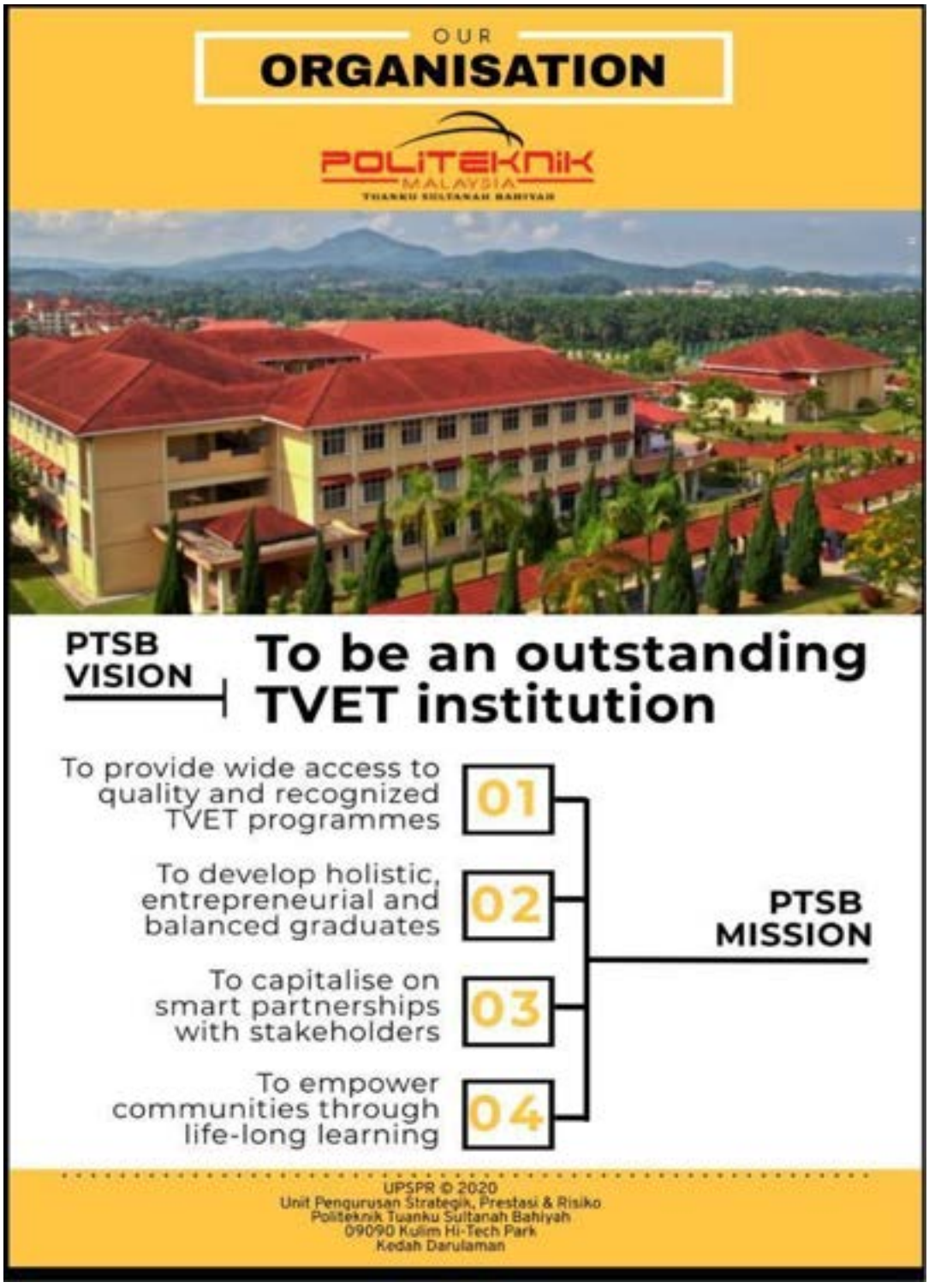
Politeknik Tuanku Sultanah Bahiyah (PTSB), formerly known as Politeknik Kulim (PKU) was the 16th established polytechnic under the Ministry of Education Malaysia. PKU commenced on 1st March 2002 at a temporary campus in Politeknik Seberang Prai, Pulau Pinang. On 3rd March 2003, it was relocated to its new premise of 100 acres at Kulim Hitech Park, Kulim, Kedah. This campus is equipped with up-to-date infrastructure which provides a conducive and ambient environment for higher education learning. It enrolled its first batch of 507 students on 9th June 2003.

This campus was officiated by the late Sultan of Kedah, Sultan Al-Mu'tasimu Billahi Muhibbuddin Tuanku Al-Haj Abdul Halim Mu'adzam Shah Ibni Almarhum Sultan Badlishah on 27th March 2007 and rebranded as Politeknik Tuanku Sultanah Bahiyah (PTSB).

PTSB is one of the Politeknik Malaysia under the administration of Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK). It plays its vital role in producing semiprofessional workers for the engineering and commercial industry in the private and public sectors. There are four main academic departments namely Civil Engineering Department, Electrical Engineering Department, Mechanical Engineering Department and Commerce Department. The teaching and learning processes in these main departments are supported by General Studies Department as well as Mathematics, Science & Computer Department.

The teaching and learning processes at PTSB are certified by SIRIM MS ISO 9001:2015. To maintain this certification, surveillance audit will be done every year and recertification for every three years. Apart from SIRIM certification, all engineering programs are accredited by ETAC and all non-engineering programs are accredited by MQA. By complying with the requirements of SIRIM, ETAC and MQA, we guarantee that students are equipped with all the knowledge and skills they need to serve in their respective fields and beyond. Furthermore, skills and knowledge like entrepreneurship as well as other softskills needed by employers are also nurtured among our students as these qualities are essentials in the current scenario of the working world.

2. Mission & Vision



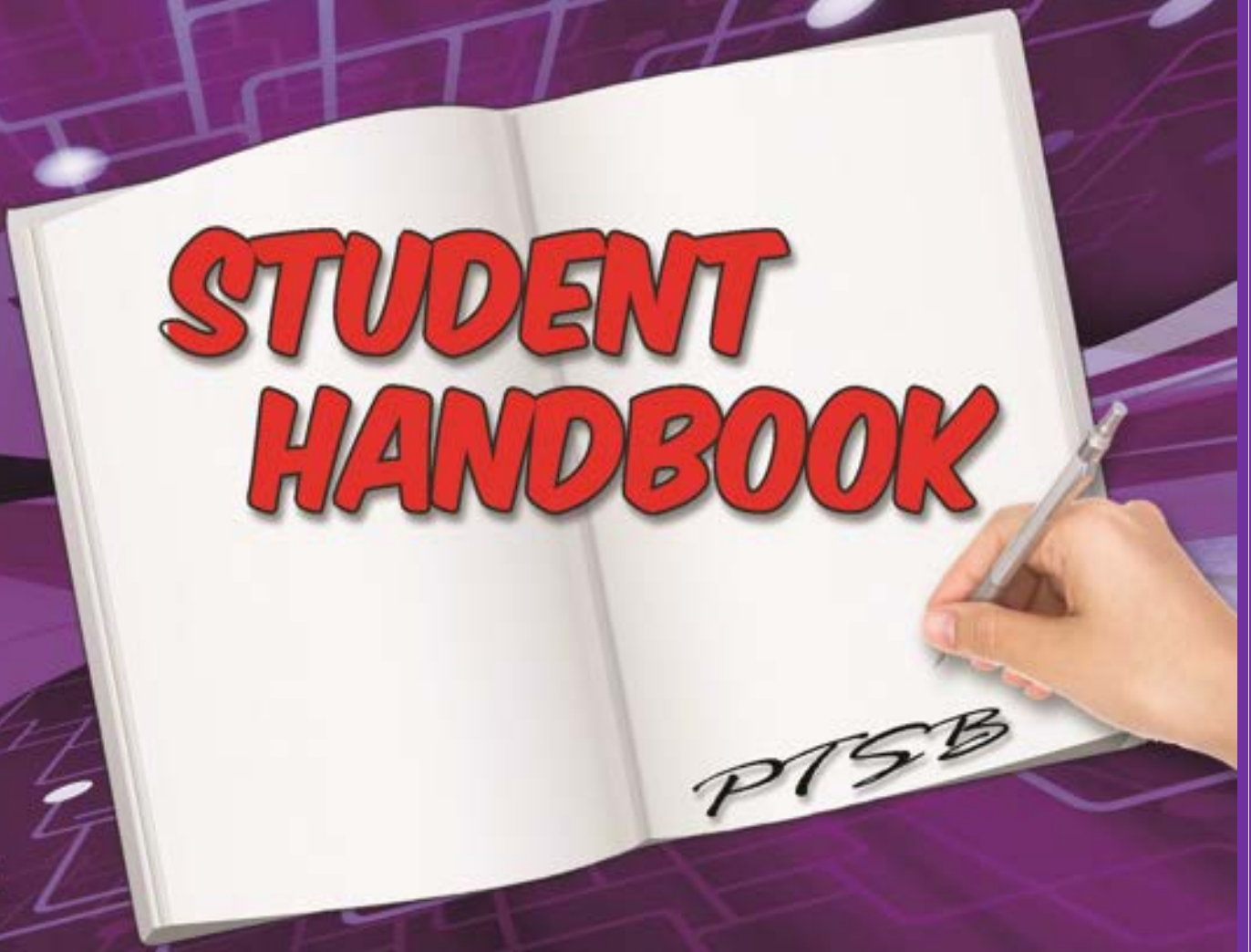
3. PTSB ORGANIZATION CHART

4. Campus Plan

1. ADMINISTRATION
2. LIBRARY AND RESOURCE CENTER
3. TRAINING AND CONTINUOUS LEARNING UNIT
4. DIGITAL MULTIMEDIA LEARNING CENTER
5. MAIN LECTURER HALL
6. DEWAN MUAD'ZAM SHAH (MULTI PURPOSE HALL
7. DEPARTMENT OF MATHEMATICS AND COMPUTER
8. DEPARTMENT COMMERCE
9. DEPARTMENT OF ELECTRICAL ENGINEERING BLOCK
10. DEPARTMENT OF STUDENT AFFAIRS AND DEVELOPMENT
11. DEPARTMENT OF CIVIL ENGINEERING BLOCK
12. DEPARTMENT OF MECHANICAL ENGINEERING BLOCK
13. CANTEEN
14. DEVELOPMENT AND MAINTENANCE UNIT
15. STORE UNIT
16. DRIVER UNIT
17. MOSQUE
18. CAFETERIA
19. STUDENT HOSTEL BLOCK
20. DEPARTMENT OF SPORT, CO-CURRICULAR AND CULTURE
21. DIRECTOR RESIDENTIAL
22. STAFF RESIDENTIAL
23. HOSTEL MANAGEMENT UNIT
24. WATER TANK
25. WATER TANK
26. MAIN / SUB STATION HOUSE

POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH

STUDENT HANDBOOK



ACADEMIC TEAM

5.1 CIVIL ENGINEERING DEPARTMENT

Introduction

Civil Engineering Department (CED) is one of the main academic departments in Politeknik Tuanku Sultanah Bahiyah, Kulim, Kedah. CED has organized a wide range of activities in 2015 for students as well as for the staff to strengthen their skills and enhance their knowledge in various fields. It is our main aim to produce graduates that will be able to demonstrate desired behavioral traits such as integrity, teamwork, problem solving and passion in performing tasks related to their area of specialization. Students are also exposed to entrepreneurial skills that can be contributed to the economic growth in developing the nation towards 2020, especially in the construction industry. It is hoped that more competitive graduates will be produced to accommodate the present global market.

Programs Offered

- Diploma In Civil Engineering (DKA)
- Diploma In Geomatics (DGU)

Facilities

Below are the facilities available at Civil Engineering Department :

- Lecture Theatre
- Lecture Room
- Seminar Room
- CADD Laboratory
- Drawing Studio
- Carpentry Workshop
- Brick Workshop
- Concrete Laboratory
- Pipe Workshop
- Structure Laboratory
- Hydraulic Laboratory
- Geotechnics Laboratory
- Highway Laboratory
- Geomatics' Laboratory
- Photogrammetry Laboratory (Working Area)
- Remote Sensing Laboratory
- Environment Laboratory
-

5.2 Electrical Engineering Department

Introduction

Electrical Engineering Department (EED) is one of the academic departments in Politeknik Tuanku Sultanah Bahiyah (PTSB). It offers engineering program in electrical and electronics field for diploma level.

EED offers quality efficient education and professional services through a broad-based knowledge within the field of electrical and electronic engineering. The aim is to produce graduates with potential, competent and competitive as well as highly skilled. In order to achieve a commendable work, EED is comprised of dedicated professional trainers, with sufficient infrastructure.

Programs Offered

- Diploma in Electrical Engineering (DET)
- Diploma in Electronic (Communication) Engineering (DEP)
- Diploma in Electronic (Computer) Engineering (DTK)
- Diploma in Electrical and Electronic Engineering (DEE)

Facilities

- 25 Classrooms
- 1 Lecture hall
- 2 Electrical and Technology Principle Lab (EPT)
- 3 Computer Programming Lab (ECP)
- 2 Electronic Maintenance Lab (EER)
- 2 Electronic Labs (EEL)
- 1 Telecommunication Lab (ETC)
- 1 Communication Data Lab (EDC)
- 1 Measurement Lab (EME)
- 2 Project Labs (BPL)
- 1 Instrumentation Lab (BIN)
- 1 Electrical Wiring Lab (BEI)
- 1 Power System Lab (BPS)
- 1 Power Electronic Lab (BPE)
- 1 CAD Lab (CAD)
- 1 Project Presentation Room (EPP)
- 1 Hi-Tech Lab (BHI)
- 1 Robotics Lab (BRO)
- 1 Electrical Machine Lab (BEM)

5.3 Mechanical Engineering Department

Introduction

Mechanical Engineering Department (MED) is one of the major departments at the Politeknik Tuanku Sultanah Bahiyah, Kulim Kedah. As one of the academic departments in PTSB, MED provides a plethora of opportunities to the students to learn by organizing many interesting activities and programmes. Students will possess entrepreneurial skills, practice good work ethics, be able to promote good morality and behavior, and continuously enhance their knowledge and skills that will allow them to make tangible contributions and meet new technical challenges. The graduates will communicate and interact responsibly and be able to contribute effectively as a team member. They will also be adaptable to new changes at the workplace.

Programs Offered

- Diploma In Mechanical Engineering (DKM)
- Diploma In Mechanical Engineering (Manufacturing) (DTP)
- Diploma In Mechatronics Engineering (DEM)

Facilities

- Machining Workshop
- Welding Workshop
- Fitting Workshop
- Project Workshop
- Foundry Workshop
- Plastics Workshop
- Strength and Material Laboratory
- Mechanics and Machine Laboratory
- Metrology Laboratory
- Robotics Laboratory
- Plant Laboratory
- CAD/CAM Laboratory
- Automation Laboratory
- Electrical Technology Laboratory
- Instrumentation and Control Laboratory

5.4 COMMERCE DEPARTMENT

Introduction

Commerce Department is one of the academic departments in Politeknik Tuanku Sultanah Bahiyah. It operated on 2003 and it previously known as Politeknik Kulim where it offered several courses such as Accounting, Marketing and Business Studies at Diploma and certificate level. The first batch consisted of 176 students and 17 lecturers during its first session on 2003. Currently the number of students are 1,099 with an average intake of 180 to 250 students for every semester.

Commerce Department is moving forward by offering efficient and professional services in its education based on accounting, marketing and business studies in order to produce potential graduates who are hardworking, charismatic and professional. To realize this, Commerce Department has professional, dedicated and experience lecturers and it also has complete infrastructure such as classrooms, lecture hall and computer lab which are fully equip and comfortable for the students to achieve a successful academic.

Programs Offered

- Diploma in Accountancy (DAT)
- Diploma in Marketing (DPR)
- Diploma in Business Studies (DPM)

Facilities

- A lecture Hall
- 16 Classrooms
- A Business Support Room
- A Presentation Seminar Room
- An Entrepreneurship Development Room
- An Accountancy Computer Lab
- A Micro Accountancy Room
- 2 Meeting Rooms
- 2 Entrepreneurship Kiosks
- A Simulation Office

5.5 Mathematics, Science and Computer Department

Introduction

Mathematics, Science & Computer Department (MSCD) of PTSB is an ancillary department that consists of Mathematics Unit, Science Unit and Computer Unit. The department works to develop students' knowledge and skills in Mathematics, Science and Computer as the basic for them to learn engineering courses in the main academic. As an ancillary academic department, MSCD is also committed to develop students' competence and professionalism in their field. Since December 2015, MSCD has the intake of Pre-diploma in Science (IPS). Pre-Diploma Science is a program implemented to provide candidates who do not meet the minimum diploma-level qualifications to pursue their studies at Polytechnics as well as provide candidates with a second chance to seize jobs and improve their economic status and family.

Courses Offered

- DBM 10013 Engineering Mathematics 1
- DBM 20023 Engineering Mathematics 2
- DBM 30013 Engineering Mathematics 3
- DBM 30043 Electrical Engineering Mathematics
- DBS 10012 Engineering Science
- DBC20012 Computer Application

Facilities

- 1 Meeting Room
- 5 Tutorial Rooms
- 4 Computer Lab
- 2 Science Lab

5.6 General Studies Department

Introduction

General Studies Department (GSD) of PTSB consists of English Language Unit and Islamic Studies and Moral Education Unit that work on a professional partnership in their quest to take students to greater heights, morally and socially. As an ancillary academic department, GSD is committed in improving the English Language proficiency as well as the teaching of Islamic and Moral Education of undergraduates in the main academic departments.

Courses Offered

- DUE10012 – Communicative English 1
- DUE30022 – Communicative English 2
- DUE50032 – Communicative English 3
- MPU23012-Pengajian Islam
- MPU21032- Penhayatan Etika dan Peradaban
- MPU23052- Sains Teknologi Dan Kejuruteraan Dalam Islam
- MPU23042- Nilai Masyarakat Malaysia
- MPU22042- Bahasa Kebangsaan A

Facilities

- 3 Language Labs
- 1 Seminar Room
- 1 Presentation Room
- 1 Meeting Room

5.7 COLLABORATION, INDUSTRIAL SERVICES AND EMPLOYMENT CENTRE (CISEC)

Introduction

Collaboration, Industrial Services And Employability Centre (CISEC) is one of unit was established at Politeknik Tuanku Sultanah Bahiyah (PTSB) with the function to four main areas and Alumni Tracer Study, Careers Advisory Service and Continuing Education, Planning and Preparedness into the working world, as well as industrial relations and placement through the industrial services especially in networking and collaboration

Scope And Function CISEC

Focuses on services to the industry, particularly in terms of networking and collaboration

Task 3 :
Increasing employability and job availability polytechnic graduates

Task 2 :
Provide services and respond to industry needs, particularly those involving collaboration and job placement of graduates

Task 4 :
Increase the rate of polytechnic graduates work

Task 1 :
Facilitate networking and collaboration between the Industry Polytechnic

Task 5 :
Provide career counseling, planning and preparation of graduates into the working world

Alumni PTSB

A group of students who have graduated from PTSB since 2010

Alumni Fund Function

helps to shape **PTSB** today and tomorrow by providing critical funds used by the Polytechnic leadership to meet the most pressing needs of the Polytechnic and students

INDUSTRY COLLABORATION MODEL

INDUSTRY ENGAGEMENT

INDUSTRY DIALOGUE

- Networking
- Inputs
  HRD Trends, Curricula, Employment

INDUSTRY ADVISORY

- Inputs
  HRD Trends, Curricula, Employment
- Networking

INDUSTRY FOCUS GROUP

- Focus group seminar
- Focus group advisory
- Networking reach out /discussion
  New fields, HRD Trends, Curricula, Employment

INDUSTRY COLLABORATION

ACADEMICS

Student Industry Training
Staff Industry Attachment
Industry Lecturers/Fellow
Curricula Development
Work Based Learning
Career/technical advice & support

RESEARCH

Joint Research /Project
Consultancy

BUSINESS ENGAGEMENT

Time Sector Privatization
CPD & Workforce development
Specialist Facilities

COLLABORATIVE OUTCOME

NATIONAL AGENDA

Human Capital Projection & Planning

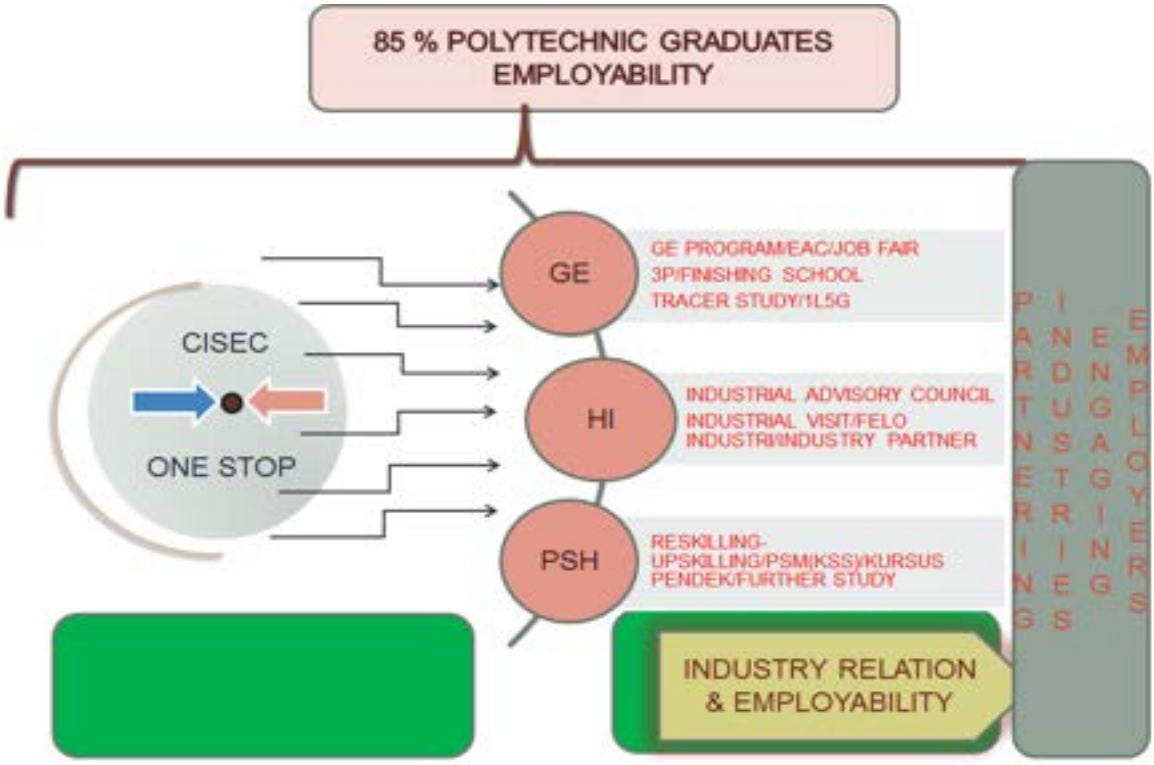
INSTITUTION

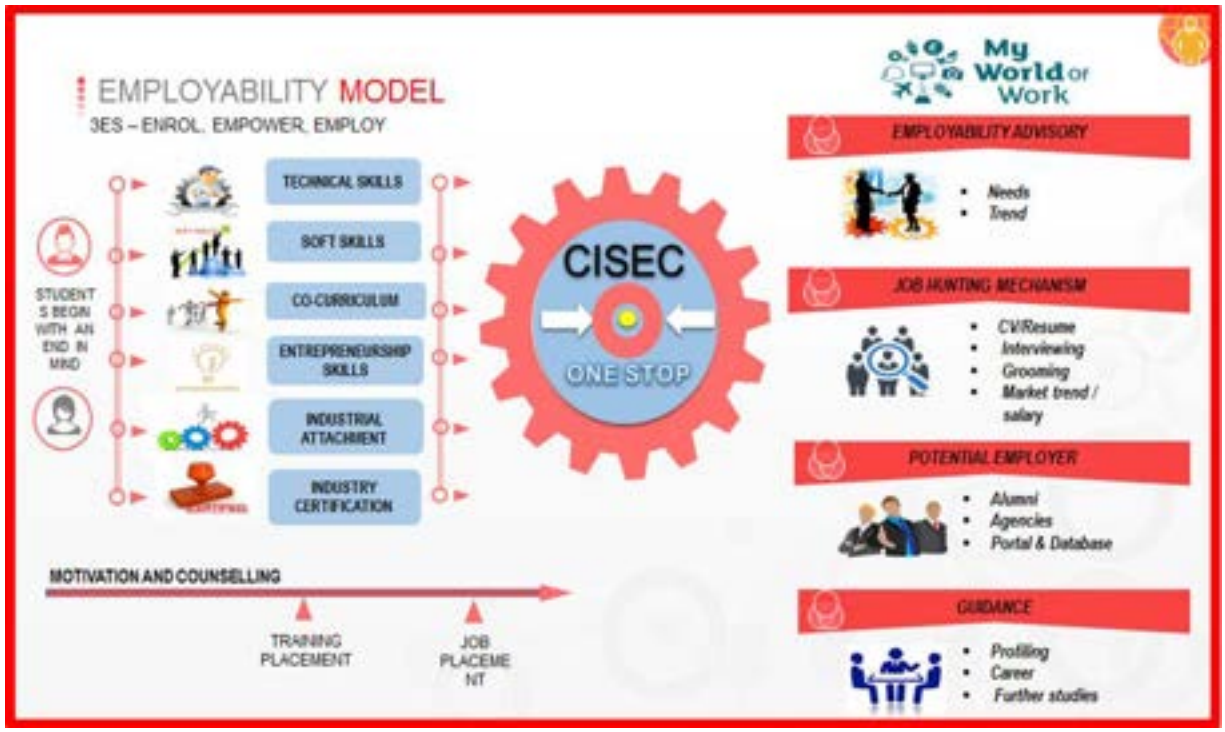
Expertise & Capacity
Competitiveness & Image
Funding Opportunities

