ACADEMIC
GUIDE BOOK
2025 / 2026

School of
Professional and
Continuing
Education
(SPACE)

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

🌐 **space.utm.my/diploma**

Centre of
**Diploma
Studies**

UTM DIPLOMA PROGRAMME

ACADEMIC GUIDEBOOK

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Full Time Programme SPACE UTM reserves the right to amend any information
without prior notification.

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DEPARTMENT OF MANAGEMENT

DEPARTMENT OF BUILT ENVIRONMENT AND SURVEYING

National Education Philosophy

Education in Malaysia is an on-going effort towards further developing the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens who are knowledgeable and competent, who possess high moral standards, and who are responsible and capable of achieving high level of personal well-being as well as being able to contribute to the harmony and betterment of the family, the society and the nation at large.

University Philosophy, Vision, Mission, Strategic Thrusts and Core Values

UTM

Vision
A Premier University Providing World-Class Education and Research

Mission
To Develop Holistic Talents and Prosper Lives Through Knowledge and Innovative Technologies

Core Values
INTEGRITY   SYNERGY   EXCELLENCE   SUSTAINABILITY

Strategic Thrusts

ST 1 : World-class Holistic Talents to extend the Frontier of Education and Research

ST 2 : Creative and Resilient Performance Delivery Through Emphatic and Agile Governance

ST 3 : Institutional Growth through Unique Niche and Specialisation for Long-term Sustainability

ST 4 : Transformative Life Experiences through Knowledge Empowerment and Trust

ST 5 : Global Eminence as Malaysian Top Research University in 2025

Strategic Priorities

S1 – Produce holistic talent by developing high quality graduates

S2 – Provide continuous upskilling and reskilling of university staff to achieve excellence in education and research

S3 – To inculcate UTM core values namely Integrity, Synergy, Excellence and Sustainability (ISES) into work and management ecosystem

S4 – Strengthen UTM's R&D&C&I capability and resilience to champion emerging knowledge and research areas

S5 – Nurture strategic nexus between Universiti-Industry-Government-Community (the quadruple helix) ecosystem to sustain university growth

S6 – Provide sustainable campus experience to UTM's students, staff and surrounding community

S7 – Enculturate data driven culture with high level of trust in technology

S8 – Achieve global eminence as a distinguished Malaysia Research University in-line with national and global agenda

innovative • entrepreneurial • global | www.utm.my

Recourses: https://www.utm.my/

SPACE Vision, Mission, Motto and Core Values

SPACE VISION
To be an international centre of excellence in Lifelong Learning.

SPACE MISSION
To provide quality Lifelong Learning programmes that are
widely accessible, customized and flexible that meet customer needs and expectations.

SPACE MOTTO
ANYONE • ANYTHING • ANYWHERE • ANYTIME

SPACE CORE VALUES
Intelligence
Quality
Global
Synergy

UTM Graduate Attribute 2024

SOCIAL INTELLIGENCE · **CONSTRUCTIVE CITIZEN** · **INNOVATIVE TALENT** · **ENTERPRISING SKILLS** · **SCHOLARS** · ADAB

The main core attributes of graduates
Teras utama atribut graduan

Specific Skills
(Core Skills of the Academic Program)

Kemahiran Khusus
(Kemahiran Teras Program Akademik)

SCHOLARS
KESARJANAAN

Soft Skills
Kemahiran Insaniah

MANNERS
ADAB

INNOVATIVE TALENTS
BAKAT INOVATIF

CONSTRUCTIVE CITIZEN
WARGANEGARA YANG KONSTRUKTIF

ENTERPRISING SKILLS
KEMAHIRAN BERDAYA USAHA

SOCIAL INTELLIGENCE
KEPINTARAN SOSIAL

Facilities in UTM Kuala Lumpur

UTM Kuala Lumpur Library
UTM Kuala Lumpur Library is a branch library situated at UTMKL, Jalan Sultan Yahya Petra, Kuala Lumpur. Currently, the library has 28 staffs comprises of 6 professionals and 22 support staff. Among the services offered are Reference and Research Support Consultant, Library Information Skill Classes, Literature Searching Workshop, Electronic Databases and Inter-Library Loan (ILL). The library also provides the facilities to the users such as Research Carrel (10 rooms), Carrel Room (22 rooms), Discussion Room (12 rooms), Seminar Room (4 rooms), Information Searching Lab, Reading Area, Computer Zone (130 computers) and 24 hours Study Room. To ease the process of borrowing books and printed materials in the library, users could use the Online Public Access Catalog (OPAC) which is called LESTARI. It helps users to find the materials online. The library portal can be accessed via library.utm.my.

Undergraduates Affairs Office
Responsible in students' activity management, sponsorship, loans, health, accommodation, welfare, and undergraduates discipline.

Undergraduates Clinic
Students could receive health services besides going to the government hospitals.

Accommodation
Kediaman Siswa Jaya (KSJ) is situated at Setapak Jaya which is 2km from UTMKL and could accommodate 3000 students. Bus service is provided for students to go to the campus from 6.45am to 10.45 pm. There are also food court, mosque, minimart, laundry, mini cinema, and sports facilities provided for students.

Transportation
Bus service is provided from KSJ to the main campus according to students' lectures timetable. The journey from KSJ to UTMKL takes about 20 minutes.

Sports and Recreation
This facility is handled by Sports Unit. The unit is responsible in expanding and developing sports culture among students besides encouraging positive moral values among students and staff.

Mosque

UTMKL and mosque provides consultancy services to individuals, society and institution inside and outside university.

Students Minimart

These shops are situated in the campus and in the students' hostel.

Electronic Banking Central

Automatic Teller Machines (ATM) are available in the campus for students and staff.

Facilities in UTM Johor Bahru

UTM Johor Bahru Library
UTM Library occupies a central location at the Universiti Teknologi Malaysia (UTM) main campus in Skudai. It has a branch at the UTM Kuala Lumpur and also branches at several faculties, learning centres and Centres of Excellence. UTM Library was officiated by Her Majesty Sultanah Zanariah, the Chancellor of University Teknologi Malaysia on 3rd February 1991.

Undergraduates Affairs Office
Responsible in students' activity management, sponsorship, loans, health, accommodation, welfare, and undergraduates discipline.

Undergraduates Clinic
Students could receive health services besides going to the government hospitals.

Accommodation
Students Affairs Office provides 10 residential colleges that can accommodate up to 14,774 students in one academic session and 301 housing units for students who bring along their spouse and children to stay with them throughout their studies in UTM. There are two types of housing available for the students. One of which is the apartment type (a – two – room and a – three – room apartment) and the other is the town house with two rooms. Each housing unit is furnished with basic facilities such as furniture and refrigerator for the students' convenience. Among the facilities provided at each residential college are cafeterias, multipurpose hall, muslim prayer room, tennis courts, internet, convenient store and common room besides other facilities in the students' rooms.

Transportation
The University also provides transport services for students to commute from their on-campus residential colleges or off-campus accommodation to classes. There are more than 30 buses that provide services from 7.15 am to 11.30 pm every day. The off-campus residential areas covered by the service include Taman Universiti, Taman Sri Skudai, Taman Sri Pulai, Taman Teratai, Taman Desa Skudai and Taman Sri Putri. In addition, there are also public buses such as the Transit Link and Maju bus companies, which ply between Taman Universiti via the ring road of the campus to Johor Bahru City Centre