GRADUATES

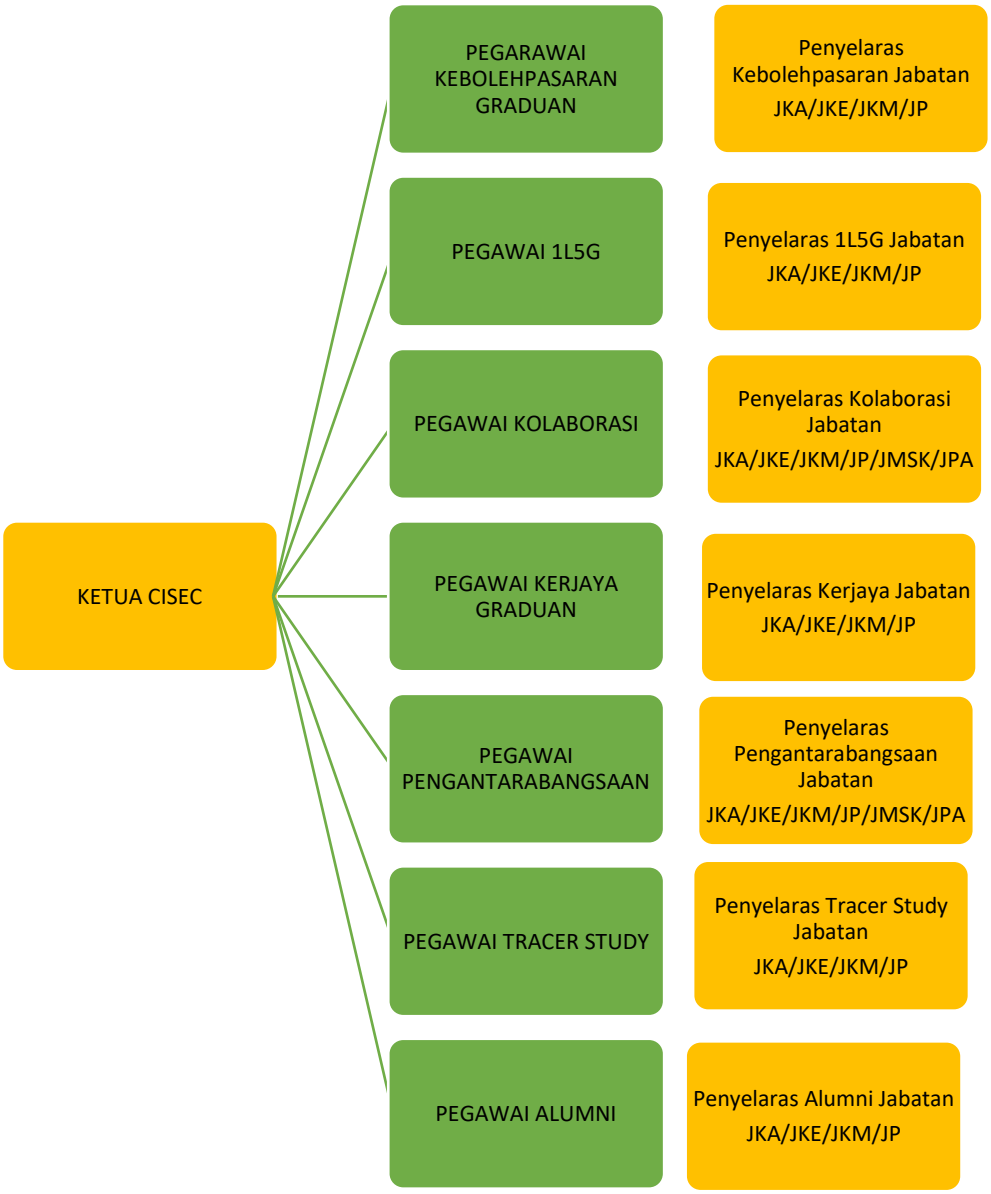
Employability
Salary Enhancement

EMPLOYABILITY MODEL





CISEC ORGANIZATION CHART



5.8 Industrial Training and Liaison Unit

Introduction

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.

Function and Roles

Liaise between students and organization where the students undergo their training

Manage the Industrial Training process for the eligible students

Coordinate Industrial Training activity

Industrial Training Course (DUT40110)

Industrial Training exposes students to related workplace competencies demanded by industries. It also equips students with real work experience, thus helping students to perform as novice workers. Upon completion of this course, students should be able to:

- apply related knowledge and skills at the workplace.
- communicate effectively with others.
- practice teamwork.
- professionally and ethically comply with policies, procedures and rules of the organization.
- explain the tasks assigned (during the industrial training) according to the prescribed format.

- **Assessment**

The course assessment is carried out by Coursework where it's a continuous assessment that measures knowledge, technical skills and soft skills. Student will be evaluate by using a rubric form as:

i. Organization Evaluation (total of 60%)
   - Practical Task – 40%
   - Reflective Journal – 20%

ii. Lecturer Evaluation (total of 40%)
   - Observation – 10%
   - Final Report – 20%
   - Presentation – 10%

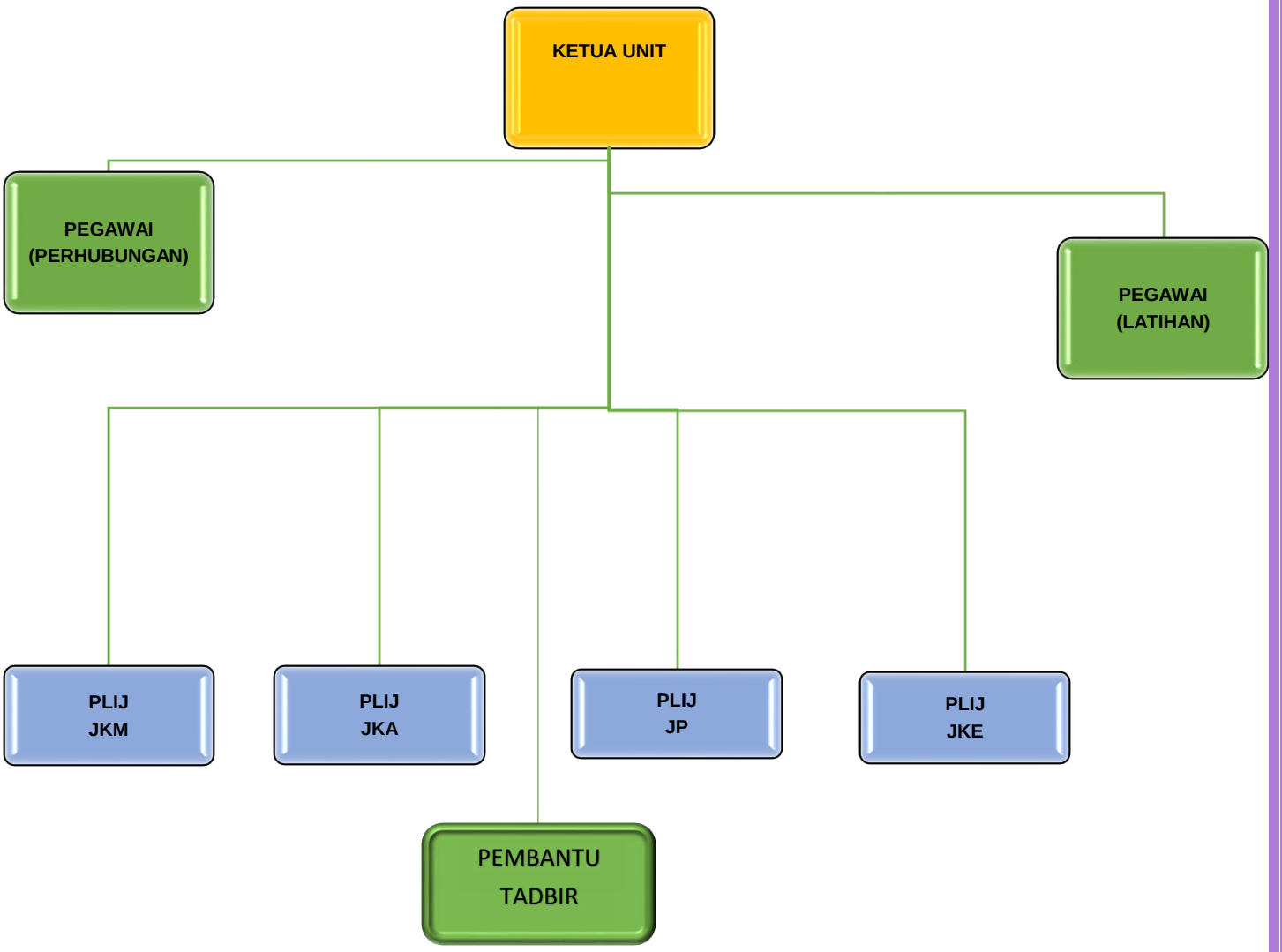
Grading

Industrial Training grade are follow the guideline stated in the Arahan-Arahan Peperiksaan dan Kaedah Penilaian which is approved by the Lembaga Peperiksaan dan Penganugerahan Sijil/ Diploma Politeknik and Dasar Latihan Industri Institusi Pengajian Tinggi which is published by Minister of Higher Education.

Industrial Training DUT40110 are grade as follow:

MARK	RESULT	STATUS
80 – 100	Excellent	Pass
65 – 79	Distinction	
40 – 64	Pass	
0 – 49	Fail	Fail

INDUSTRIAL TRAINING AND LIAISON UNIT
ORGANIZATION CHART14



5.9 Assessment and Examination Unit

Introduction

Examination Unit is responsible to coordinate and to handle activities regarding final examination and certification. The unit is fully supported by all departments to fulfil the responsibilities given. Examination Officer is responsible to monitor the whole examination process of polytechnic while Examination Coordinator is to manage things regarding examination for their respective departments. Other than that, Examination Unit also cooperate in organizing workshops related to examination such as Assessments and Vetting Workshop which is organized every semester in order to produce high quality examination questions to be applied in the Final Examination of Politeknik KPT. There are rooms in the Examination Unit as the offices of the Examination Officer, Departments' Examination Coordinator, Computer Room, and Vault Room, Examination Materials/Equipment Room and Printing Room.

Function and Roles

Prepare Final Examination Schedule and Invigilation of Final Semester

Prepare graduates' Certificates/Diploma and certification matters

Supervise the Final Semester Examination.

Process and prepare documents regarding Final Examination such as Examination Slip, Student's Letters.

Sort and prepare the question for Final Semester Examination.

Repeat Module, Repeat Semester, Fail, Research Data of Examination Result, Board Report, Graduates List and etc.

Questions construction process and organize the workshops for questions construction and vetting.

Prepare examination result transcript

Course Credit

- Credits for each course are as set forth in the Curriculum and Program Structure Document as approved by the Course Curriculum Institution and the Polytechnic Training Program

- The number of credits to be taken by the student for each semester is between 12 to 20 or as specified in the document Curriculum and Program Structure
- The minimum credit amount to be collected by the student before being considered for the award of the certificate is as prescribed in Document Curriculum and Program Structure

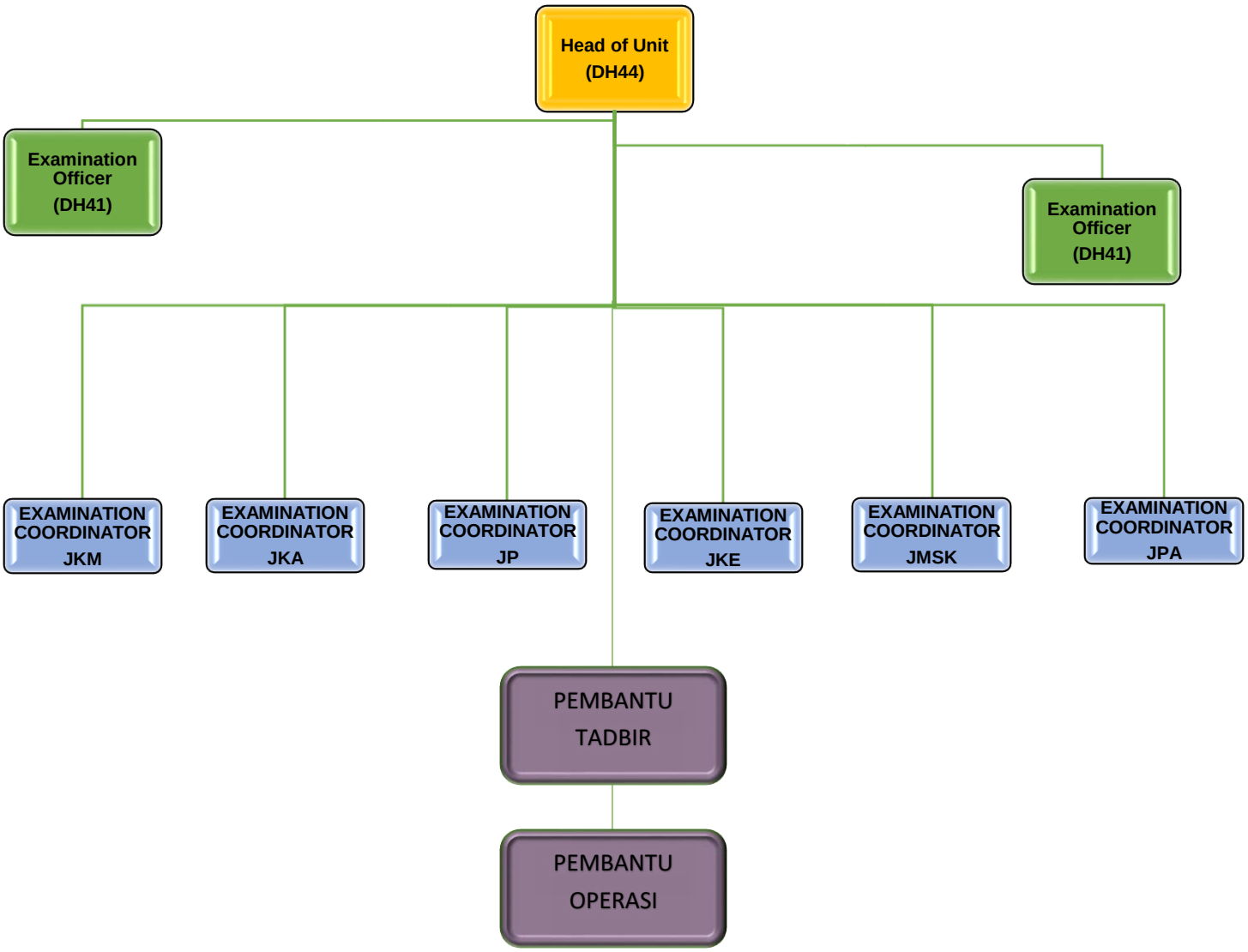
MARKS	POINT OF INTEREST	GRED	STATUS
90 - 100	4.00	A+	Very Excellence
80 - 89	4.00	A	Excellence
75 - 79	3.67	A-	Credit
70 - 74	3.33	B+	Credit
65 - 69	3.00	B	Credit
60 - 64	2.67	B-	Pass
55 - 59	2.33	C+	Pass
50 - 54	2.00	C	Pass
47 - 49	1.67	C-	Pass
44 - 46	1.33	D+	Pass
40 - 43	1.00	D	Pass
30 - 39	0.67	E	Fail
20 - 29	0.33	E-	Fail
0 - 19	0.00	F	Fail

Determination of Passing Mark for Continuous Assessment, Final Assessment, and Final Examination

The requirement or pass marks for both assessments, i.e. Continuous Assessment (CA) and Final Examination / Final Assessment (FE) are used for all courses. The prescribed pass mark is at least:

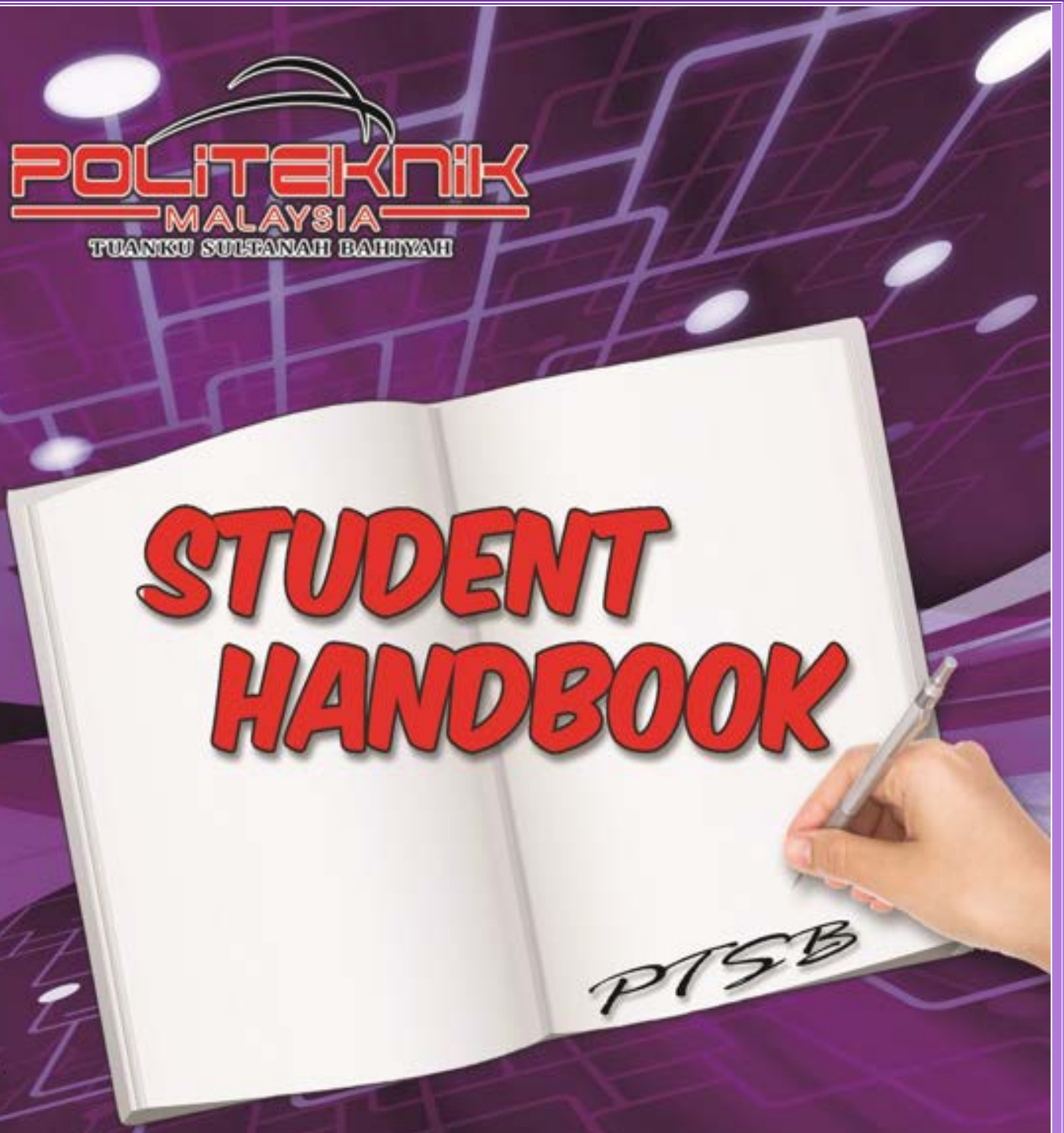
Continuous Assessment (CA) / Final Assessment = 40%
Final Examination (FE) = 20%
Total Passing Mark = 40%

ASSESSMENT AND EXAMINATION UNIT
ORGANIZATION CHART



POLITEKNIK
MALAYSIA
TUANKU SULTANAH BAHIYAH

STUDENT HANDBOOK



NON-ACADEMIC TEAM

6.1 STUDENT AFFAIR DEPARTMENT

This unit is structured into three divisions; Data & Intake, Discipline & Welfare and Student Representative Council / Majlis Perwakilan Pelajar (MPP). Each division is led by an officer assisted by other officers and 3 supporting staff in order to manage the particular job scope.

Division of Data & Intake

- Student intake
- New students' registration and seniors' self-report
- Student card application
- Switching polytechnics and courses
- Semester extension
- Students' study letter confirmation
- Students' quit letter confirmation
- Students' data and record

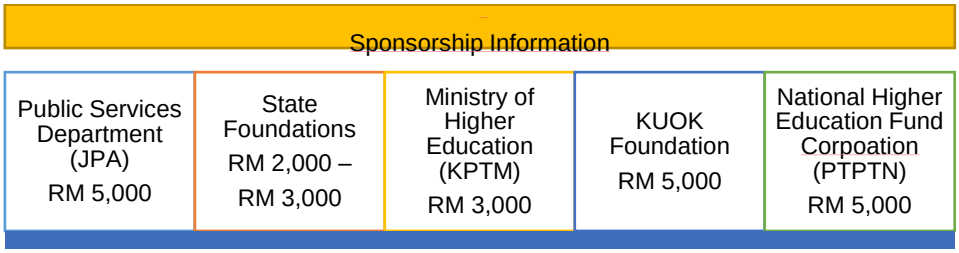
Division of Discipline & Welfare

i. Financial support Management

- Most of the diploma certificate and course students are funded by Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN) and Ministry of Education (MoE). The rests are sponsored by other sponsors such as State Foundation, Baitul Mal, State Zakat and Majlis Amanah Rakyat (MARA).
- Students can get guidance from Scholarship officers regarding procedures and information for financial support.

ii. Students' Welfare Management

- To manage students' insurance
  (PTSB students are insured by Syarikat Takaful Malaysia through Group Family Plan)
- To manage students' treatment letter
- To manage students' charity
- To report students' death and accident to particular parties
- To issue a student care letter if necessary
- To manage hostel placement for students
- To provide information about off-campus residential for students



iii. Students' Discipline Management

- To provide disciplines planning and management
- To handle cases of misconduct and disciplinary and trial procedures
- The discipline of PTSB Students is subject to ACT 174.


POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH
ETIKA PAKAIAN PELAJAR
" Personaliti Membentuk Jatidiri Berkualiti "
PAKAIAN FORMAL
Majlis Rasmi, Mesyuarat & Urusan Rasmi
- Kemeja lengan panjang bertali leher
- Baju sentiasa 'tuck-in'
- Seluar panjang 'slack'
- Berkasut pejabat & berstokin
- Pakaian kebangsaan
- Bersongkok hitam
- Memakai kad matrik
- Kemeja lengan panjang
- Seluar panjang
- Berkasut pejabat & berstokin
- Pakaian kebangsaan
- Baju kurung
- Bertudung (Muslim)
- Memakai kad matrik
PAKAIAN SEPARA FORMAL
Dewan Kuliah, Tutorial, Perpustakaan, Bangunan Pentadbiran dan Kafeteria
- Kemeja lengan panjang/pendek
- Baju T 'plain' berkolar
- Baju sentiasa 'tuck-in'
- Berseluar panjang 'slack' atau khakis
- Baju korporat
- Baju bengkel/amali
- Berkasut & berstokin
- Memakai kad matrik
- Kemeja lengan panjang
- Seluar panjang
- 'Blaus' sopan & kemas
- 'Skirt' labuh
- Baju kurung
- Baju korporat
- Baju bengkel/amali
- Bertudung (Muslim)
- Berkasut & berstokin
- Memakai kad matrik
PAKAIAN & PENAMPILAN YANG TIDAK DIBENARKAN SEMASA DI KAWASAN KAMPUS
PAKAIAN SUKAN
Yang Bersesuaian Ketika di Gelanggang/ Dewan Sukan/Bilik Gimnasium/ Padang & Majlis Sukan
- Baju T lengan panjang / pendek
- Seluar 'Track Bottom'
- Kasut sukan
- Berstokin
POTONGAN RAMBUT
Semasa Pengajian di Kampus
JABATAN HAL EHWAL & PEMBANGUNAN PELAJAR POLITEKNIK TUANKU SULTANAH BAHIYAH

iv. Student Orientation Week

- To chair and manage new students orientation week



v. Majlis Perwakilan Pelajar (MPP)

- To advise Committee Student Representative

MPP MAJLIS PERWAKILAN PELAJAR
POLITEKNIK TUANKU SULTANAH BAHIYAH

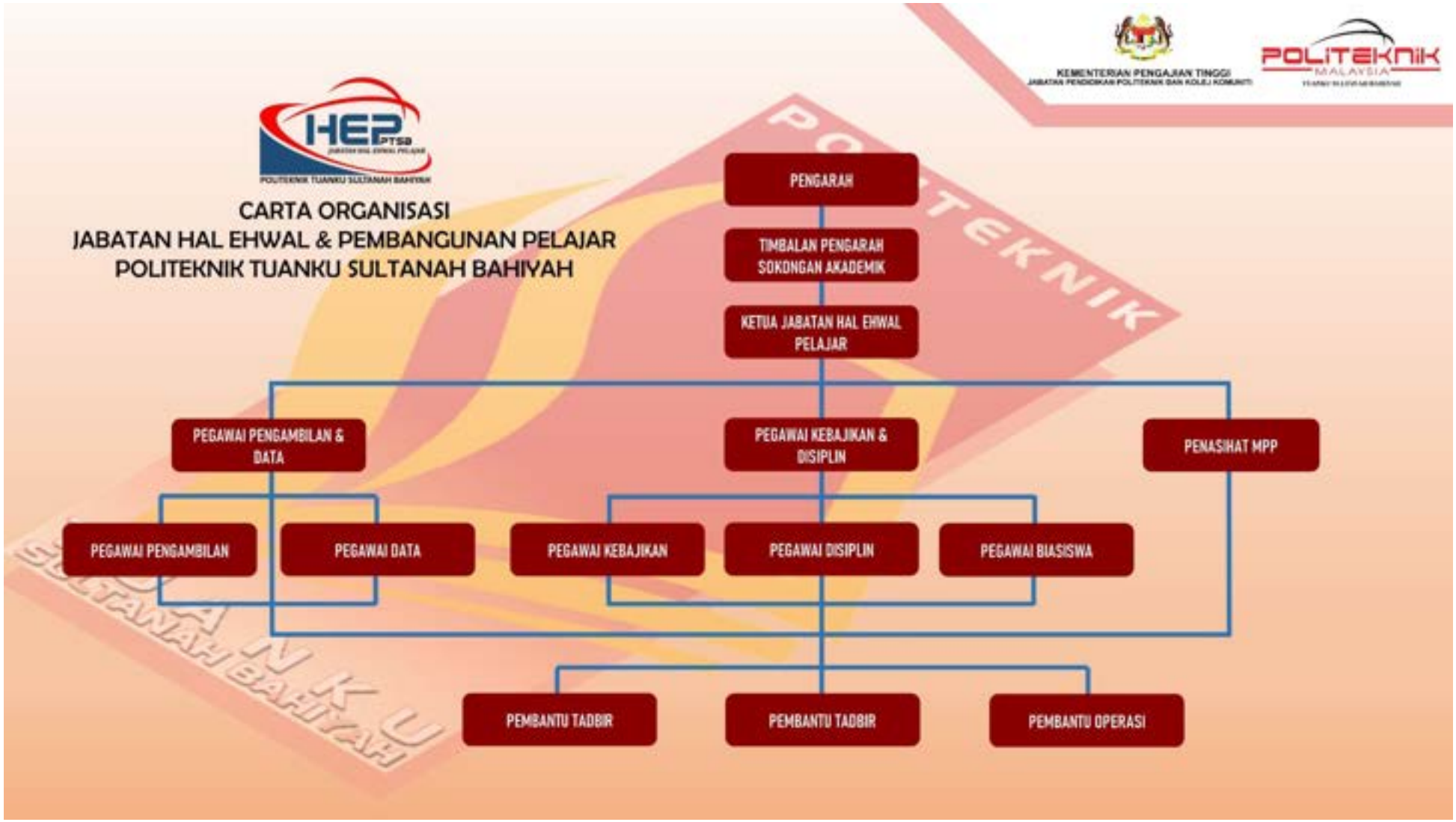
MPP is an abbreviation for the Majlis Perwakilan Pelajar which acts to represent students in all matters and expressed a student's view to a Polytechnic. MPP is also responsible for having an excellent student in skills, academics, sports and so on.

Majlis Perwakilan Pelajar (MPP) was established to develop the personality and ideas of a leader among students. MPP will be formed through learning, management, leadership, implementation of activities, council ethics and motivation to enable them to have different added value to other students. MPP has a role to assist management in identifying the needs and welfare of students. Apart from that, MPP also acted on campus by various agendas and activities for students.

vi. Student Vehicle Registration Management

- To manage matters regarding the registration of students' vehicles in campus
- To take action on traffic offenses according to the education institutions acts and methods

STUDENT AFFAIR DEPARTMENT
ORGANIZATION CHART



6.2 Sports Co-Curricullum and Culture Department

Sports Co-curriculum and Culture Department (SCCD) of Politeknik Tuanku Sultanah Bahiyah (PTSB) consist of Sports Unit, Co-Curriculum Unit and Culture Unit that is commitment to provide opportunities for student and staff to participate in all types of sports, health and fitness activities. SCCD is responsible for planning, organizing, implementing, coordinating, supervising and monitoring sports, co-curriculum and culture activities at polytechnic. The department also manages the equipment and ensures that facilities are at its best and provides quality service to customers.

Objectives

- To nurture young talents amongst PTSB students and at the same time to develop their potential to a higher level.
- To develop “The thinking athletes” among PTSB students as aligned by the aspiration of Ministry of Higher Education’s sports development policy.
- To promote to the community that the institution does not only emphasize on academic excellence, but is also active in co-curriculum and sports development.
- To encourage sportsmanship, friendship and positive competitive spirits among higher education institutions.

Courses offered

- Extra Curricullar (Route1-Sports and Club)
- Extra Curricullar (Route2-Uniform)

Facilities

- Football Field
- Rugby Field
- Tennis Courts
- Squasy Court
- Futsal Courts
- Netball Courts
- Badminton Courts
- Volleyball Courts
- Basketball Courts
- Ping Pong
- Gymnasium
- Paintball

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH

CARTA ORGANISASI
JABATAN SUKAN KOKURIKULUM DAN KEBUDAYAAN
2023

KETUA JABATAN
PPPT DH48
MUHAMAD SUJAIRI BIN YUSOF

KETUA KURSUS
PPPT DH44
LATIFAH BINTI HUSAIN

KETUA KURSUS
PPPT DH44
MOHD ZAIDI BIN YUSOF

PEGAWAI BELIA DAN SUKAN S44
NINA AZLINA BINTI ZAKARIA

PEGAWAI KEBUDAYAAN
PPPT DH48
RIDZUAN BIN DIN

PEMBANTU OPERASI
N11/N14
MOHAMAD FAIZAL BIN ABDUL RAHMAN

JSKK

Tarikh kemaskini : 1 Julai 2023

6.3 Psychology Management Unit

The Psychology Management Unit provides facilities where the clients (students, staff and community) are encouraged to maximize their potential. The unit also aimed to nurture good mental health among clients of the Politeknik Tuanku Sultanah Bahiyah.

The Psychology Officer is available to the clients to discuss and share information on education, academic purposes, vocational and technical, personal matters, emotions, social and health problems.

The main objective of the Psychology Management Unit is to help clients to get better understanding on themselves so that they can resolve any problems faced. Group activities are also planned from time to time, to develop communication and interaction skills, leadership skills, management and administration skills. Using this approach, it is hoped that the concept of awareness and responsibilities are nurtured to the clients.

Services :


01
Counseling Services are handled through individual or grouped counselling session.
02
Guidance and Enrichment Service is given through talks, seminars, workshops and forums.
03
Prevention activities like health programs covering physical and mental, drugs and AIDS/HIV prevention, stress management and others are organized.
04
Listing final year students to IPTA and IPTS for chances of further studies.

6.4 Library and Recources Centre

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. The library unit is also an instrument in inculcating the reading culture among PTSB and the local communities through an ongoing reading campaign. All staff and students can access all resources from the library freely. It also can accommodate up to 600 students at one time. In addition, carrel and discussion rooms as well as referral service, photocopying and internet service are also provided for students. Apart from using the materials in the library as a reference source, library users can also use online reference resources such as e-books and e-journals using smartphones via link http://www.u-library.gov.my/portal/web/guest/onlinedatabases.

PTSB Library or Perpustakaan Al-Khawarizmi has been upgraded (floor tiles) using RMK 11 budget and now has a new and refreshing image. Hence, this will attract the students and staff to use the library facilities regularly. The library has conducted many programs to enhance reading among PTSB staff and students since 2020. For example Book Corner competition and the online programs which involve students and staffs such as FB live books review, book review contest and book corner contest. Other than that, library has also taken an initiative to add more academic books collection by organizing book donation program named '1 Staf 1 Buku'.

Library Objectives

01 to be the main resource for staff and students in teaching and learning

02 to update the book collections and other references that currently needed by staff and students

03 to acquire relevant and current information for reference

04 to manage a collection of information using a standard system for easy access.

05 to provide quality information service and cultivate interest in reading

6.5 Student Residential College

The uniquely modern PTSB hostel can easily accommodate a total of 1404 students. Semester one students have the opportunity to benefit the facilities provided in the campus in addition to a comfortable and conducive living environment. Students are placed in the in the hostel to instill good learning habit, moral values integration and friendship among students of different races, religions and culture. Four blocks of which are V1, V2, V3 and V4 are especially for female students, whereas the other two blocks which are V5 and V6 are for male students. Each room is will be occupied by two students and equipped with basic facilities such as bed, mattress, study table, chair and cupboard.

Capacity of PTSB Residence for Students

	Male	Female
Total Block	3	3
Total Rooms	351	351
Total Beds	702	702

Hostel Facilities

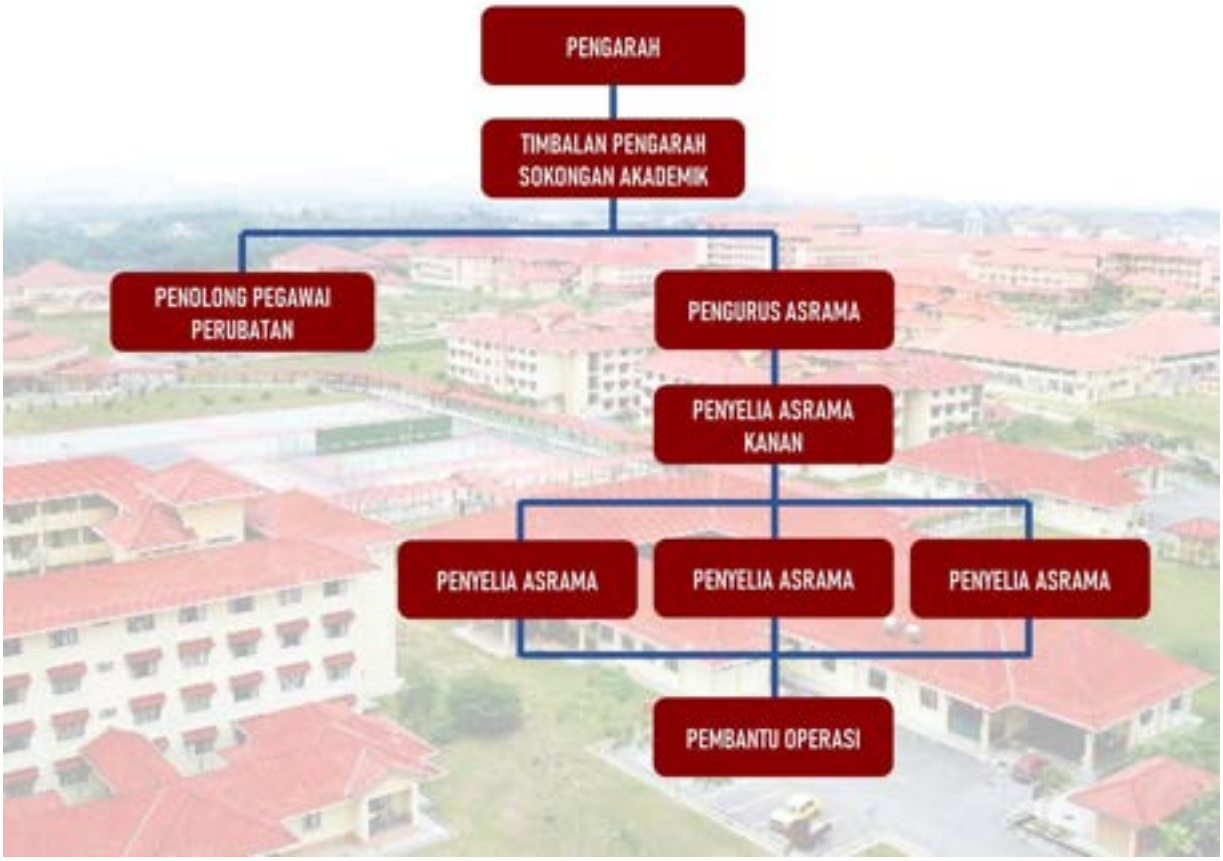
- Hostel Administration Office
- Hostel Warden Office
- Treatment Room
- Recreation and Rest Room
- Laundry Room
- Cafeteria
- Mini Market Under Coop
- Self Service Prepaid Laundry Service

STUDENT RESIDENTIAL COLLEGE ORGANIZATION CHART

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH

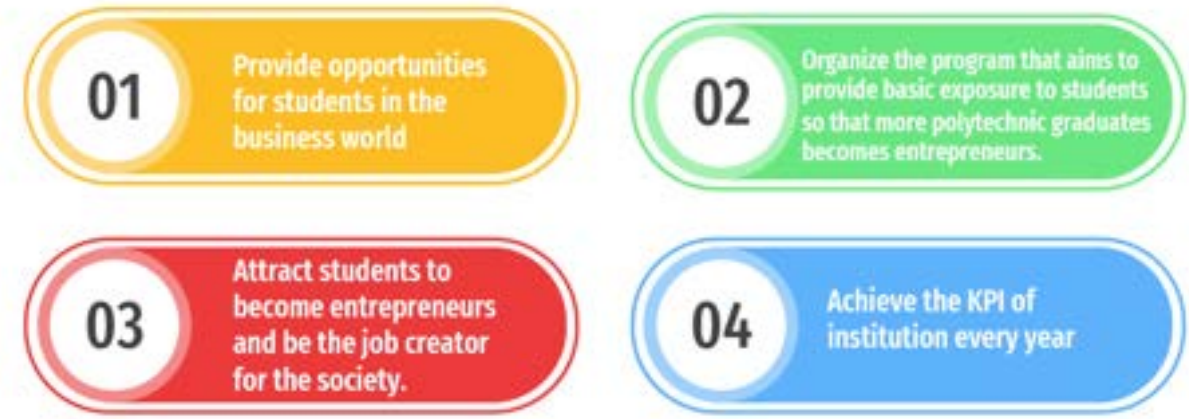
CARTA ORGANISASI
UNIT PENTADBIRAN KAMSIS
POLITEKNIK TUANKU SULTANAH BAHIYAH



6.6 ENTREPRENEURSHIP UNIT

Entrepreneurship Unit (UKES) acts as the main driver in increasing the level of innovation, creativity and competitiveness of a country. Entrepreneurship field has been recognized as a catalyst for economic development in Malaysia. In order to realize the vision and mission of the Entrepreneurship Development Policy for Institutions of Higher Learning, Politeknik Tuanku Sultanah Bahiyah has established the Entrepreneurship unit.

Service Function :



Entrepreneurship Activities :

01 Bazar MyAgrosis Ptsb

02 Program My Best Buy PTSB Bersama FAMA Kulim

03 Program Bisnes Pitching

04 Karnival Street Sale

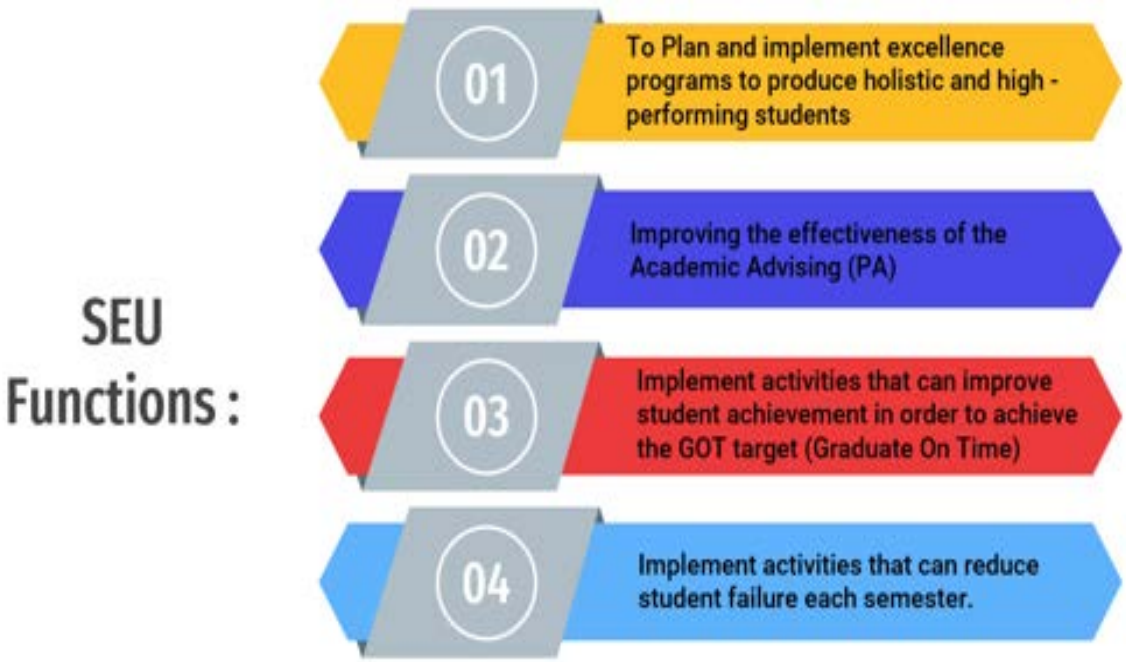
05 Entreprenuer Explorace IR 4.0 Bersama Mentor Alumni Dan PTime Resources

05 Workshop: Mini Project DIY Soap Using Recycled Cooking Oil

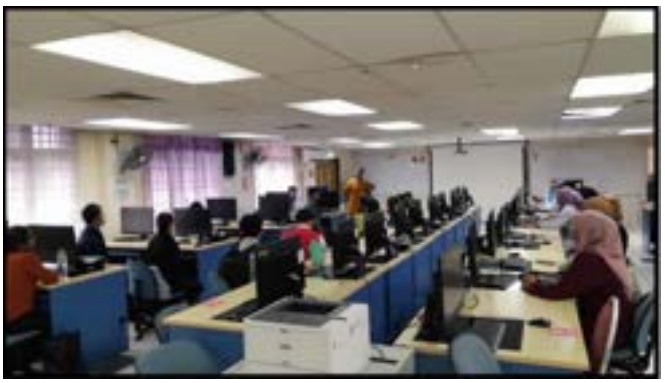
6.7 Students Excellence Unit

The Student Skills and Excellence Unit (SSEU) is a unit that plays a role in regulating and improving Student Skills and Excellence at Polytechnic Tuanku Sultanah Bahiyah (PTSB). It is divided into 5 important subunits;

1. Academic Counseling,
2. Student Excellence,
3. Polyskill,
4. Fira and,
5. External Competition

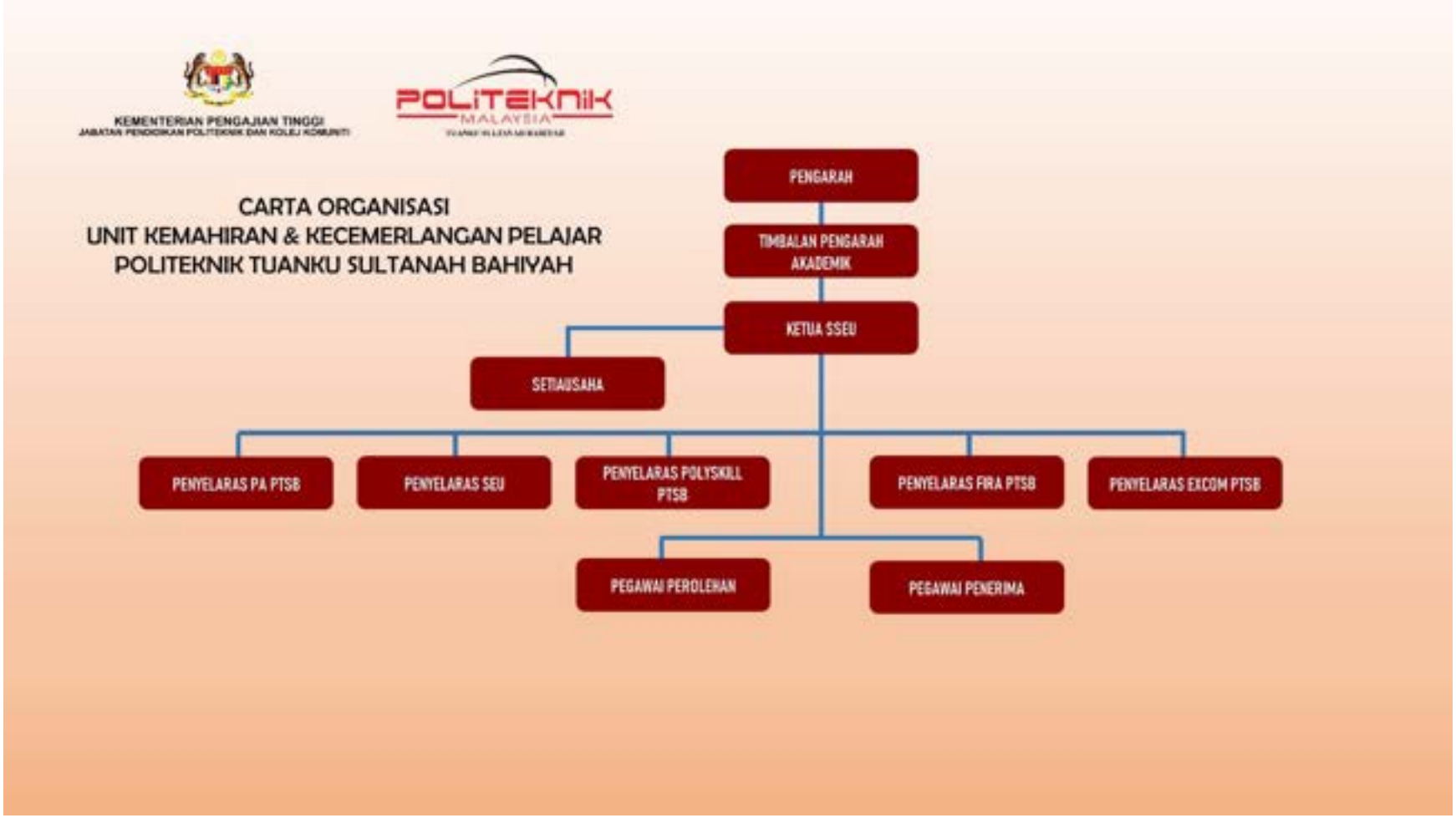



WHAT PEOPLE SEE
2016
WHAT PEOPLE DON'T SEE
PERSISTENCE
DEDICATION
HARD WORK
FAILURE
SACRIFICE
GOOD HABITS
DISSAPOINTMENT
recruitment
Everest Mission 2015
Cho Oyu
Mt. Blanc
Lobuche Peak
fund raising
earthquake 2015
campus life
teamwork
never give up
frostbite
accident
suspension



STUDENTS EXCELLENCE UNIT

ORGANIZATION CHART



6.8 INFORMATION AND TECHNOLOGY UNIT

INTRODUCTION

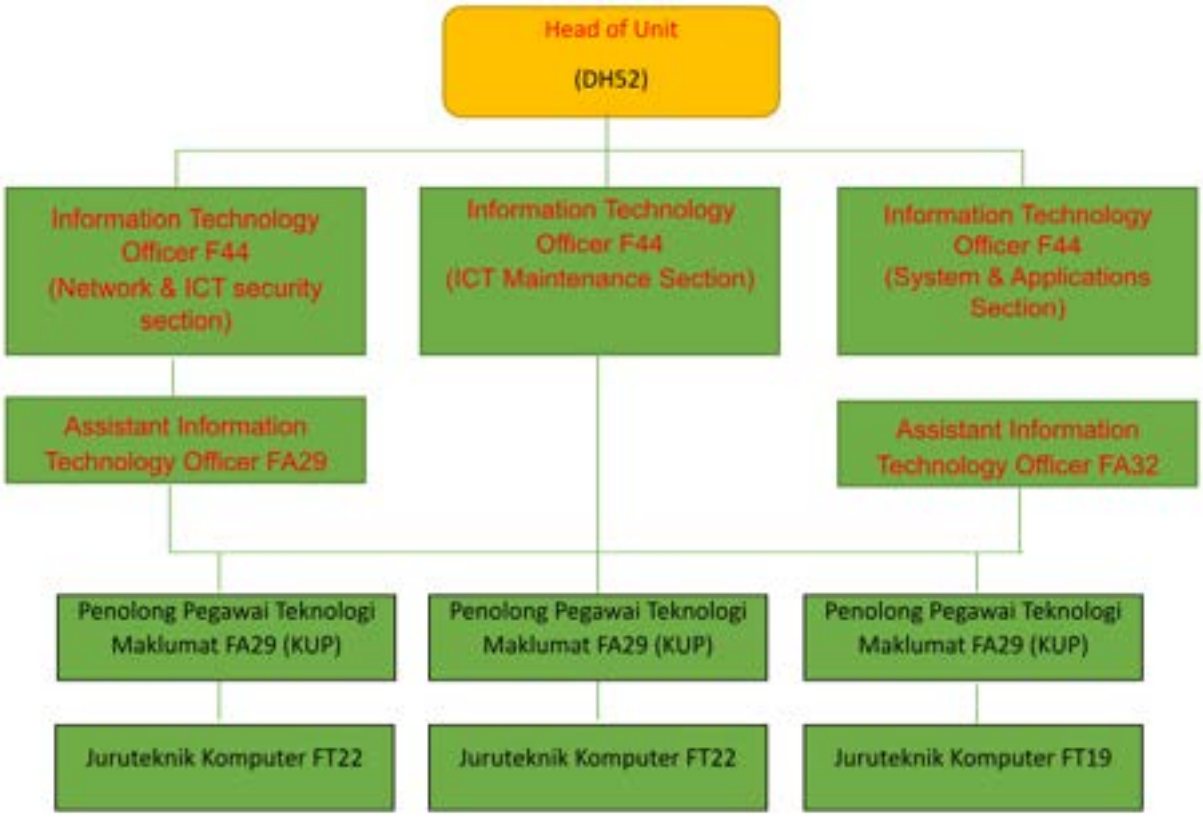
The Information Technology & Communication Unit (UTMK) is a unit that plays a role in maintaining ICT hardware and software, administering and updating application and data systems and providing computer network infrastructure at the Tuanku Sultanah Bahiyah Polytechnic campus (PTSB).

FUNCTIONS & ROLE OF UTMK

I. Manage and implement maintenance of ICT hardware and software as well as application system
II. Planning and implementing the procurement of spare parts, assets and ICT facilities
III. Develop, administer and update online systems and applications
IV. Manage server administration, ICT security and campus network
V. Manage the adoption and implementation of new systems and applications
VI. Planning and managing the implementation of training and inculcating the use of ICT for PTSB staff

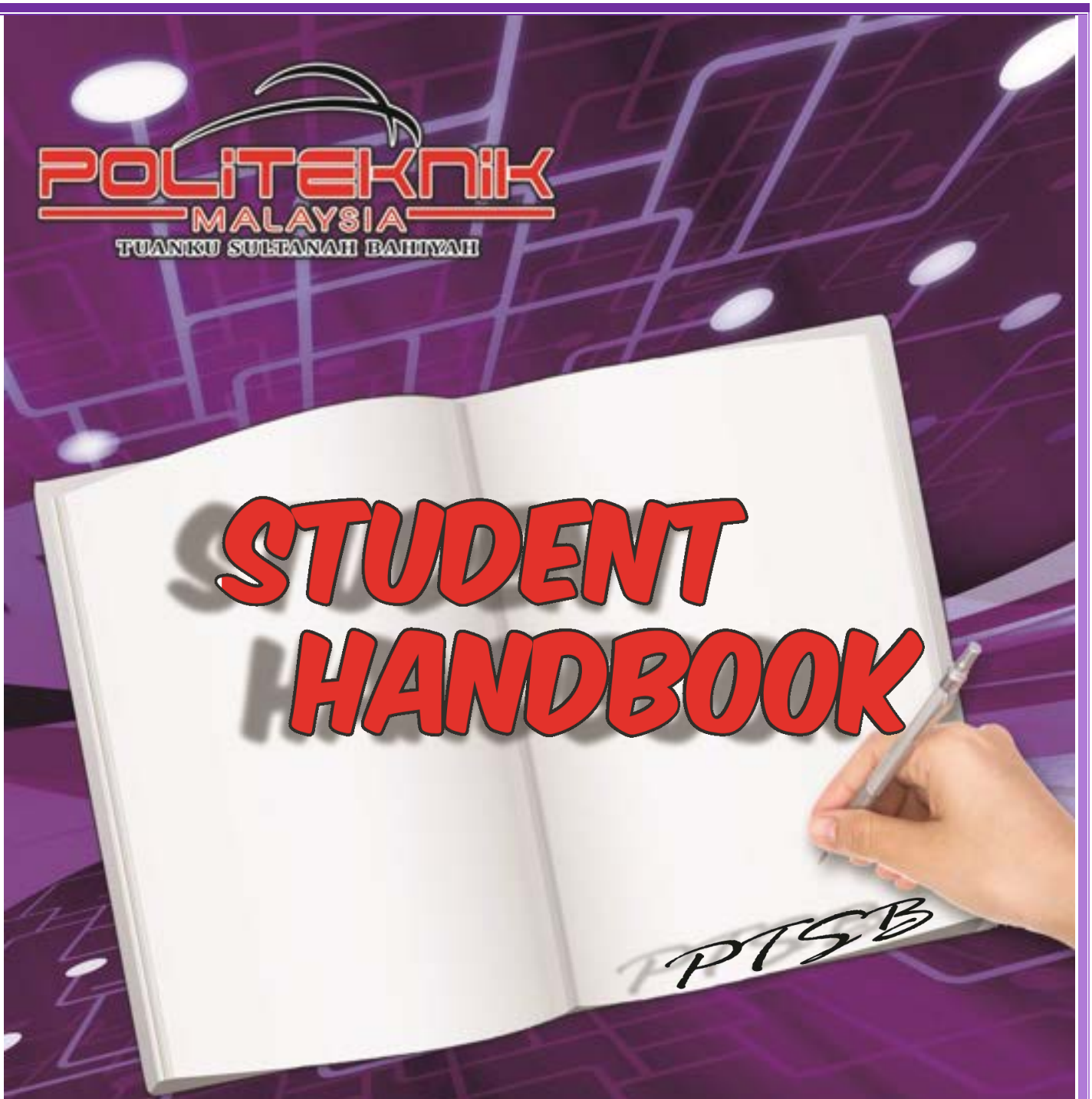
INFORMATION AND TECHNOLOGY UNIT

ORGANIZATION CHART



POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH

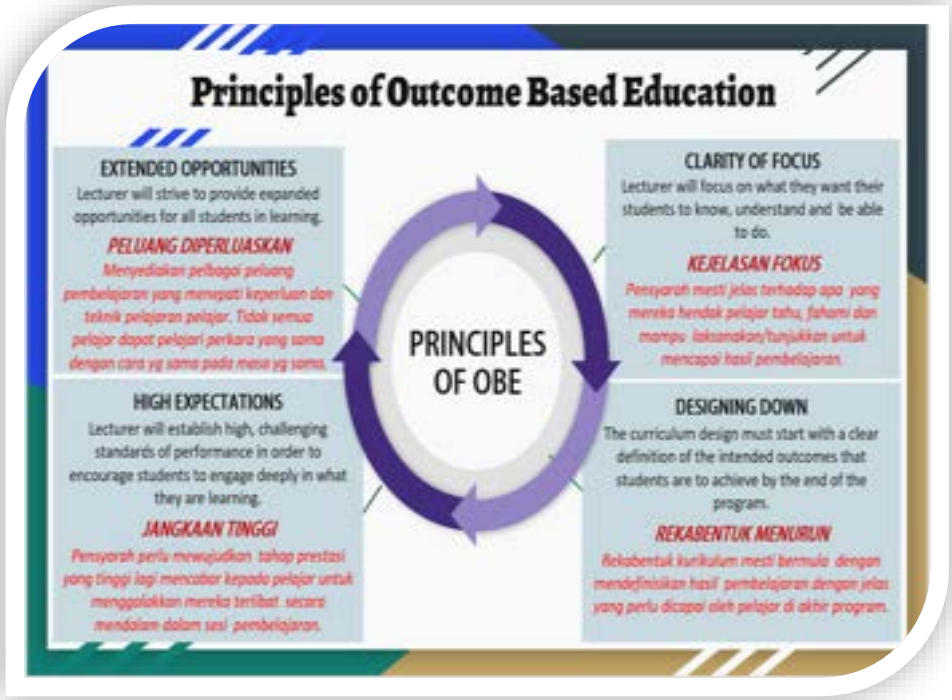
STUDENT HANDBOOK



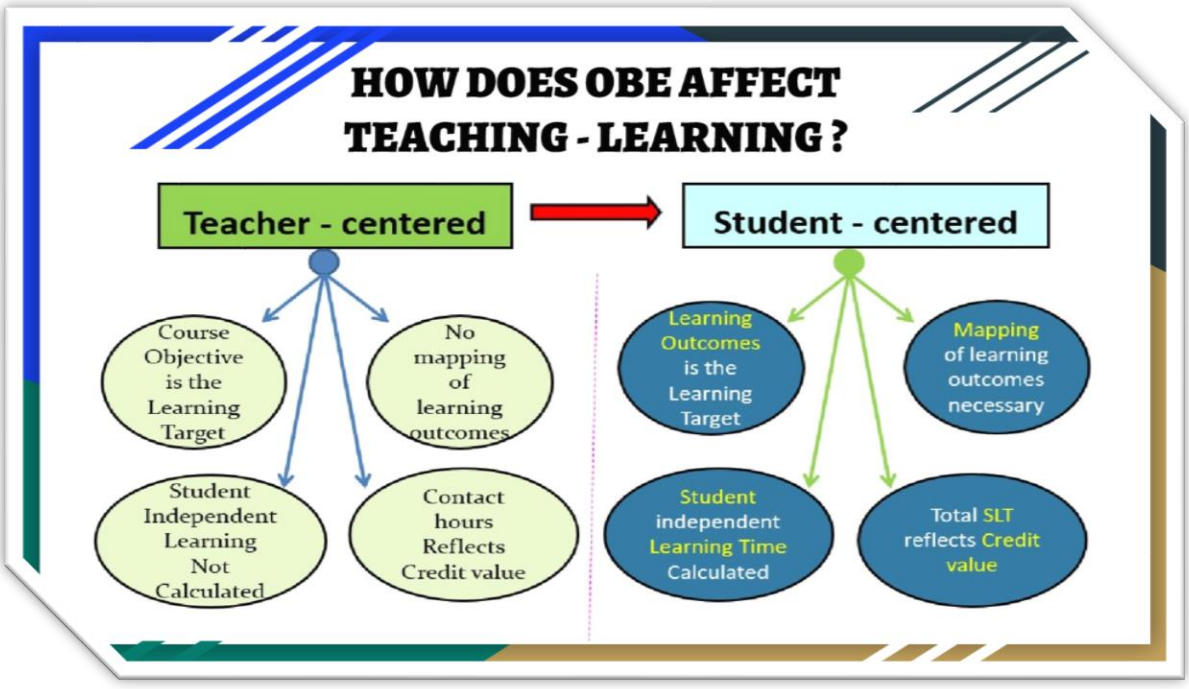
OUTCOME BASED EDUCATION

7.1 WHAT IS OBE?

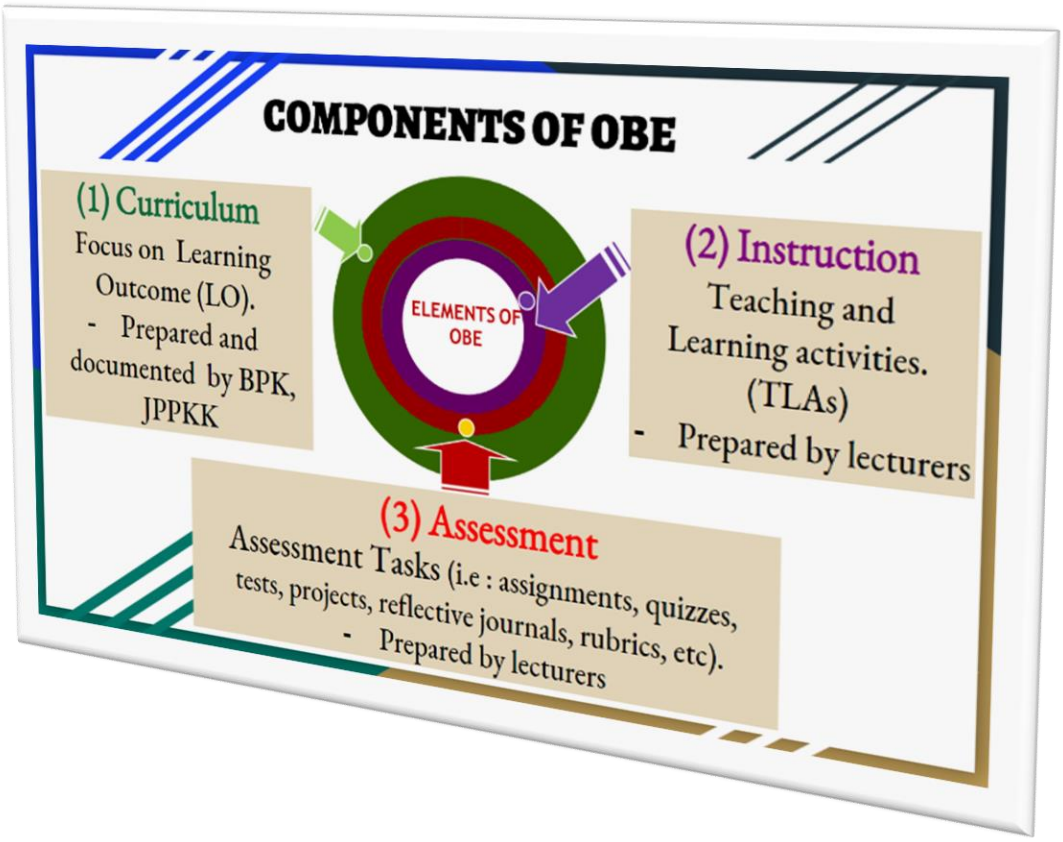
OBE is a holistic method to develop a student based on defined goals and desired outcomes. Hence, it is…

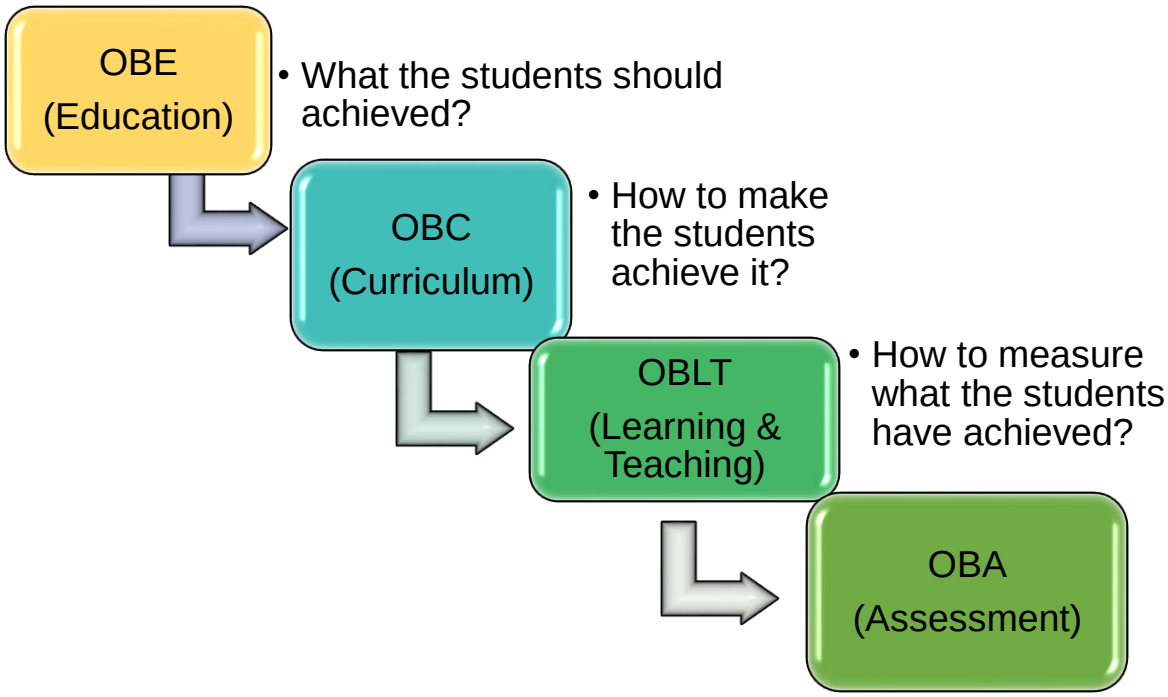


- a method of curriculum design and teaching that focuses on what students can actually **DO** after they are taught.
- Focusing on the outcomes of program implementation.
- Implemented to ensure that our academic programs, curriculum, delivery system, assessment methods and our graduates meet the requirement of international standards.



7.2 Components of OBE?



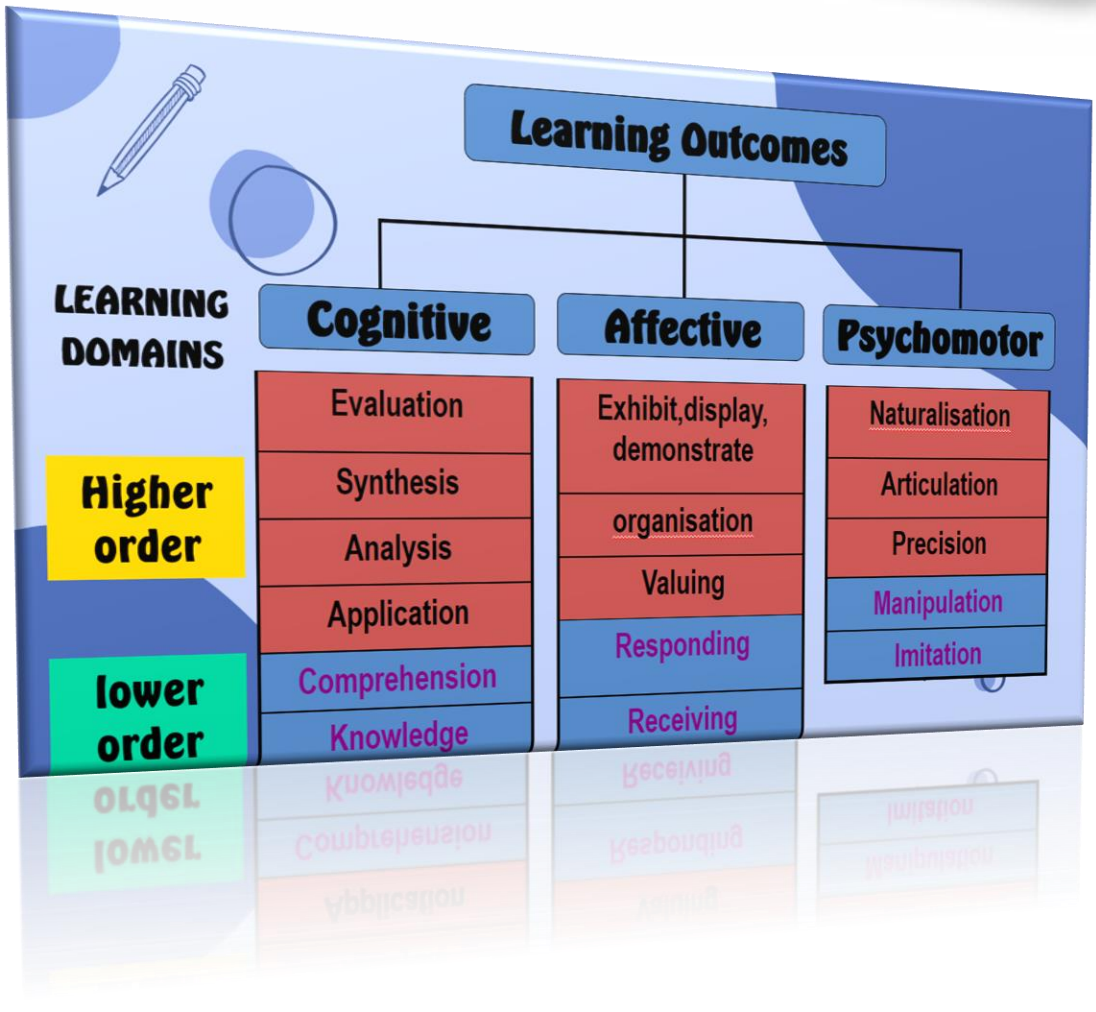


7.3 The OBE Impact

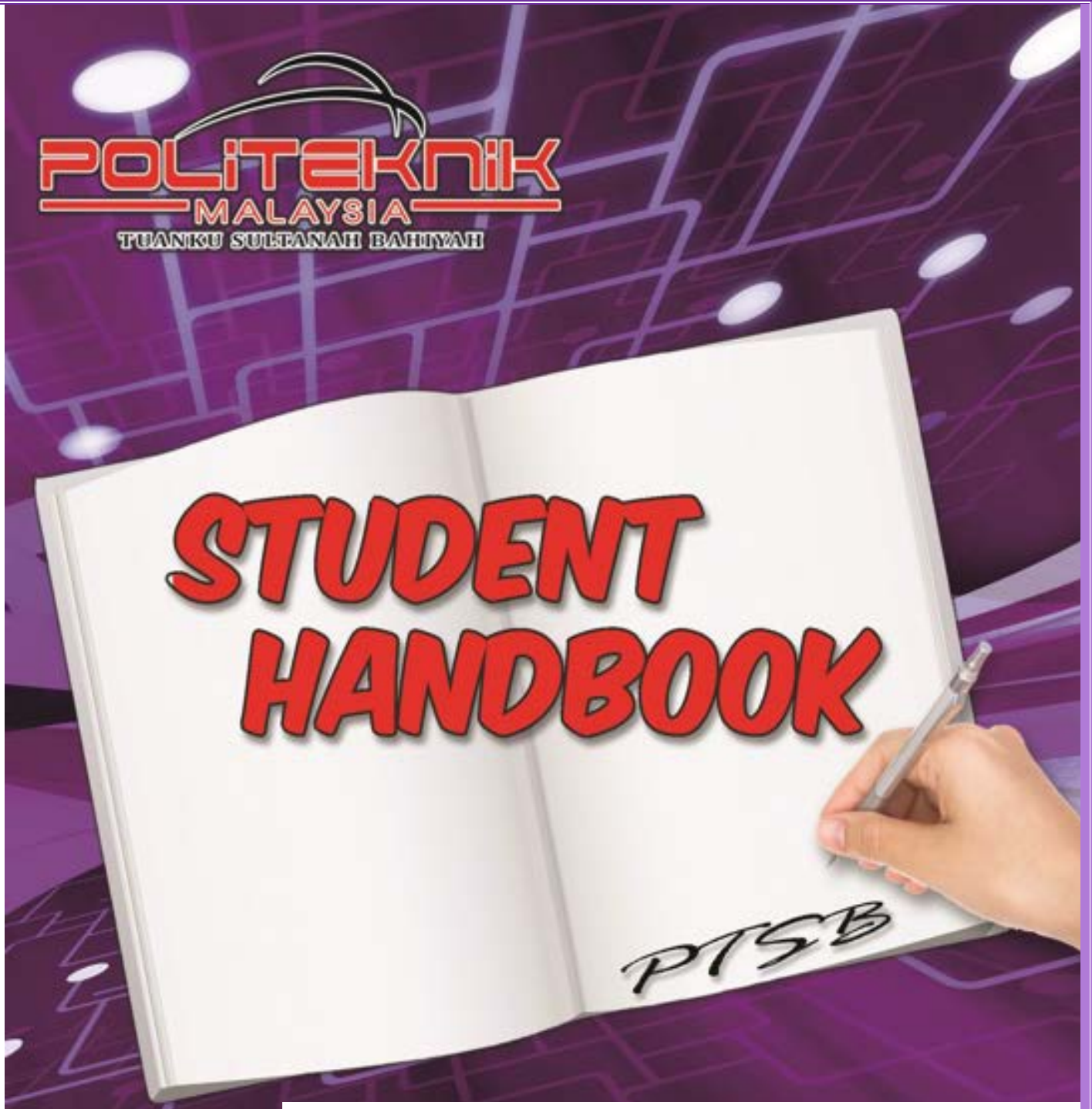
Why are Learning Outcomes important?

They are essential because they:

- Define the type and depth of learning, students are expected to achieve.
- Provide an objective benchmark for formative, summative, and prior learning assessment.
- Clearly communicate expectations to learners.



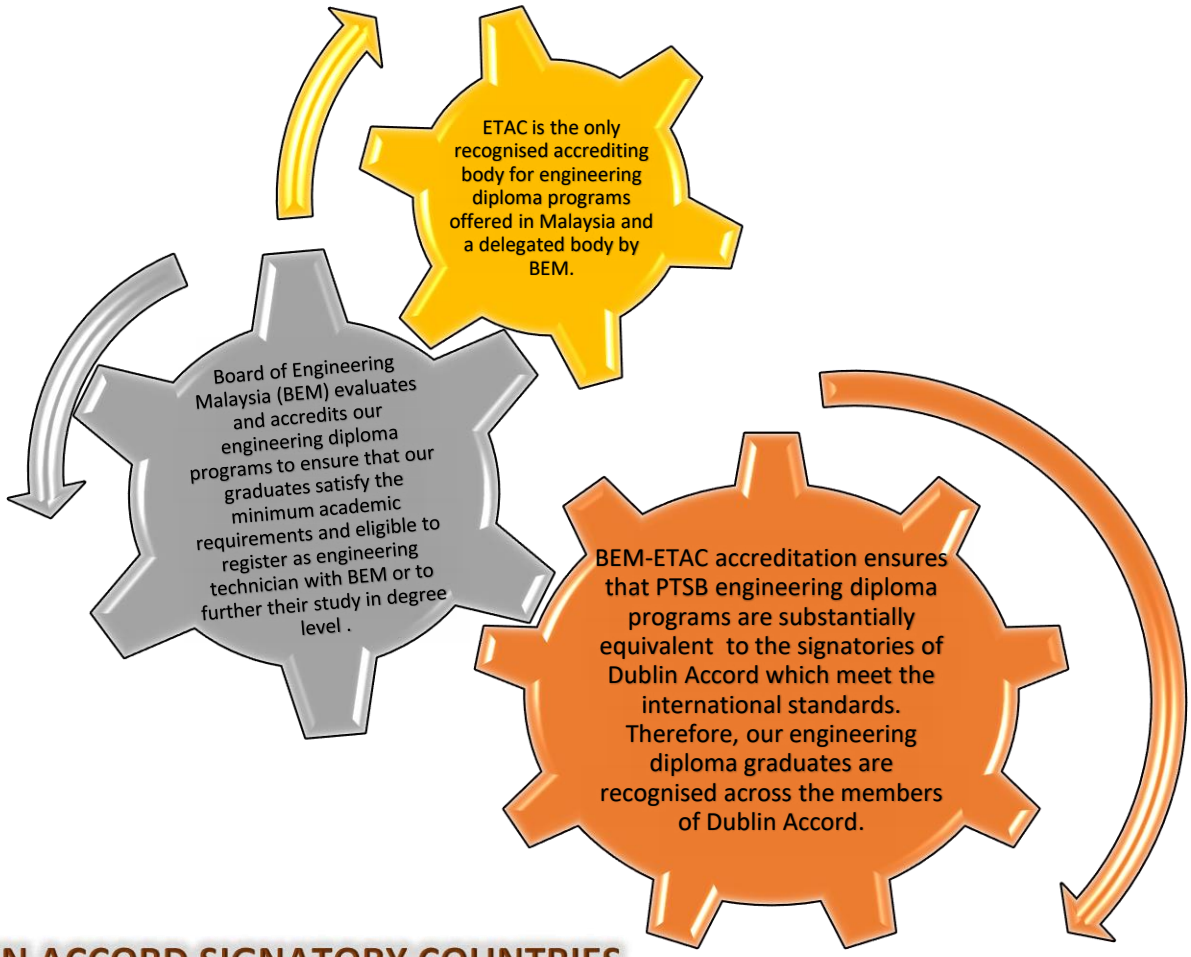
POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH



AWARENESS OF ETAC & MQA

8.1 Overview Of ETAC

ENGINEERING TECHNOLOGY ACCREDITATION COUNCIL



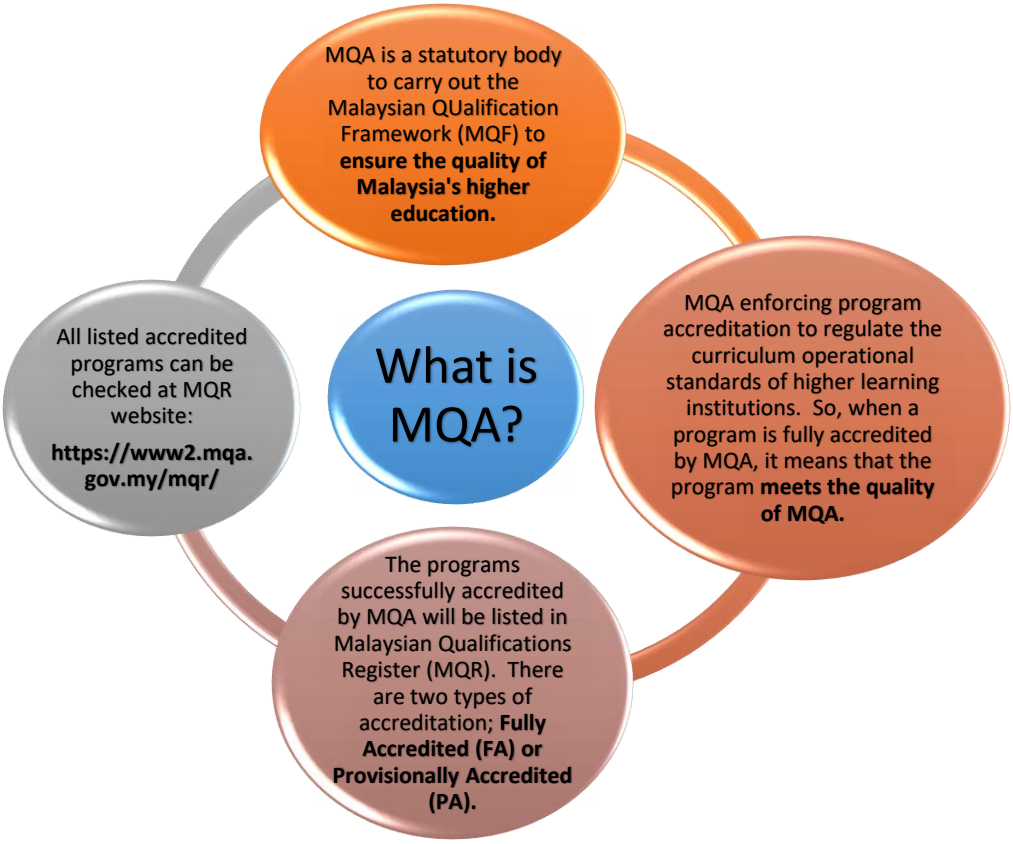
DUBLIN ACCORD SIGNATORY COUNTRIES

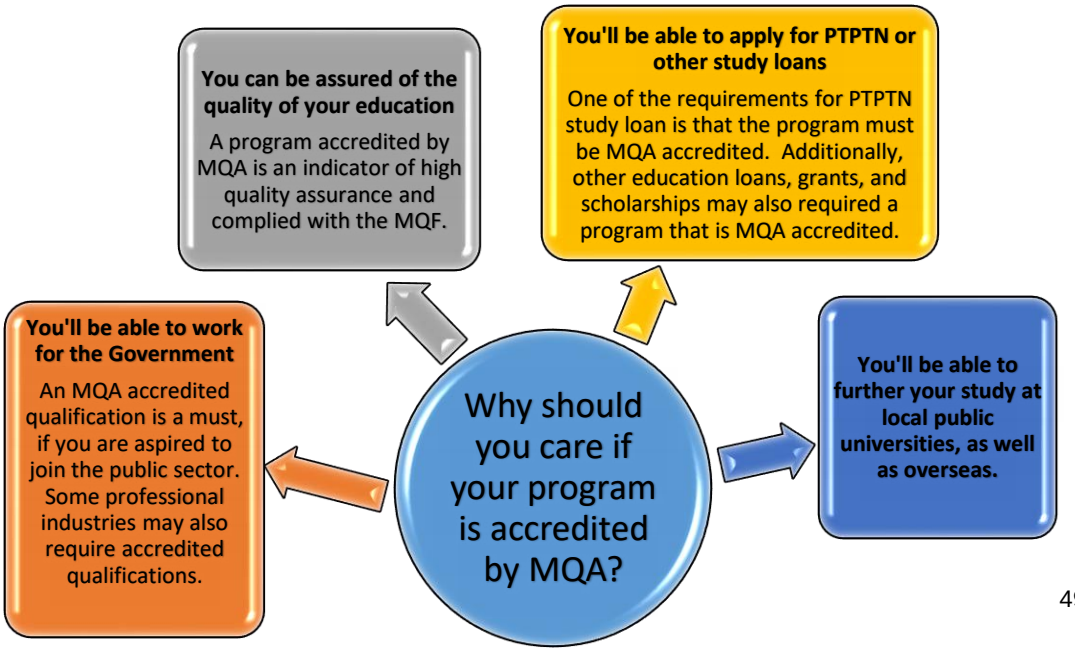
- Australia
- Canada
- Ireland
- New Zealand
- Korea
- South Africa
- United Kingdom
- United States

MALAYSIA (represented by BEM since 2018)

8.2 Overview Of MQA

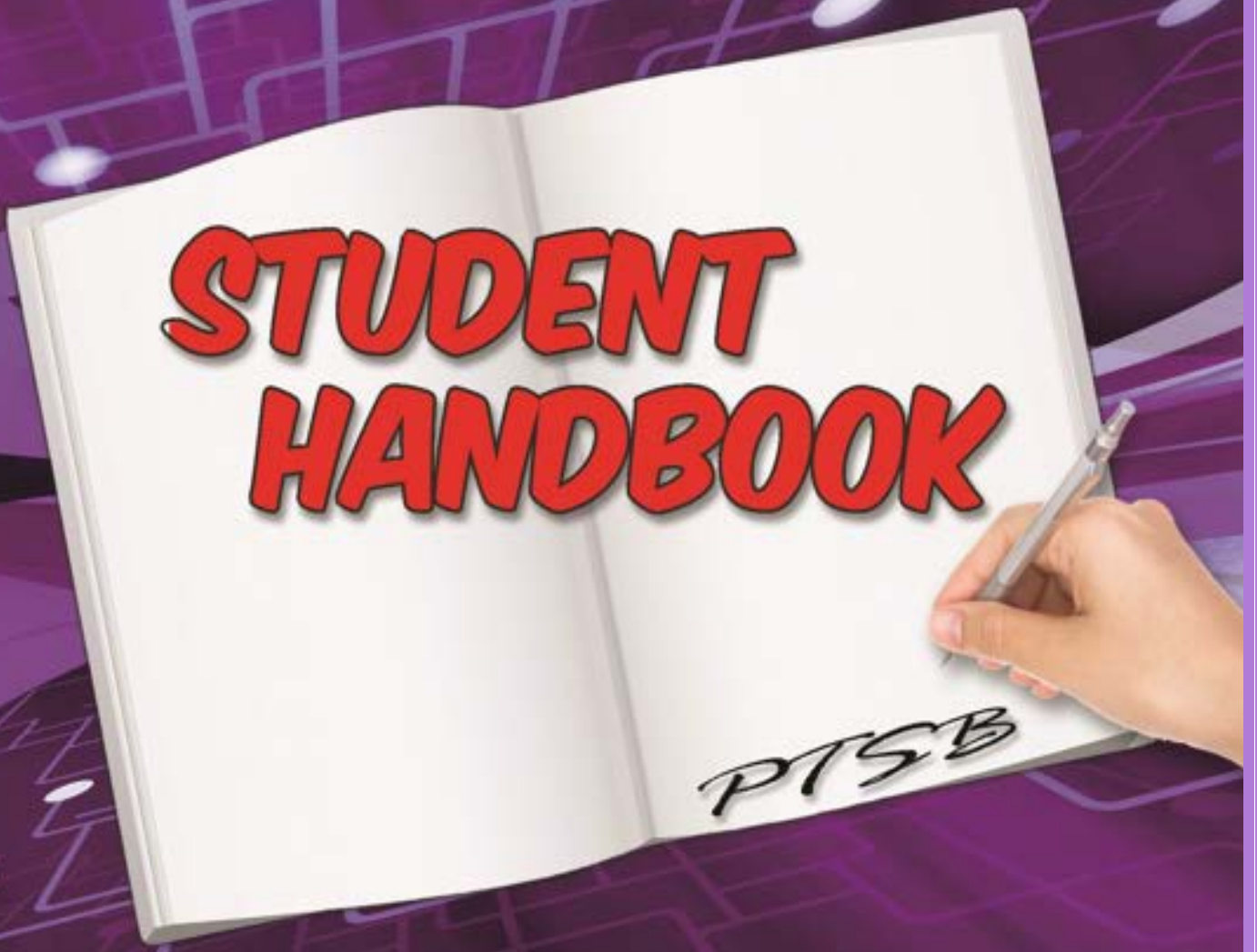
MALAYSIAN QUALIFICATIONS AGENCY





POLITEKNIK MALAYSIA
TUANKU SULTANAH BAHIYAH

STUDENT HANDBOOK

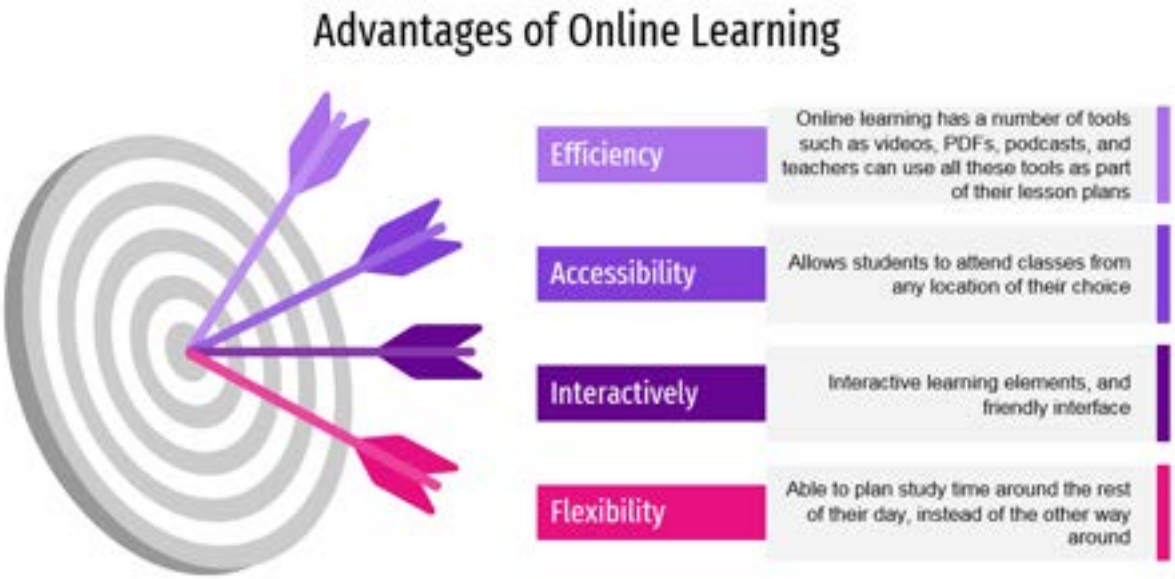


BLENDED LEARNING

9.1 e-Learning & Blended Learning

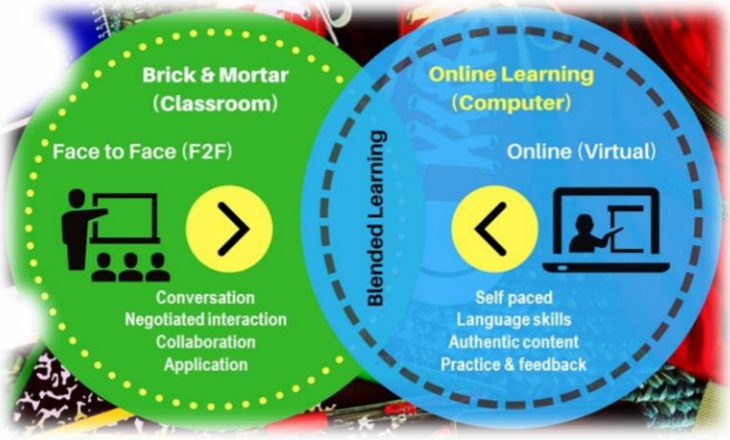
WHAT IS e-LEARNING?

In essence, e-Learning is a computer based educational tool or system that enables you to learn anywhere and at any time. e-Learning is the way of learning which connected to electronic media.
The courses are available 24 hours a day, 7 days a week, and can be access from anywhere as long as the student has the internet access, and computer or smart phone.



WHAT IS BLENDED LEARNING?

Blended learning combines online delivery of educational content with the best features of classroom interaction and live instruction to personalize learning, allow thoughtful reflection and differentiate instruction from student to student across a diverse group of learners.



Blended learning involves:

- Courses that integrate online with face to face activities.
- Courses that are taught both in the classroom (face to face) and at a distance.
- Mixing or combining instructional technology with actual job tasks, in order to create harmonious effect of teaching and learning.
- Combining computers with traditional teaching. It is also referred to as reverse teaching, flip classroom, backwards classroom, or reverse instruction.

EMPOWERING DIGITAL LEARNING

e-learning
POLITEKNIK TUANKU SULTANAH BAHIYAH

Digital Materials

Development and coordination of PTSB digital teaching and learning materials (ebook & TnL video)

Short TVET PTSB

CIDOS

Consumption empowerment of Learning Management System (LMS) CIDOS

eDOLA

Involvement and participation of lecturers and students in the CIDOS Inspiring Learning Award (eDOLA) competition

TECC

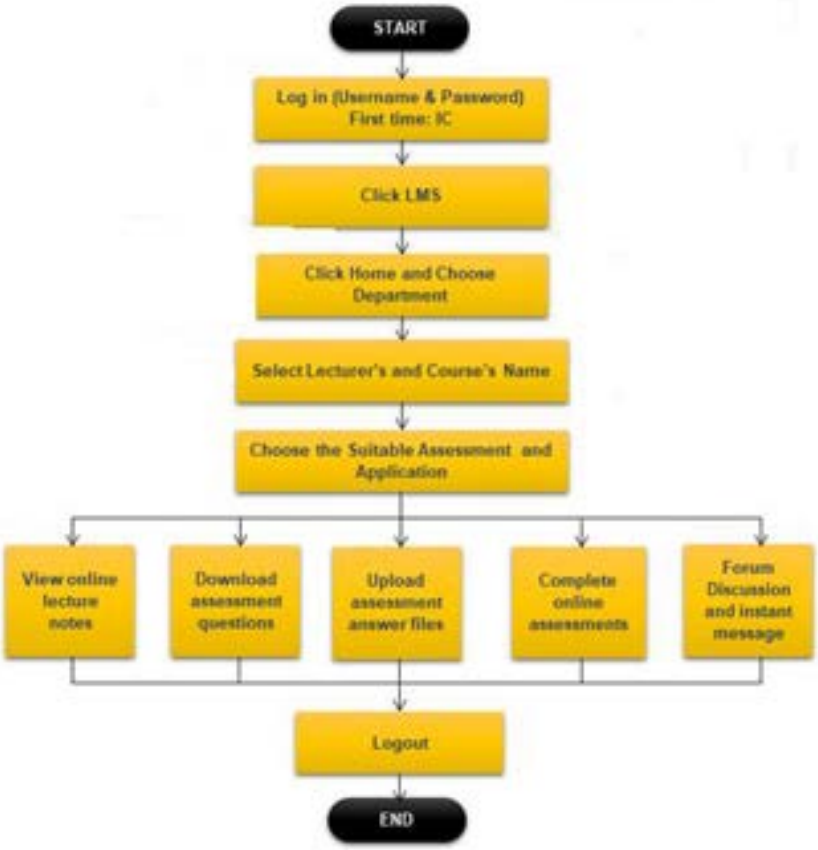
Use of Technology Enable Collaborative Classroom (TECC) in TnL activities

Technology Skills

Improvement of lecturers' skills in the latest technology skills for e-Learning

9.2 PORTAL CIDOS LMS MALAYSIA

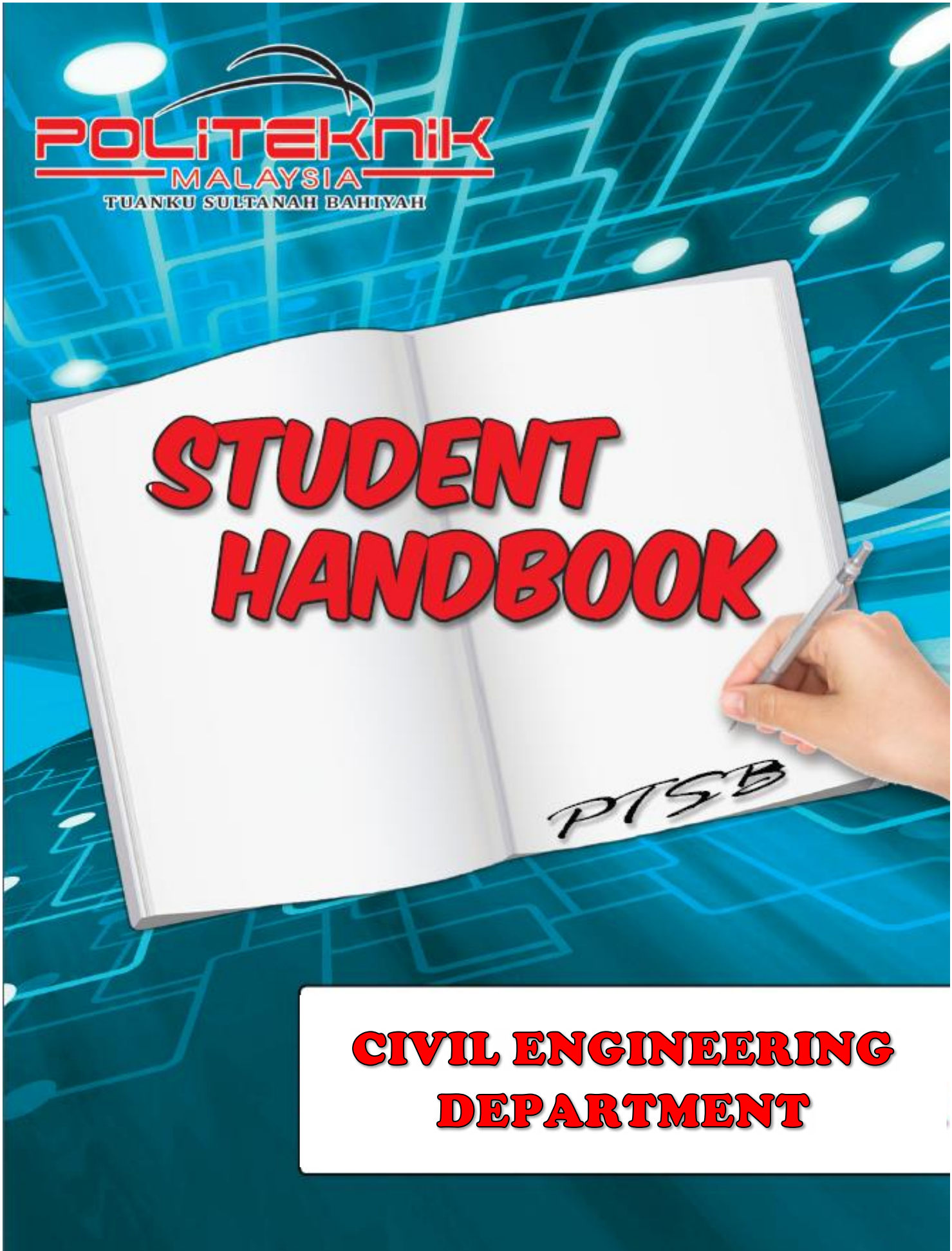
https://polycc.cidos.edu.my



9.3 Technology Enabled Collaborative Classroom (TECC)

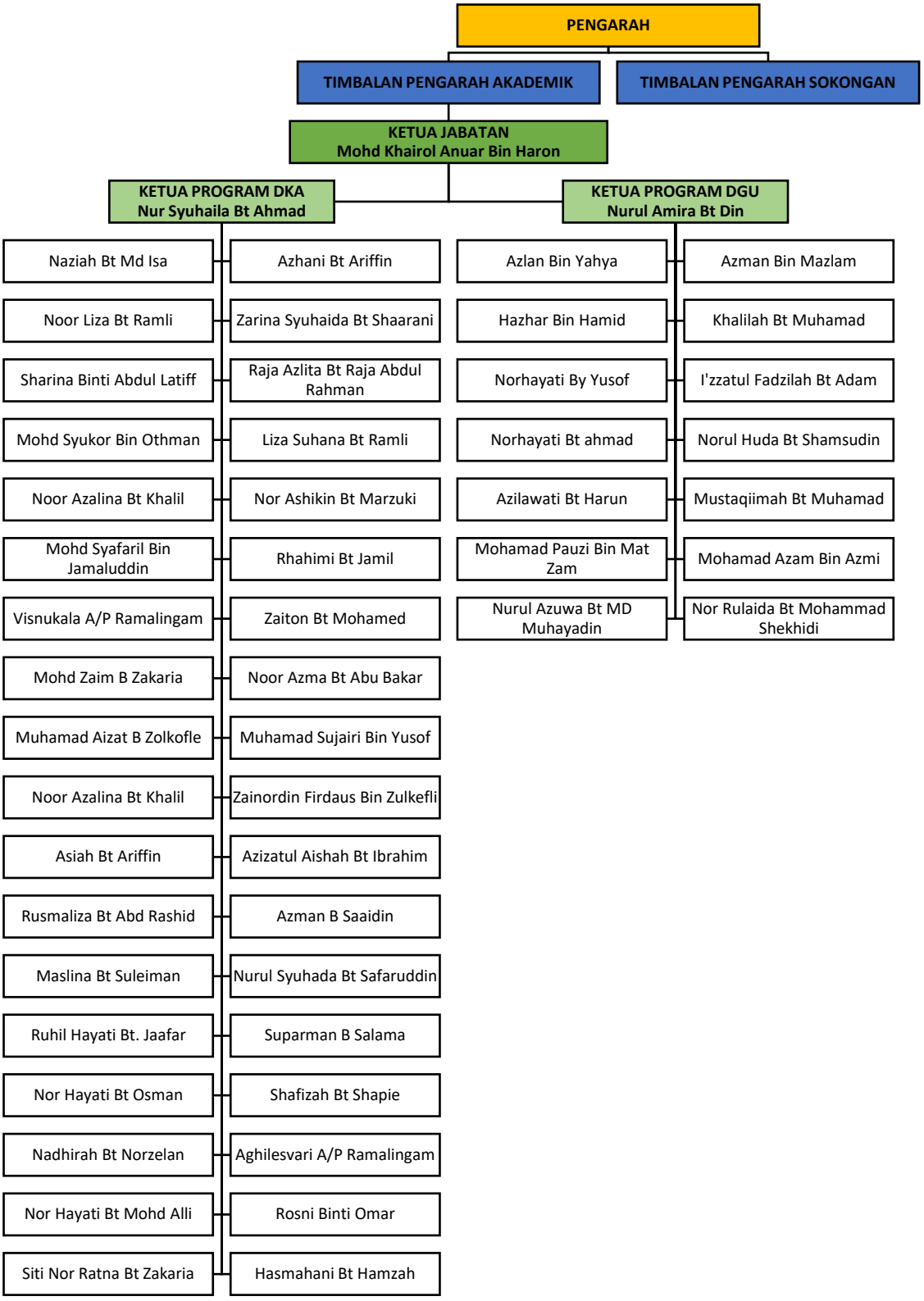
Collaborative classrooms are another tool in the educator's resource to achieve their mission of improving learning outcomes. The design of the collaborative classroom emphasizes group learning. Collaborative designs are extremely flexible and fully compatible with emerging styles of learning, including personalized learning, flipped classroom, and gamification.

POLITEKNIK
MALAYSIA
TUANKU SULTANAH BAHIYAH



CIVIL ENGINEERING DEPARTMENT

ORGANIZATION CHART



10.2 ENTRY REQUIREMENTS

The implementation of the policies towards achieving the targeted enrollment is oversees by the Student Admission Division with the support of Student Affairs Department in the respective polytechnics.

10.2.1 Process for Admission

Student admission is carried out twice a year, in June and December respectively during the June intake, application is done through Centralised Admission Agency at the Ministry of Higher Education via the http://upu.mohe.gov.my. Application for the December intake is opened via the Student Admission Division portal at http://politeknik.edu.my. Both intakes are done using online application procedures.

Admission requirements and all information related to admission can be obtained from the student admission portal at http://politeknik.edu.my.

10.2.2 For Malaysian Certificate of Education (SPM) holders:

- Malaysian Citizen
- Has PASSED SPM or its equivalent and meets the following minimum entry requirements:
    i. Pass in Bahasa Melayu
    ii. Pass in English Language
    iii. Pass in History (SPM 2013 onwards)
    iv. THREE (3) credits for the following subjects in SPM
        - Mathematics or Additional Mathematics
        - One (1) subject from the science/technical/vocational grouping of subjects
        - Any subjects not accounted for from (i, ii, iii, & iv)
        - Or any other credit that has not been included
        - Does not have any disability that will hinder practical work.

10.2.3 Ministry of Education Malaysia (KPM) Matriculation Certificate holders:

- Malaysian Citizen
- Has PASSED the Ministry of Education's Matriculation Program

10.2.4Name Of Lecturers

No.	Name	Ext	Code	Emel
1	Mohd Khairul Anuar B Haron	2012	CMKA	khairulanuar@ptsb.edu.my
2	Nur Syuhaila Bt Ahmad	2282	CSYU	syuhaila@ptsb.edu.my
3	Nurul Amira Binti Din	2273	CMRA	amira@ptsb.edu.my
4	Aghilesvari A/P Vijakumaran	2295	CAGH	aghi@ptsb.edu.my
5	Asiah Bt Ariffin	2288	CASA	asiah@ptsb.edu.my
6	Azhani Bt Ariffin	2286	CABA	azhani@ptsb.edu.my
7	Azizatul Aishah Bt Ibrahim	2286	CAZZ	azizatulaishah@ptsb.edu.my
8	Azman B Saaidin	2279	CABS	azman_saaidin@ptsb.edu.my
9	Dr. Rhahimi Binti Jamil	2286	CRHA	rhahimi@ptsb.edu.my
10	Dr. Rossitah Binti Selamat	2295	CRTH	rossitah@ptsb.edu.my
11	Hafizulhadi B. Rahim	2279	CHAD	hafizulhadi@ptsb.edu.my
12	Hasmahani Bt Hamzah	2295	CANI	hasmahani@ptsb.edu.my
13	Liza Suhana Bt Ramli	2288	CLSR	liza@ptsb.edu.my
14	Maslina Bt Suleiman	2298	CMLN	maslina@ptsb.edu.my
15	Mohd Shukor Bin Othman	2277	CSHU	shukor@ptsb.edu.my
16	Mohd Syafaril Bin Jamaluddin	2274	CMSJ	syafaril@ptsb.edu.my
17	Mohd Zaim B Zakaria	2282	CMZZ	zaim@ptsb.edu.my
18	Muhamad Aizat B Zolkofle	2493	CAZT	aizat@ptsb.edu.my
19	Muhamad Sujairi Bin Yusof	2045	CMSY	sujairi@ptsb.edu.my
20	Nadhirah Bt Nor Zelan	2286	CNDR	nadhirah@ptsb.edu.my
21	Naziah Bt Mohd Isa	2272	CNAZ	naziah@ptsb.edu.my
22	Noor Azalina Bt Khalil	2289	CNAK	azalina@ptsb.edu.my
23	Noor Azma Bt Abu Bakar	2289	CNAB	azma@ptsb.edu.my
24	Noor Liza Bt Ramli	2279	CNLR	noor_liza@ptsb.edu.my
25	Nor Ashikin Bt Marzuki	2286	CNAM	ashikin.marzuki@ptsb.edu.my
26	Nor Hayati Bt Mohamad Alli	2294	CYMA	nor_hayati@ptsb.edu.my
27	Norhayati Bt Osman	2295	CNBO	yati@ptsb.edu.my
28	Nurul Syuhada Bt Safaruddin	2281	CNSS	nurul.syuhada@ptsb.edu.my
29	Raja Azlita Binti Raja Abdul Rahman	2289	CRAR	rajaazlita@ptsb.edu.my
30	Rosni Binti Omar	2293	CRSN	rosni@ptsb.edu.my
31	Ruhil Hayati Bt. Jaafar	2295	CRUH	ruhil@ptsb.edu.m
32	Rusmaliza Bt Abdul Rashid	2288	CRLZ	rusmaliza@ptsb.edu.my
33	Shafizah Bt Shafiai @ Shafii	2289	CSFH	shafizah@ptsb.edu.my
34	Sharina Binti Abdul Latiff	2297	CSAL	Sharina.Alatiff@Ptsb.Edu.My
35	Siti Noor Ratna Bt Zakaria	2294	CRAT	ratna@ptsb.edu.my
36	Suparman B Salama	2374	CSUP	suparman@ptsb.edu.my
37	Ts. Zarina Syuhaida Binti Shaarani	2297	CZRN	zarina@ptsb.edu.my
38	Visnukala A/P Ramalingam	2289	CVIS	visnukala@ptsb.edu.my
39	Zainordin Firdaus Bin Zulkefli	2295	CZFZ	zainordin@ptsb.edu.my

No.	Name	Ext	Code	Emel
40	Visnukala A/P Ramalingam	2289	CVIS	visnukala@ptsb.edu.my
41	Zaiton Bt Mohammed	2288	CZTN	zaiton_mohd@ptsb.edu.my
43	Azilawati Binti Harun	2274	CAZH	azilawati@ptsb.edu.my
44	Azlan Bin Yahya	2434	CAZL	azlan@ptsb.edu.my
45	Azman Bin Mazlam	2434	CAMM	azmanmazlam@ptsb.edu.my
46	Hazhar Bin Hamid	2262	CHBH	hazhar@ptsb.edu.my
47	Izzatul Fadzilah Bt Adam	2272	CIFA	izzatul@ptsb.edu.my
48	Khalilah Binti Muhamad	2274	CKBM	khalilah@ptsb.edu.my
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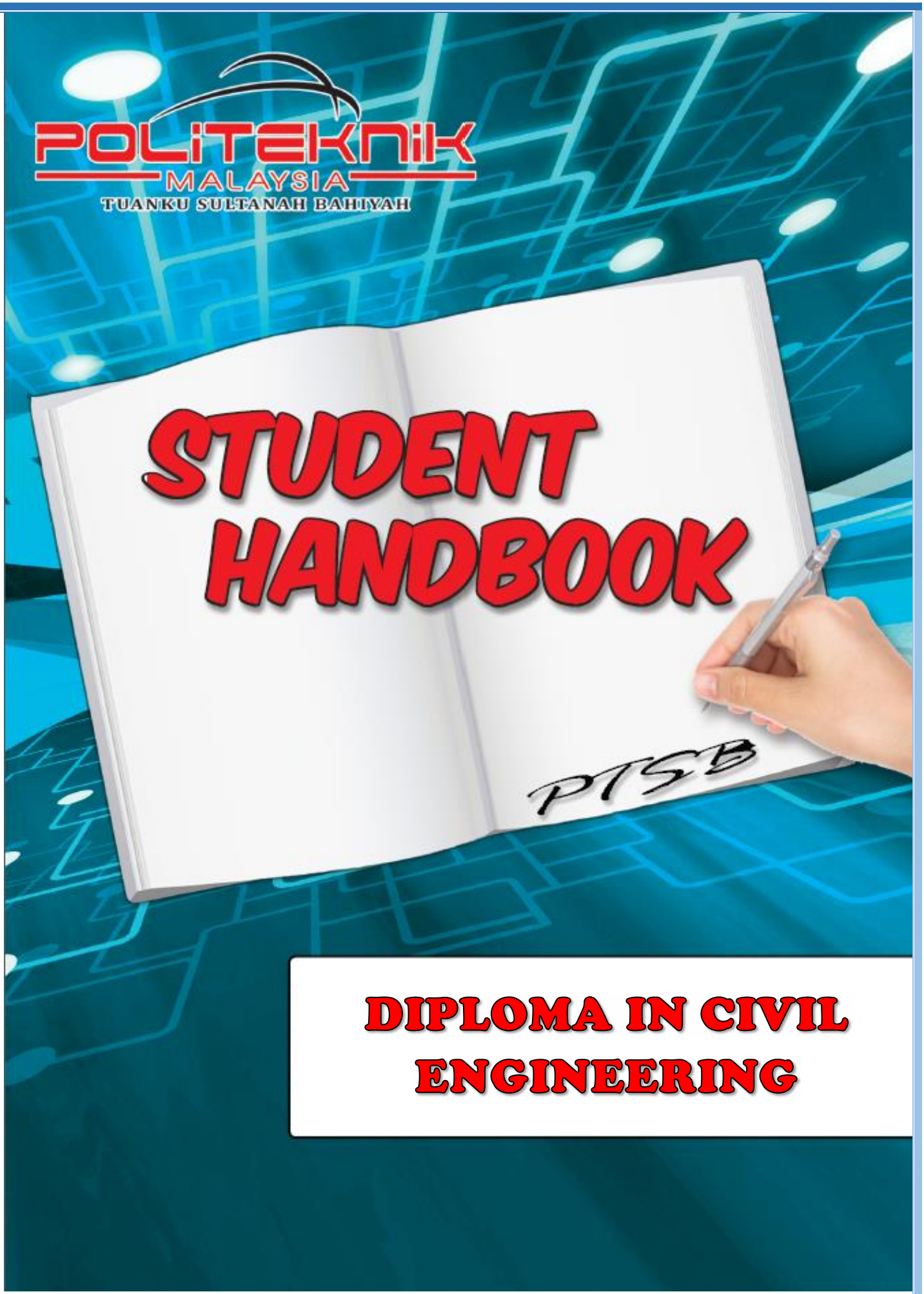
POLITEKNIK
MALAYSIA
TUANKU SULTANAH BAHIYAH



DIPLOMA IN CIVIL ENGINEERING

11.1 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.

11.2 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.

11.3 JOB PROSPECTS

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

11.4 PROGRAM AIMS

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.

11.5 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

11.6 PROGRAMME LEARNING OUTCOMES (PLO)

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

NO	PLO NUMBER	CONTENT
1	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
2	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)
3	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)
4	PLO4	conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements
5	PLO5	apply appropriate techniques, resources, and modern engineering and IT tools to well-defined engineering problems, with an awareness of the limitations (DK6)
6	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)
7	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)
8	PLO8	understand and commit to professional ethics and responsibilities and norms of technician practice
9	PLO9	function effectively as an individual, and as a member in diverse technical teams
10	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
11	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

NO	PLO NUMBER	CONTENT
12	PLO12	recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge
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

11.7 PROGRAM STRUCTURE

Programme Structure Effective June 2020

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	P	T	O	
SEMESTER 1							
Compulsory	MPU21032	Penghayatan Etika dan Peradaban	1	0	2	0	2
	DUE10012	Communicative English 1	1	0	2	0	2

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	P	T	O	
	MPU24XX1	Sukan ***	0	2	0	0	1
	MPU24XX1	Unit Beruniform 1 ***					
Common Core	DUW10022	Occupational, Safety & Health for Engineering	2	0	0	0	2
	DBS10012	Engineering Science	2	1	0	0	2
	DBM10013	Engineering Mathematics 1	2	0	2	0	3
Discipline Core	DCC10012	Engineering Drawing & CAD	0	4	0	0	2
	DCC10022	Brickworks and Concrete Laboratory	0	3	0	0	2
	DCC10032	Civil Engineering Material	2	0	0	2	2
		TOTAL	26				18

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	P	T	O	
SEMESTER 2							
Compulsory	MPU23052	Sains, Teknologi dan Kejuruteraan Dalam Islam*	1	0	2	0	2
	MPU23042	Nilai Masyarakat Malaysia**					
	MPU24XX1	Kelab/Persatuan ***	0	2	0	0	1
	MPU24XX1	Unit Beruniform 2					
Common Core	DBM20023	Engineering Mathematics 2	2	0	2	0	3
Discipline Core	DCC20042	Plumbing and Carpentry Workshop	0	3	0	0	2
	DCC20053	Mechanic 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
		TOTAL	25				17

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	P	T	O	
SEMESTER 3							
Compulsory	DUE30022	Communicative English 2	1	0	2	0	2
	MPU22012	Entrepreneurship	1	0	2	0	2

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	P	T	O	
SEMESTER 3							
Discipline Core	DCC30082	Industrialised Building System (IBS) in Sustanaible 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
		TOTAL	24				16
COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	**P**	**T**	**O**	
SEMESTER 4							
Compulsory	DUE50032	Project Management and Practices	1	0	2	0	2
Discipline Core	DCC40132	Project Management and Practices	2	1	0	0	2
	DCC40142	Steel Structure Design	2	0	1	0	2
	DCC40152	Water Supply and Waste Water Engineering	2	0	1	0	2
	DCC40163	Theory of Structures	3	0	1	0	3
	DCC40172	Structure, Hydraulics and water Quality Laboratory	0	3	0	0	2
	DCC40181	Civil Engineering Project 1	0	2	0	0	1
Electives		Electives 1	0	4	0	0	2
		TOTAL	25				16

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	**P**	**T**	**O**	
SEMESTER 5							
Discipline Core	DCC50194	Civil Engineering Project 2	0	8	0	0	4
	DCC50203	Reinforced Concrete Design	3	0	1	0	3
	DCC50212	Hydrology	2	0	1	0	2
	DCC50222	Hydraulics	2	0	1	0	2
	DCC50232	Engineering in Society	2	0	0	0	2
Electives		Electives 2	2	0	0	0	2

		TOTAL	22	15

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	P	T	O	
SEMESTER 6							
Industrial Training	DUT40110	Industrial Training	0	0	0	0	10
		TOTAL	0				10
			TOTAL CREDIT VALUE				**92**

COMPONENTS	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT HOURS
			L	P	T	O	
ELECTIVES COURSES							
1	DCC50242	Building Information Modeling (BIM)	0	4	0	0	2
2	DCC50252	Building Services	2	0	0	0	2
3	DCC50262	Environmental Polution and Control	2	0	0	0	2
FREE ELECTIVES*							
1	DUD10012	Design Thinking	1	0	0	1	2

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

Engineering & Engineering Technology Courses		Total Hours	%
i.	Lecture	38	44
ii.	Practical	38	44
iii.	Tutorial	11	12
	Total Contact Hours	**87**	**100**

Legend:

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

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

*For Muslim Students

**For Non Muslim Students

Notes:

1. The minimum and maximum credit value of Electives must be referred to the programme standard or professional bodies.
2. [a]**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. [b]**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

11.5 COURSE SYNOPSIS AND LEARNING OUTCOMES (CLO)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	**DCC10012 Engineering Drawing & Cad**	**ENGINEERING DRAWING & 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 **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	• Display ability to produce basic engineering drawing using appropriate tool and equipment correctly. • Build 2D plan in engineering drawing appropriately. • Present an understand of process in mini project presentation verbally.
1	**DCC10022 Brickwork And Concrete Laboratory**	**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 manufacturer 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 needs students to participate actively in teamwork during the practical activities. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Perform practical activities using appropriate tools and techniques for concrete works with safety awareness. 2. Complete a selected mini project on brickworks through group participation. 3. Participate actively in a teamwork during practical activities.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	**DCC10032** **Civil Engineering Materials**	**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 non-steel, the types and function of building finishes materials and the introduction to building elements. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Apply fundamental concept and behaviour of different types of material in civil engineering construction 2. Present orally the use of construction materials in a particular project using visual aids appropriately. 3. Display the ability to search various resources about current construction materials to the assigned topics.
1	**DUW10022** **Occupational Safety and Health for Engineering**	**OCCUPATIONAL SAFETY AND HEALTH FOR ENGINEERING** course is designed to impart understanding of the self-regulatory concepts and provisions under the Occupational Safety & Health Act (OSHA). This course presents the responsibilities of workers in implementing and complying with the safety procedures at work. Understanding of notifications of accidents, dangerous occurrence, poisoning and diseases and liability for offences will be imparted upon students. This course will also provide an understanding of the key issues in OSH Management, Incident Prevention, Fire Safety, Hazard Identification Risk Control and Risk Assessment (HIRARC), Workplace Environment and Ergonomics and guide the students gradually into this multi-disciplinary science. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Explain briefly Occupational Safety and Health (OSH) procedures, regulation and its compliance in Malaysia. 2. Initiates incident hazards, risks and safe work practices in order to maintain health and safe work environment. 3. Demonstrate communication skill in group to explain the factor that can lead to accident in workplace.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	**DUE10012 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. The students are equipped with effective presentation skills as a preparation for academic and work purposes. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Participate in a discussion using effective communication and social skills to reach an amicable conclusion by accommodating differing views and opinions. 2. Demonstrate awareness of values and opinions embedded in texts on current issues. 3. Present a topic of interest that carries identifiable values coherently using effective verbal and non-verbal communication skills.
1	**MPU24XXX1 Sukan**	**UNIT BERUNIFORM 1** adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistic bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif. **CREDIT(S) : 1** **PRE-REQUISITE(S) : NONE**	1. Mempamerkan kemahiran khusus bagi kursus yang berkaitan. 2. Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif.
1	**MPU24XX1 Unit Beruniform 1**	**UNIT BERUNIFORM 1** adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistic bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif. **CREDIT(S) : 1** **PRE-REQUISITE(S) : NONE**	1. Mempamerkan kemahiran khusus bagi kursus yang berkaitan. 2. Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
1	**DBM10013 Engineering Mathematics 1**	**ENGINEERING MATHEMATICS 1** exposes students to the basic algebra including resolve partial fractions. This course also covers the concept of trigonometry and the method to solve trigonometry problems by using basic identities, compound angle and double angle formulae. Students will be introduced to the theory of complex number and concept of vector and scalar. Students will explore advanced matrices involving 3x3 matrix. **CREDIT(S) : 3** **PRE-REQUISITE(S) : NONE**	1. Use mathematical statement to describe relationship between various physical phenomena. 2. Show mathematical solutions using the appropriate techniques in mathematics. 3. Use mathematical expression in describing real engineering problems precisely, concisely and logically.
1	**DBS10012 Engineering Science**	**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. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Use basic physics concept to solve engineering physics problems. 2. Apply knowledge of fundamental physics in activities to mastery physics concept. 3. Perform appropriate activities related to physics concept.
1	**MPU21032 Penghayatan Etika dan Peradaban**	**PENGHAYATAN ETIKA DAN PERADABAN** ini menjelaskan tentang konsep etika daripada perspektif peradaban yang berbeza. Ia bertujuan bagi mengenal pasti sistem, tahap perkembangan, kemajuan dan kebudayaan merentas bangsa dalam mengukuhkan kesepaduan sosial. Selain itu, perbincangan dan perbahasan berkaitan isu-isu kontemporari dalam aspek ekonomi, politik, sosial, budaya dan alam sekitar daripada perspektif etika dan peradaban dapat melahirkan pelajar yang bermoral dan profesional. Penerapan amalan pendidikan berimpak tinggi (HIEPs) yang	1. Membentangkan konsep etika dan peradaban dalam kepelbagaian tamadun. 2. Menerangkan sistem, tahap perkembangan, kesepaduan sosial dan kebudayaan merentas bangsa di Malaysia. 3. Mencadangkan sikap yang positif terhadap isu dan cabaran kontemporari dari perspektif etika dan peradaban.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
		bersesuaian digunakan dalam penyampaian kursus ini. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
2	**DCC20042 Plumbing and Carpentry Workshop**	**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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Assemble appropriate tools and techniques for plumbing 2. Works with safety awareness. complete a mini project for carpentry works within a given time frame. **3.** Participate actively in a teamwork during practical activities.
2	**DCC20053 Mechanics of Civil Engineering Structures**	**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 prerequisite to understand other courses in Civil Engineering. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Apply the fundamental knowledge and principles in mechanic structure clearly. 2. Analyze structure behavior in determinate structure precisely. **3.** Construct the diagram related to bending stress and deflection of determinate beam.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
2	**DCC20063 Engineering Survey**	**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. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Apply correctly the fundamental principles and practices of surveying work. 2. Perform Civil Engineering Survey works using appropriate instrument based on standard procedure and current surveying instrument. **3.** Initiate positive leadership and teamwork by contributing actively in groups during fieldwork that yield valid results.
2	**DCC20073 Contract and Estimating**	**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). **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Explain the fundamental concepts of construction industry in general, tender procedure and contract procedure in Malaysia 2. Estimate the cost of construction project by using preliminary estimating method, build-up rate method and quantitiy measurement 3. Describe the understanding of the professional engineering ethics and practice based on Standard Form of Contract (P.W.D Form 203/203A) efficiently. **4.** Perform efficient management of time and resources through quantity measurement and build-up rate in accordance with Public Work Department Practice.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
2	MPU22012 Entrepreneurship	**ENTREPRENEURSHIP** focuses on the fundamentals and concept of entrepreneurship in order to inculcate the value and interest in students to choose entrepreneurship as a career. This course can help students to initiate creative and innovative entrepreneurial ideas. It also emphasizes a preparation of a business plan framework through business model canvas. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Propose the value proposition of entrepreneurial idea using Business model Canvas 2. Develop a viable business plan by organizing business objectives according to priorities **3.** Organise the online presence business in social media marketing platform

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	**DCC30093 Geotechnical Engineering**	**GEOTECHNICALENGINEERING** covers basic knowledge of the process of soils and rock formation and the characteristics of soil. It also covers improvement works such as compaction, shear strength, seepage, slope stability, earth pressure and foundation. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Apply fundamental of engineering properties of soils in civil engineering works 2. Analyze geotechnical engineering problems using appropriate method in determination of safety, stable earthworks and geotechnical structures 3. Analyze data to reach conclusion in case study on assigned topic **4.** Explain verbally in formal presentation based on case study

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	**DCC30103 Highway and Traffic Engineering**	**HIGHWAY AND TRAFFIC ENIGINEERING** 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, transportation planning, 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. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Apply appropriate model to solve problem in highway and traffic engineering 2. Assesses design performance for highway and traffic engineering based on appropriate specification with consideration of public safety, society and environment **3.** Explain the findings of a case study in a formal presentation
3	**DCC30082 Industrialised Building System (IBS) in Sustainable Construction**	**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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	**1. Assemble suitable green materials and Industrialised Building System (IBS) components with supervision** **2. Construct green system and IBS component with compliance to measurement of Modular Coordination and IBS Score** **3. Demonstrate punctuality and responsibility in completing task of assembling green system and IBS** **4. Organize time and resources efficiently in site management**

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	**DCC30112 Geotechnical and Highway Engineering Laboratory**	**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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	**1. Construct appropriate instrumentation/ measurement techniques/ models/ simulation in geotechnical and highway** **2. Engineering using standard procedure and equipment.** **3. Practices the importance of achieving safety in geotechnical and highway according to OSH standard.** **4. Analyse laboratory result in achieving objective of geotechnical and highway using engineering report standard.**
3	**DCC30122 Fluids Mechanics**	**FLUID MECHANICS** covers the behaviour and characteristics of engineering fluids and their application in hydrostatic and hydrodynamic fluids. 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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	**1. Explain the fundamental and principles in fluid mechanics engineering.** **2. Determine the principles of fluid mechanics engineering in pipe flow appropriately.** **3. Describe verbally the fundamental and principles in fluid mechanics engineering.**

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
3	DYA30073 Green Technology Compliance	**GREEN TECHNOLOGY COMPLIANCE** course is designed to introduce students with fundamentals of green technology, green practices, and green compliances towards the ultimate target of sustainable living. Students will be exposed to different feasible technologies in achieving goals that show developments in rapidly growing fields such as sustainability, innovation, viability and natural sources reduction. Students will also learn other areas where green technology is implemented such as energy, transport, building, water and waste management. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Explain green fundamentals and practices of green technology 2. Display green technology and practices concept in related areas within the industry in Malaysia **3.** Demonstrate green economy and green culture challenges to implement green programmes

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
4	**DCC 40132 Project Management and Practices**	**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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Apply correctly the fundamental engineering concepts of project management 2. Manipulate appropriate techniques and software tool for planning and scheduling related to civil engineering activities **3.** Perform efficient management of time and resources in civil engineering field.
4	**DCC40142 Steel Structure Design**	**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 **CREDIT(S): 2** **PRE-REQUISITE(S): DCC20052 Mechanics of Civil Engineering Structure**	1. Design single storey building for steel structure correctly according to Eurocode 3 2. Create the design output drawing for single storey steel structure design according to Eurocode 3 using current software **3.** Adhere to the engineering ethic through presentation

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
4	**DCC 40152 Water Supply and Wastewater Engineering**	**WATER & 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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	**1. Apply the concept of water supply and wastewater treatment according to related and current standard.** **2. Explain verbally in formal presentation based on given task.** **3. Determine the sustainability and impact of environmental issues regarding to water and wastewater treatment.**
4	**DCC40163 Theory Of Structure**	**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. **CREDIT(S): 3** **PRE-REQUISITE(S): DCC20053 Mechanics of Civil Engineering Structure**	**1. Calculate statically indeterminate beams and portal frame using appropriate method** **2. Analyze joint displacement in statically determinate trusses and internal forces for statically indeterminate trusses correctly** **3. Evaluate the influence lines for statically determinate beams correctly**

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
4	**DCC40172 Structure, Hydraulics and Water Quality Laboratory**	**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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	**1. Construct appropriate instrumentation / measurement techniques / models / simulation in structure, hydraulics and water quality engineering using standard procedure and equipment.** **2. Practice the importance of achieving safety in structure, hydraulics and water quality according to OSH standard.** **3. Analyse laboratory result in achieving objective of structure, hydraulics and water quality using engineering report standard**
4	**DCC40181 Final Year Project 1**	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.** CREDIT(S): 2 PRE-REQUISITE(S): NONE	**1. Develop the investigation process in civil engineering based in a clear and concise manner** **2. Complete a presentation for project proposal using an engineering appropriate standard** **3. Propose appropriate methodology in management and resources based on civil engineering project** **4. Display self-education skills in gathering technical information from various resources**

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
5	**DCC50232 Engineering in Society**	**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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Discuss the roles of engineering in society and the duties of maintaining health and safety in the workplace. 2. 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 **3.** Display skills of self-education and communication techniques in organizing the activities of engineering practice
5	**DCC50262 Environmental Pollution and Control**	**ENVIRONMENTAL POLLUTION AND CONTROL** is a study on types and effects of communicable and non-communicable diseases topublic 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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Analyze technical concept of environmental pollution problems within environmental sustainability. 2. Determine the integration of sustainable environment element in solving solid waste and hazardous waste management. **3.** Display teamwork in solving environmental problem effectively within community.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
5	DCC50252 Building Services	**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. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Choose appropriate building services system with consideration of safety procedures, rules and regulations by the authority 2. Identify building services system with consideration of the environmental impact 3. Display teamwork in completing a case study of a building services system
5	DCC50222 Hydraulics	**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 emphasize on the application of constituents of pumps and open channel flow concept appropriately in solving hydraulics problem. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Explain the fundamental and principles in hydraulic engineering. 2. Determine the principles of hydraulic engineering in pumps and fluid flow 3. Demonstrate the ability to work in team to solve problems on uniform and non-uniform open channel flow.
5	DCC50194 Final Year Project 2	**FINAL YEAR PROJECT 2** covers knowledge and skills in civil engineering practices. The students will be exposed to communication skills, group works, work planning, decision making, recommendation and gain creativity by using related facilities to a design of a system. This course also covers conducting experiments in the laboratory/workshop, field works, and academic researches, designing product or method of civil engineering related fields. The students will be learn the method to analyze data, prepare presentation and report writing. **CREDIT(S): 4** **PRE-REQUISITE(S): Final Year Project 1**	1. Organize the project tasks based on research methodology by using appropriate tools 2. Analyze the project results in achieving objective based on relevant standard and regulation 3. Write the project report based on project finding using appropriate format 4. Complete the project presentation confidently and effectively

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
5	DCC50203 Reinforced Concrete Design	**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). **CREDIT(S): 3** **PRE-REQUISITE(S): DCC20053 Mechanics of Civil Engineering Structure**	1. Design double storey building for reinforced concerete structure correctly according to Eurocode 2 2. Display a safe design for double storey reinforced concrete structure according to Eurocode 2 3. Adhere to the engineering ethic to complete the design task
5	DCC50212 Engineering Hydrology	**ENGINEERING 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 discuss and employ in considering sustainability environmental value. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Apply basic concept of applied hydrology in civil engineering 2. solve problem in applied hydrology for civil engineering 3. Construct hydrological analysis using available software

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOME (CLO)
5	DCC50242 Building Information Modelling (BIM)	**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 coordination, 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. CREDIT(S): 2 PRE-REQUISITE(S): NONE	1. Construct building models using techniques, resources and BIM tools for basic modelling correctly. 2. Build building models using techniques, resources and BIM tools of 3D model in architecture, structure and plumbing appropriately. 3. Propose BIM coordination of 3D model consistent with engineering ethics appropriately. **4.** Perform 5D (costing) in project management efficiently.

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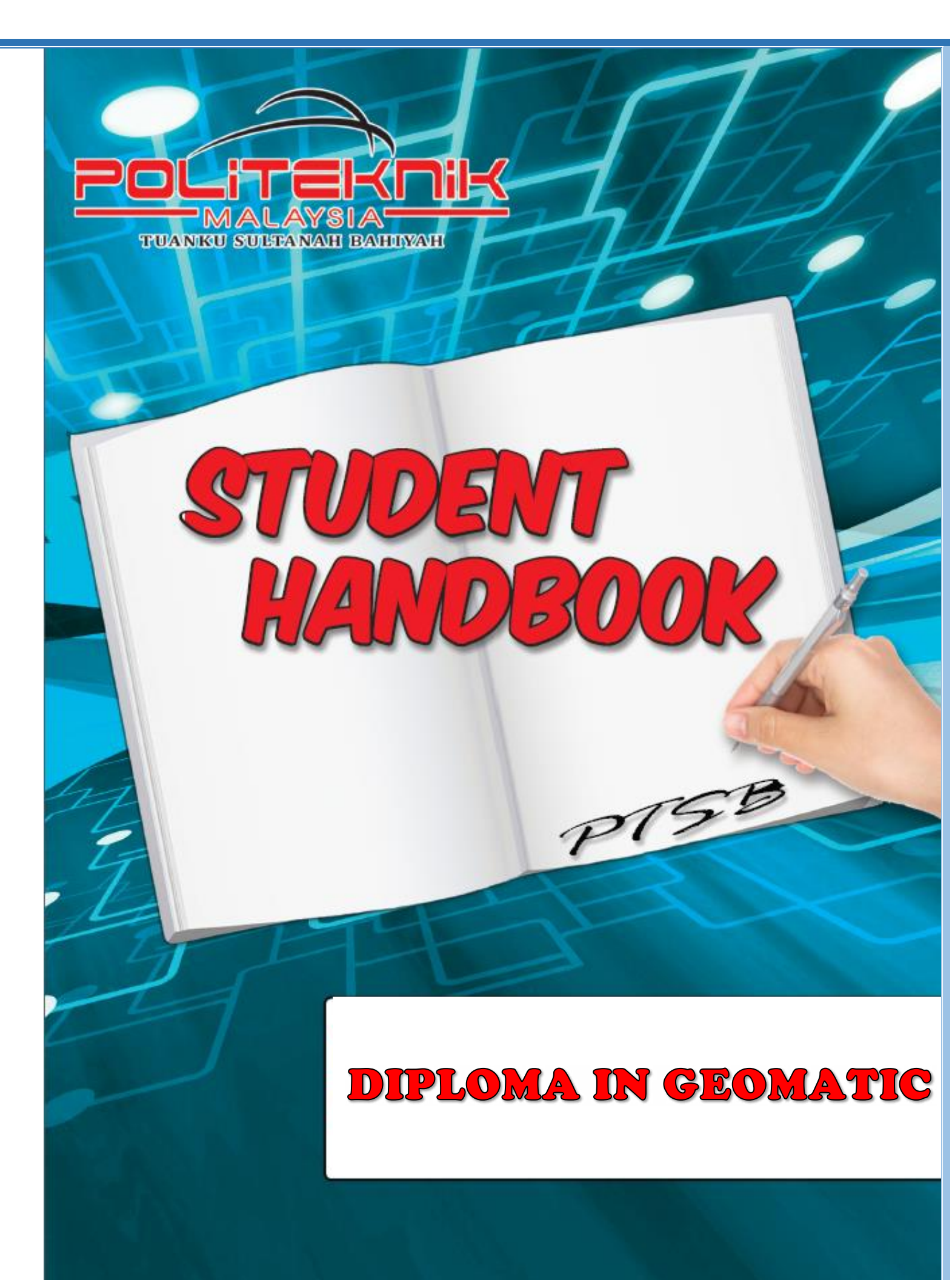
STUDENT HANDBOOK



DIPLOMA IN GEOMATIC

12.1 INTRODUCTION

Geomatic is an area of technology for three-dimensional measuring, managing, and presentation and analising the geospatial data relating to earth. Geospatial data are obtained from various sources including observation of satellites orbiting the earth, sensors that are formed in the air, sea and terrestrial instruments. This will give the students some added values which are relevant to the requirement of Land Surveyors Board (LJT), Land Surveyor Board Sarawak, Sabah Surveyor Board, Royal Institution of Surveyors Malaysia (RISM) and Department of Survey and Mapping, Malaysia (JUPEM). The accreditation from the Royal Institution of Surveyor Malaysia (RISM), Licensed Land Surveyors Board (LJT), related universities, government departments and Licensed Land Surveyors Consultant firm is the most important requirement in order to complete the curriculum development process.

12.2 SYNOPSIS

The Diploma in Geomatics provides students with knowledge and generates skill in the field of land survey especially on measurement and positioning technique, geospatial data capture, data processing, data analysis and map presentation. The graduates from this programme will have the potentials to work in both private and government sectors locally and abroad. In addition, they also will get the opportunities to further their studies in other higher learning institutions locally and abroad.

12.3 JOB PROSPECT

This programme provides the knowledge and skills in geomatics and geospatial industry. This programme can also be applied to a broad range of careers available. The knowledge and skills that the students acquire from the program will enable them to participate in the job market such as:

- Geomatician
- Assistant Surveyor
- Assistant Land Officer
- Land Survey Site Supervisor
- Land Survey Draughtsman
- Assistant Hydrographic Surveyor
- Assistant Information System Officer (GIS)
- Assistant Information System Officer (Remote Sensing)
- Entrepreneur

12.4 PROGRAMME AIMS

This programme believes that every individual has the potential to be possess skilled in survey and mapping Geomatician in supporting the country's aspiration toward new technological advancement and challenges in geomatic fields.

12.5 PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

12.5.1 The Diploma in Geomatic programme shall produce semi professionals who are:

- Knowledgeable, technically competent in geomatic discipline and able to adapt themselves with new technological advancement and challenges in geomatic fields.
- Effective in communication and social responsibilities, able to become a leader and work as a team.
- Practicing good work ethics, able to promote good morality and behaviour and will continuously enhance their knowledge and skills.
- Able to solve managerial and field problems and possess entrepreneur skills to prepare themselves for future challenges.

12.5.2 Diploma in Geomatic programme should produce Geomatician who:

- PEO1: are able to adapt themselves with new technological advancement and challenges in the field of geomatics.
- PEO2: are able to become a leader and work as a team
- PEO3: are able to promote good morality and behavior and will continuously enhance their knowledge and skills
- PEO4: are able to solve managerial and field problems and possess entrepreneur skills to prepare themselves for future challenges

12.6 PROGRAMME LEARNING OUTCOMES (PLO)

NO	PLO NUMBER	CONTENT
1	PLO1	Apply knowledge in geomatic discipline that fulfills standard terms requirement
2	PLO2	Analyze related well-defined geomatic data to solve problems systematically using appropriate tools and techniques
3	PLO3	Perform practical skills by using appropriate technic and surveying instrument in geomatic discipline
4	PLO4	Demonstrate social skills and responsibilities for societal, health, safety, legal and cultural issues
5	PLO5	Organize and retrieve information and pursue knowledge for lifelong learning
6	PLO6	Demonstrate leadership and work collaboratively in diverse team and communicate effectively
7	PLO7	Display managerial skills and entrepreneurial mind set for career path development
8	PLO8	Adopt understanding of professional ethics, responsibilities in societal and professional engagement

12.7 PROGRAMME STRUCTURE

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT VALUES
			L	P	T	O	
SEMESTER 1							
Compulsory	MPU21032	Penghayatan Etika dan Peradaban	1	0	2	0	2
	DUE10012	Communicative English 1	1	0	2	0	2
	MPU24XX1	Unit Beruniform 1	0	2	0	0	1
	MPU24XX1	Sukan					
Common Core	DUW10012	Occupational, Safety and Health	2	0	0	0	2
	DBS10012	Engineering Science	2	1	0	0	2
	DBM10013	Engineering Mathematics 1	2	0	2	0	3
Discipline Core	DCG10013	Basic Surveying	2	3	0	0	3
	DCG10022	Surveying Computation	1	0	2	0	2
TOTAL			**25**				**17**

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT VALUES
			L	P	T	O	
SEMESTER 2							
Compulsory	MPU23052	Sains, Teknologi dan Kejuruteraan Dalam Islam	1	0	2	0	2
	MPU23042	Nilai Masyarakat Malaysia					
	MPU243X1	Kelab/Persatuan	0	2	0	0	1
	MPU247X1	Unit Beruniform 2					
Common Core	DBM20023	Engineering Mathematics 2	2	0	2	0	3
Discipline Core	DCG20033	Cadastral Surveying 1	2	3	0	0	3
	DCG20042	CADD For Surveyors	0	3	0	0	2
	DCG20053	Engineering Surveying 1	2	3	0	0	3
	DCG20063	Field Astronomy	2	2	0	0	3
TOTAL			**26**				**17**

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT VALUES
			L	P	T	O	
SEMESTER 3							
Compulsory	MPU22012	Entrepreneurship	1	0	2	0	2
	DUE30022	Communicative English 2	1	0	2	0	2
Common Core	DUG30023	Green Technology Compliance	2	0	2	0	3
Discipline Core	DCG30072	Cartography	1	2	0	0	2
	DCG30083	Engineering Surveying 2	2	3	0	0	3
	DCG30092	Land Laws & Regulations	1	0	1	0	2
	DCG30103	Photogrammetry	2	3	0	0	3
TOTAL			**25**				**17**

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT VALUES
			L	P	T	O	
SEMESTER 4							
Compulsory	DUE50032	Communicative English 3	1	0	2	0	2
Discipline Core	DCG40113	Cadastral Surveying 2	2	3	0	0	3

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS L	P	T	O	CREDIT VALUES
SEMESTER 4							
	DCG40123	Engineering Surveying 3	2	3	0	0	3
	DCG40132	Geodesy 1	2	0	0	0	2
	DCG40143	Geographical Information System	1	3	0	0	3
	DCG40152	Hydrographic Surveying	2	0	0	0	2
	DCG40163	Remote Sensing	1	3	0	0	3
TOTAL			**25**				**18**

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS L	P	T	O	CREDIT VALUES
SEMESTER 5							
Discipline Core	DCG50232	Topical Studies	1	2	0	0	2
	DCG50173	Geodesy 2	1	4	0	0	3
	DCG50182	Land Management & Development	2	0	0	0	2
	DCG50192	Survey Adjustment	1	0	1	0	2
	DCG50201	Survey Camp	0	0	0	0	1
	DCG50213	Utility Mapping	1	3	0	0	3
Electives		Elective 1	1	2	0		2
TOTAL			**19**				**15**

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS L	P	T	O	CREDIT VALUES
SEMESTER 6							
Industrial Training	DUT60019	Industrial Training	0	0	0	0	9
		TOTAL	**0**				**9**
TOTAL CREDIT VALUE							93

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS L	P	T	O	CREDIT VALUES
ELECTIVES							
1	DCG50222	Cadastral Surveying in Sabah & Sarawak	1	2	0	0	2
2	DCG50242	Town and Country Planning	2	0	0	0	2

3	DCG50252	Visual Basic Programming	1	2	0	0	2

CLASSIFICATION	COURSE CODE	COURSE NAME	CONTACT HOURS				CREDIT VALUES
			L	P	T	O	
FREE ELECTIVES[a]							
1	DUD10012	Design Thinking	1	0	0	1	2

	Total Credit	%
• (a) Compulsory	14	15%
(b) Compulsory (Bahasa Kebangsaan A)[b]	2[b]	0%
ii. Common Core	13	14%
iii. Discipline Core	55	59%
iv. Specialization	0	0%
TOTAL CREDIT	**82**	
v.(a) Electives	2	2%
(b) Free Electives[a]	2[a]	0%
vi. Industrial Training	9	10%
GRAND TOTAL CREDIT	**93**	**100%**

	Total Hours	%
i. Lecture	31	41%
ii. Practical	41	54%
iii. Tutorial	4	5%
TOTAL CONTACT HOURS	76	100%

Legend:

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

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

*For Muslim Students

**For Non Muslim Students

Notes:

1. The minimum and maximum credit value of Electives must be referred to the programme standard or professional bodies.
2. [a]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. [b]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

12.8 COURSE SYNOPSIS AND COURSE LEARNING OUTCOMES (CLO)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
1	MPU21032 Pengajian Malaysia	**PENGAJIAN MALAYSIA** membincangkan sejarah dan politik, perlembagaan Malaysia dan sistem pemerintahan negara, kemasyarakatan dan perpaduan, pembangunan negara dan isu-isu keperihatinan negara. Kursus ini adalah bertujuan untuk melahirkan graduan yang mempunyai identiti kebangsaan dan semangat patriotisme yang unggul. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Menerangkan nilai sejarah bangsa dan negara di Malaysia. (A3,CLS 5) 2. Menghubungkait sikap dan tanggungjawab yang signifikan dengan sistem pemerintahan negara.(A4,CLS 5) 3. Membentuk minda ingin tahu menerusi aktiviti kemasyarakatan atau patriotisme dalam kalangan pelajar.(A4,CLS 5)
1	DUE10012 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. The students are equipped with effective presentation skills as a preparation for academic and work purposes. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Participate in a discussion using effective communication and social skills to reach an amicable conclusion by accommodating differing views and opinions. (A3, CLS 3b) 2. Demonstrate awareness of values and opinions embedded in texts on current issues. (A3, CLS 3b) 3. Present a topic of interest that carries identifiable values coherently using effective verbal and non-verbal communication skills. (A2, CLS 4)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
1	MPU24XX1 Unit Beruniform 1	**UNIT BERUNIFORM 1** adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistic bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif. **CREDIT(S) : 1** **PRE-REQUISITE(S) : NONE**	1. Mempamerkan kemahiran khusus bagi kursus yang berkaitan. (P2,CLS 4) 2. Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif.(A3, CLS 3d)
1	MPU24XXX1 Sukan	**UNIT BERUNIFORM 1** adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistic bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif. **CREDIT(S) : 1** **PRE-REQUISITE(S) : NONE**	1. Mempamerkan kemahiran khusus bagi kursus yang berkaitan. (P2,CLS 4) 2. Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif.(A3, CLS 3d)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
1	**DUW10012 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 workers in implementing and complying with the safety procedures at work. Understanding of notifications of accidents, dangerous occurrence, poisoning and diseases and liability for offences will be imparted upon students. This course will also provide an understanding of the key issues in OSH Management, Incident Prevention, Fire Safety, Hazard Identification Risk Control and Risk Assessment (HIRARC), Workplace Environment and Ergonomics and guide the students gradually into this multi-disciplinary science. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	• Explain briefly Occupational, Safety and Health (OSH) procedures, regulation and its compliance in Malaysia. (C2, CLS 1) • Initiates incident hazards, risks and safe work practices in order to maintain health and safe work environment. (A3, CLS 5) • Forms communication skills in a team to respond for an accident action at workplace. (A3, CLS 3b)
1	**DBS10012 Engineering Science**	**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. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Use basic physics concept to solve engineering physics problems (C3, CLS 1) 2. Apply knowledge of fundamental physics in activities to mastery physics concept (C3, CLS 1) 3. Perform appropriate activities related to physics concept (P3, CLS 3a).

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
1	DBM10013 Engineering Mathematics 1	**ENGINEERING MATHEMATICS** 1 exposes students to the basic algebra including resolve partial fractions. This course also covers the concept of trigonometry and the method to solve trigonometry problems by using basic identities, compound angle and double angle formulae. Students will be introduced to the theory of complex number and concept of vector and scalar. Students will explore advanced matrices involving 3x3 matrix. **CREDIT(S) : 3** **PRE-REQUISITE(S) : NONE**	1. Use mathematical statement to describe relationship between various physical phenomena. (C3, CLS 1) 2. Show mathematical solutions using the appropriate techniques in mathematics. (C3, CLS 3c) 3. Use mathematical expression in describing real engineering problems precisely, concisely and logically. (A3, CLS 3b)
1	DCG10013 Basic Surveying	**BASIC SURVEYING** provides basic knowledge in surveying, map and plan, datum determination and the usage of survey equipment. It also provides early exposure to students about land survey professional bodies. The course emphasizes on conducting a closed traverse based on standard procedure during practical fieldwork. Students are also exposed with the knowledge of booking for a closed traverse. **CREDIT(S) : 3** **PRE-REQUISITE(S) : NONE**	1. Explain the fundamental of surveying concept, survey equipment, datum selection and functions of surveying agencies and government department. (C3, PLO1) 2. Measure surveying works base on standard procedure and using appropriate instruments. (P3, PLO3) 3. Initiate good leadership and teamwork by contributing actively in groups during fieldwork. (A3, PLO6)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
1	DCG10022 Surveying Computation	**SURVEYING COMPUTATION** equips students with knowledge and understanding in problem solving related to the calculations of traverse.It also provides early exposure to students about concept of bearing and angle, trigonometry and three point problems. The course emphasizes on calculation for surveying works. Students are also exposed with the knowledge of area division for a closed traverse. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Indicate the angle measurement calculation in a close traverse by using related methods. (C2, PLO1) 2. Apply the concept traverse adjustment to generate final coordinates and solve the sub-division problem by using related formula. (C3, PLO2) 3. Propose the solutions of computation base on given task. (A3, PLO5)
2	MPU23052 Sains,Teknologi dan Kejuruteraan Dalam 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. **CREDIT(S) : 2** **PRE-REQUISITE(S) : NONE**	1. Melaksanakan dengan yakin amalan Islam dalam kehidupan seharian (A2, CLS4) 2. Menerangkan etika dan profesionalisme berkaitan sains teknologi dan kejuruteraan dalam Islam (A3, CLS5) 3. Menghubungkait minda ingin tahu dengan prinsip syariah, etika dan kaedah fiqh dalam bidang sains, teknologi dan kejuruteraan menurut perspektif Islam (A4, CLS4)
2	MPU23042 Nilai Masyarakat Malaysia	**NILAI MASYARAKAT MALAYSIA** membincangkan aspek sejarah pembentukan masyarakat, nilai-nilai agama, adat resam dan budaya masyarakat di Malaysia. Selain itu, pelajar dapat mempelajari tanggungjawab sebagai individu dan nilai perpaduan dalam kehidupan di samping cabaran- cabaran dalam membentuk masyarakat Malaysia.	1. Membincangkan sejarah dan nilai dalam pembentukan masyarakat di Malaysia. (A2, CLS4) 2. Menerangkan etika dan profesionalisme terhadap konsep perpaduan bagi meningkatkan semangat patriotisme masyarakat Malaysia. (A3, CLS5) 3. Menghubungkait minda ingin tahu dengan cabarancabaran dalam membentuk masyarakat Malaysia. (A4, CLS4)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
2	MPU243X1 Kelab/Persatuan	Kelab memfokuskan kepada penguasaan pengetahuan dan kemahiran khusus secara holistik bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif. **CREDIT(S):** **PRE-REQUISITE(S): NONE**	1. Mempamerkan kemahiran khusus bagi kursus berkaitan. 2. Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif
2	MPU247X1 Unit Beruniform 2	**UNIT BERUNIFORM 1** adalah aktiviti yang mengandungi latihan kemahiran berguna secara rekreasi dan peraturan-peraturan tertentu dalam mengejar kecemerlangan bagi penguasaan pengetahuan dan kemahiran khusus secara holistic bagi mengukuhkan pembentukan kemahiran insaniah pelajar yang positif. **CREDIT(S) : 1** **PRE-REQUISITE(S) : NONE**	1. Mempamerkan kemahiran khusus bagi kursus yang berkaitan. 2. Menunjukkan kepimpinan dan kerja berpasukan berdasarkan penguasaan kemahiran dan amalan positif.
2	DBM20023 Engineering Mathematics 2	**ENGINEERING MATHEMATICS** 2 exposes students to the basic laws of indices and logarithms. This course introduces the basic rules of differentiation concepts to solve problems that relates maximum, minimum and calculate the rates of changes. This course discusses integration concepts in order to strengthen student's knowledge for solving area and volume bounded region problems. In addition, students will learn application of both techniques of differentiation and integration. **CREDIT(S) : 3** **PRE-REQUISITE(S) : DBM10013**	1. Use algebra and calculus knowledge to describe relationship between various physical phenomena.. (C3, CLS1) 2. Solve the mathematical problems by using appropriate and relevant fundamental calculus techniques.. (C3, CLS3c) 3. Use mathematical language to express mathematical ideas and arguments precisely, concisely and logically in calculus. (A3, CLS3b)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
2	DCG20033 Cadastral Surveying 1	**CADASTRAL SURVEYING 1** provides students with the knowledge on title survey, land development process and exposure to conduct cadastral works according to the latest regulations. It also emphasizes on problem solving and techniques of collecting data manually and Field to Finish (F2F) concept until the production of Certified Plan (CP). **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Apply the concept of cadastral survey works and land developments according to Cadastral Survey Regulation and National Land Code measure cadastral work with F2F concept according to the Department of Survey and Mapping Malaysia. (C3, PLO 1) 2. (JUPEM) or Department of Land and Survey Sarawak (JTSS) or Department of Land and Survey Sabah (JTUS) format. (P4, PLO 3) 3. Propose a good communication skill in presentation individually or in group within stipulate time frame. (A3, PLO4)
2	DCG20042 CADD For Surveyors	**CADD (Computer Aided Design and Drafting) FOR SURVEYORS** provides students with knowledge and skill in producing cadastral and engineering survey plans with relevant survey software according to a standard format. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Relate the technical knowledge and specific command in CADD software. 2. Perform processing skills to process cadastral and engineering survey data according to standard procedure. 3. Complete the production of cadastral and engineering plans according to standard format
2	DCG20053 Engineering Surveying 1	**ENGINEERING SURVEYING 1** provides basic knowledge in engineering surveying. The course emphasizes on bearing and distance measurement, levelling, area and volume works. It also provides early exposure to students in practical work. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. apply basic knowledge and calculations of engineering surveying. (C3, PLO 1) 2. measure perimeter survey and leveling works using equipment according to survey regulation. (P3, PLO3) 3. propose a good presentation either individually or in group within a stipulated time frame. (A3, PLO 4)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
2	DCG20063 Field Astronomy	**FIELD ASTRONOMY** equips students with knowledge on the position of celestial bodies such as moon, sun, stars and planets with reference to earth. This study is important to land surveyors in field works such as determining the azimuth in land boundaries, checking angles in long traverse and determining geodetic positions or geographic points on earth. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. apply astronomical concept according to Department of Survey and Mapping Malaysia (JUPEM) and Department of Islamic Development Malaysia (JAKIM) using related formula. (C3, PLO 1) 2. measure the horizontal angle and altitude of the sun to determine the azimuth using extra meridian method. (P3, PLO 2) 3. share the idea to solve qiblah direction and prayer time using related formula in group presentation. (A3, PLO 3)
3	MPU22012 Entrepreneurship	**ENTREPRENEURSHIP** focuses on the fundamentals and concept of entrepreneurship in order to inculcate the value and interest in students to choose entrepreneurship as a career. This course can help students to initiate creative and innovative entrepreneurial ideas. It also emphasizes a preparation of a business plan framework through business model canvas. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. propose the value proposition of entrepreneurial idea using Business model Canvas (A3, CLS 3b) 2. develop a viable business plan by organizing business objectives according to priorities (A4, CLS 4) 3. organise the online presence business in social media marketing platform (A3, CLS 4)
3	DUE30022 Communicative English 2	**COMMUNICATIVE ENGLISH 2** emphasises the skills required at the workplace to describe products or services as well as processes or procedures. This course will also enable students to make and reply to enquiries and complaints.	1. Describe a product or service effectively by highlighting its features and characteristics that appeal to a specific audience. 2. Describe processes,procedures and instructions clearly by highlighting information of concern. 3. Demonstrate effective communication and social skills in handling enquiries and complaints amicably and professionally.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
3	DUG30023 Green Technology Compliance	**GREEN TECHNOLOGY COMPLIANCE** course is designed to introduce students with fundamentals of green technology, green practices, and green compliances towards the ultimate target of sustainable living. Students will be exposed to different feasible technologies in achieving goals that show developments in rapidly growing fields such as sustainability, innovation, viability and natural sources reduction. Students will also learn other areas where green technology is implemented such as energy, transport, building, water and waste management. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. explain green fundamentals and practices of green technology.(C3, CLS 2) 2. display green technology and practices concept in related areas within the industry in Malaysia. (P4, CLS 3a) 3. demonstrate green economy and green culture challenges to implement green programmes. (A3, CLS 3b)
3	DCG30072 Cartography	**CARTOGRAPHY** provides students with knowledge and basic principle of data collection and arranging graphic information to produce a map. This course exposes students to the knowledge of how maps are published using digital techniques. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. apply cartography concept and technique according to elements of cartography. (C3, PLO 1) 2. construct digital mapping by using digital cartography techniques to produce map. (P4, PLO 3) 3. studies cartographic related problems with appropriate equipment and software by using standard procedure. (A3, PLO 5)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
3	DCG30083 Engineering Surveying 2	**ENGINEERING SURVEYING 2** provides knowledge on Topographic survey, automation survey, calculation of volume using Mass Haul Diagram and concept Global Positioning System (GPS). It also emphasizes on detail surveying and GPS field work. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. apply the concept of topographic surveys. automation survey, positioning and earthwork volume. (C4, PLO 2) 2. measure topographic and positioning survey work by using Total Station and Global Navigation Satellite System (GNSS) equipment. (P3, PLO 3) 3. propose management skills using knowledge gained related to engineering survey services. (A3, PLO 7)
3	DCG30092 Land Laws & Regulations	**LAND LAWS AND REGULATIONS** provides exposure and knowledge related to the legislative system which are used in land administration in Peninsular Malaysia before and after the introduction of the National Land Code and also the land administration system for Sabah and Sarawak. This course also explains about land disposals, land dealing and transactions, Malay Reserve, Sabah and Sarawak Land Reserve and land acquisition by the state Authorities. This knowledge is important in order to solve problems related to land administration and management. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. interpret the National Land Code in Peninsular Malaysia and land administration in Sabah and Sarawak. (C3, PLO 1) 2. apply the concept of Malay reserve in Peninsular Malaysia, land reserve in Sabah and Sarawak and land acquisition under Land Acquisition Act 1960 (Act 486). (C3, PLO 1) 3. propose a good communication skill in presentation as individually or in group, on assigned topic. (A3, PLO 6)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
3	DCG30103 Photogrammetry	**PHOTOGRAMMETRY** equips student with knowledge regarding the principles, methods and equipment for aerial survey works. It is important for a surveyor to solve problems related to aerial surveys. It also explains the principles and methods in conducting digital stereo mapping. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. Apply basic principles and concept in photogrammetry elements. (C3, PLO 1) 2. Display appropriate techniques to conduct the stereoscopic viewing and digital photogrammetry. (P3, PLO 3) 3. Follow the specifications to practice flight planning for capture aerial photo. (A3, PLO5)
4	DUE50032 Communicative English 3	**COMMUNICATION 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.	1. Present gathered data in graphs and charts effectively using appropriate language forms and functions. 2. Prepare a high impact resume and a cover letter, highlighing competencies and strengths that meet employer's expectations. 3. Demonstrate effective communication and social skills in handling job interviews confidently.

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
4	DCG40113 Cadastral Surveying 2	**CADASTRAL SURVEYING 2** provides students with the knowledge on cadastral system and cadastral electronic services. It emphasizes on the usage of Global Navigation Satellites System (GNSS) equipment for cadastral work via post processing and MyRTKnet environment. Besides, students are also exposed to strata, stratum title and information to develop housing layout plan. **CREDIT(S): 3** **PRE-REQUISITE(S): DCG20033**	1. analyze concept of cadastral modules related to cadastral works according to Cadastral Survey Regulation. (C4, PLO 2) 2. calibrate the GNSS equipment to carry out cadastral survey work according to Cadastral Survey Regulation. (P4, PLO 3) 3. initiate a business plan using knowledge gained related to cadastral surveying. (A3, PLO 7)
4	DCG40123 Engineering Surveying 3	**ENGINEERING SURVEYING 3** provides knowledge on principles of engineering survey. The course emphasizes on the construction survey work, setting out in construction, curve alignment, monitoring survey and dimensional survey. It also exposes students to field works. **CREDIT(S): 3** **PRE-REQUISITE(S): DCG30083**	1. correlate the principles of engineering survey in construction projects. (C4, PLO 2) 2. display engineering survey works for construction projects. (P3, PLO 3) 3. share the ability to lead and work as a team in presenting final reports on dimensional survey. (A3, PLO6)
4	DCG40132 Geodesy 1	**GEODESY 1** introduces students to the field related to geodesy and provides knowledge of the reference surface in geodesy, ellipsoidal geometry characteristics, datum in geodesy, geodesy coordinate system and computation on an ellipsoid. This course also emphasizes on calculation on geodetic coordinate. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. explain the basic concept and knowledge of geodesy in the field of geomatic. (C2, PLO 1) 2. apply the calculation to obtain the required data in Geodesy. (C3, PLO1) 3. share good communication skill in oral presentation in group on assigned topic within as stipulated time frame. (A3, PLO6)

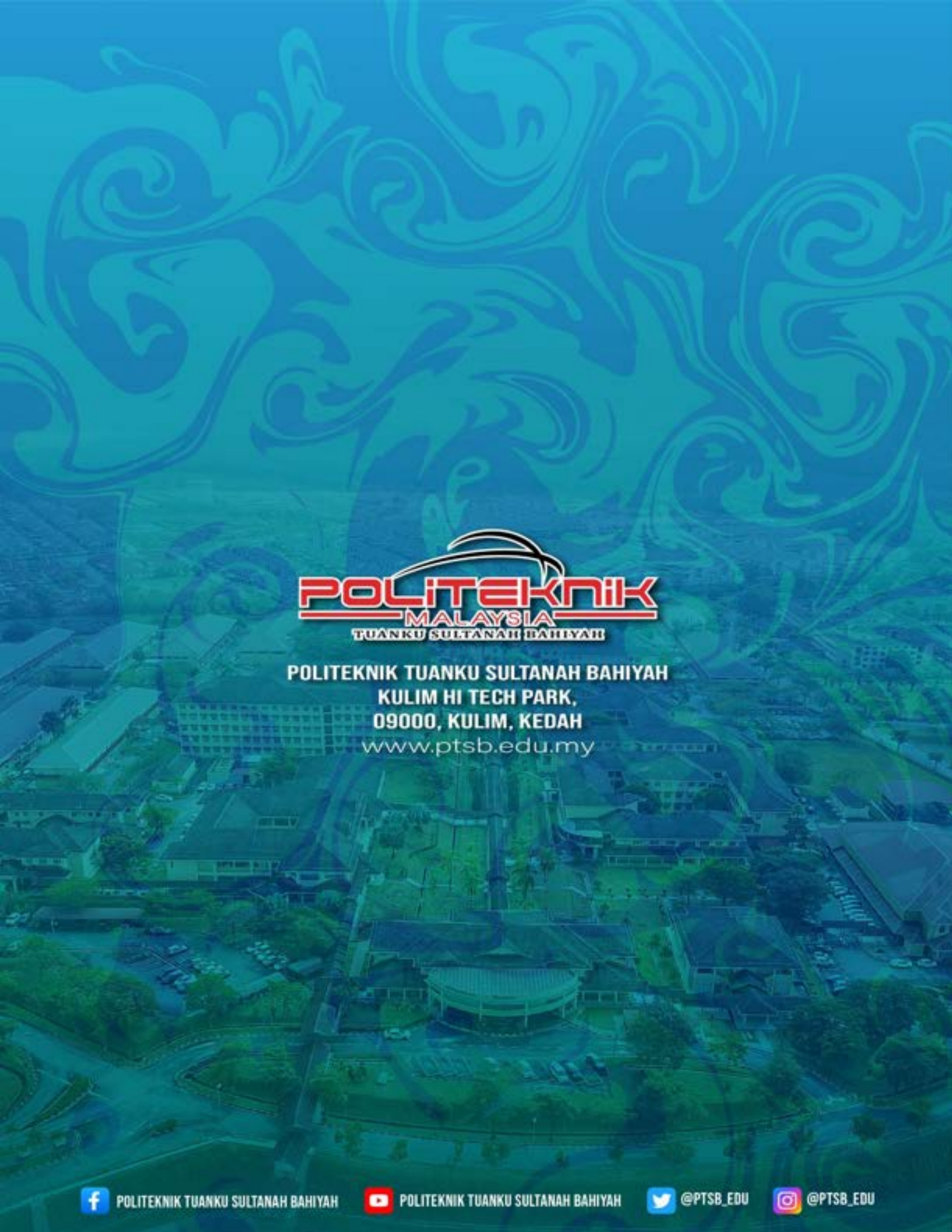
SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
4	DCG40143 Geographical Information System	**GEOGRAPHICAL INFORMATION SYSTEM (GIS)** emphasizes the utilization of computer software, databases, and survey technology via hands-on exercises in field data collection, input, conversion, analysis, map output and multimedia presentation. Students are exposed with the knowledge and skills gained in these studies can be applied to work in various industrial sectors, including surveying, mapping, local and regional government, forestry, agriculture, town planning, military, health, business, education and the environment**.** **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. illustrate the concepts of Geographic Information System (GIS) to develop GIS database. (C4, PLO 2) 2. display the ability to manipulate the spatial data analysis. (P4, PLO 5) 3. share the ideas of GIS application in group by using appropriate technique. (A3, PLO 4)
4	DCG40163 Remote Sensing	**REMOTE SENSING** equips students with the knowledge of imagery concept. This course explains the concept of data capture from electromagnetic energy recorded, by sensors brought by airplane or satellite. This course also develops student's skills in using software for digital image processing, digital image enhancement and image classification. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. List appropriate principles and theories of remote sensing in solving relevant problems. (C4, PLO 2) 2. Display a result of geometric correction, image enhancement, image classification and map annotation using remote sensing image processing software. (C3, PLO 3) 3. Describe applications of remote sensing in various area with a good communication skill.(A3, PLO 6)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
4	DCG40152 Hydrographic Surveying	**HYDROGRAPHIC SURVEYING** provides students with the fundamental knowledge in hydrographic survey including the theory of tides, hydrographic survey planning, and techniques for positioning, sounding and charts production process. The knowledge and skills gained from this study can be applied to work in various industrial sectors, including surveying, oil and gas, regional government and hydrographer. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. explain the concept of hydrographic survey, function of hydrographic agencies, planning procedures and plans production process. (C3, PLO 1) 2. apply the concept of tidal observation, datum transfer, positioning and sounding according to standard for hydrographic survey. (C3, PLO 1) 3. demonstrate the ability to lead and work as a team in applying the most appropriate methods of positioning and sounding in hydrographic survey complying to the requirements of the clients and survey planning. (A3, PLO 6)
5	DCG50232 Topical Studies	**TOPICAL STUDY** equips the students with the ability to apply theories of land survey that they have learned throughout the semester. This course trains the students in developing their skills in communication, team work, work planning and decision making. They are also trained to make recommendation and use all the resources that are available creatively. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Demonstrate the ability to pursue independent study and illustrate the awareness for lifelong learning. (C2, PLO 5) 2. Organize data gathered from various sources such as laboratory, field work, industry, government agency and community according to technical research standard. (C4, PLO5) 3. Proceed to explore entrepreneurial business and management principles for a successful commercial application of research and innovation. (P2, PLO7)
5	DCG50173 Geodesy 2	**GEODESY 2** introduces students to earth's gravity and its measurement, height system in geodesy, vertical and horizontal control network, development of Malaysia Geodetic Network and positioning with GNSS. Establishing of horizontal and vertical network control are part of the practical work. **CREDIT(S): 3** **PRE-REQUISITE(S): DCG40132**	1. classify the phyzical geodesy and Geodetic Survey. (C4, PLO 2) 2. display the practical skills in Geodetic Control Survey. (P5, PLO 3) 3. perform the ability to work in team to complete assigned tasks during practical work sessions. (A5, PLO6)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
5	DCG50182 Land Management & Development	**LAND MANAGEMENT AND DEVELOPMENT** provides students with the exposure and knowledge related to various Act regarding land management and development in Malaysia. Students are exposes to Strata Title, Underground and Mining Land Development, Group Settlement Area (GSA) and Town and Country Planning. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. Explain definition, concept and process of vertical development (strata) and underground land development (stratum) 2. Relate land development based on Mineral Development Act 1994 and State Mineral Enactment, Group Settlement Area Act 1960, National Land Code 1965 and Town and Country Planning Act 1976 3. Demonstrate good communication skills during individual presentation or in group on assign topic
5	DCG50192 Survey Adjustment	**SURVEY ADJUSTMENTS** provides the students with knowledge on adjustment. The course emphasizes the calculation of adjustment using the least square adjustment method through observation and condition equations in solving surveyed data. Besides, it is also provides students with knowledge and practical skills to calculate and adjust surveyed data. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. evaluate the surveying data using statistical analysis and programming of least square adjustment. (c5, plo 2) 2. generalize good critical thinking skills and problem-solving skills individually in class during discussion sessions. (A4, PLO4)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
5	DCG50201 Survey Camp	**SURVEY CAMP** provides students with knowledge and generate skills in the field of land and hydrographic surveys especially on measurement and positioning technique, data processing and plan presentation. This course emphasizes on the cadastral survey, engineering survey, GPS survey and hydrographic survey. It also exposes the students with team work in completing the tasks assigned during the survey camp. **CREDIT(S): 1** **PRE-REQUISITE(S): DCG40152, DCG40123 & DCG40113**	1. measures the survey task during the engineering survey camp successfully and presenting engineering survey camp report satisfactorily. (P3, PLO 3) 2. complete control survey, cadastral survey works, Global Positioning System (GPS) survey, hydrographic survey, and automation survey appropriately according to Department of Survey and Mapping Malaysia (JUPEM) and license surveyor. (P4, PLO 3) 3. demonstrate the ability to lead and work as a team to complete the task given according to JUPEM and License Surveyor standard. (A3, PLO 6)
5	DCG50213 Utility Mapping	**UTILITY MAPPING** exposes the students to introduction, instrument, method of survey, occupational safety and health, processing and mapping utility data of underground utility mapping. This course also emphasized the field work knowledge such as determining the positions of underground materials on earth surface. **CREDIT(S): 3** **PRE-REQUISITE(S): NONE**	1. distinguish the method of utility mapping by various instrument. (C4, PLO 2) 2. measure utility detection survey for mapping purposes. (P4, PLO 3) 3. demonstrate good ethics and professionalism in utility mapping field. (A3, PLO 8)

SEMESTER	CODE AND COURSE NAME	SYNOPSIS	COURSE LEARNING OUTCOMES (CLO) Upon completion of this course students should be able to :
5	DCG50242 Town and Country Planning	**TOWN AND COUNTRY PLANNING** provides students with knowledge of town and regional planning field. This course focuses on theory of planning, functions of Town and Country Planning Act (ACT 172) and development plans. It also provides knowledge on the preparation of housing layout plans. **CREDIT(S): 2** **PRE-REQUISITE(S): NONE**	1. analyze the concept of town and country planning as practiced in Malaysia accurately. (C4, PLO 2) 2. analyze the type of development plan and the principles of housing planning concept correctly. (C4, PLO 2) 3. propose continuous learning and information management skill while engaging in independent acquisition of new knowledge and skills to develop housing layout plan project. (A3, PLO4)
6	DUT60019 Industrial Training	Industrial training prepares students with employability skills and current industrial technologies in actual working environment.This Course allows students to experience the work culture of the workplace as well as provides a platform for students to put into practice the skills and knowledge learnt. The desired attributes include organizational orientation and professional ethnics, effective communication, leadership and teamwork, continuous learning and information management as well as self-management and entrepreneurialmind at the workplace.	1. Perform duties in accordance with job requirements at the workplace. (P4, CLS 3a) 2. Display effective communication and social skills at the workplace. (A5, CLS 3b) 3. Integrate values, attitude and professionalism effectively at the workplace. (A4, CLS 5) 4. Develop responsibility of leadership and teamwork at the workplace. (A4, CLS 3d) 5. Organize information management appropriately at the workplace. (P4, CLS 3c) 6. Integrate lifelong learning skills and entrepreneurial mind at the workplace. (A4, CLS 4)



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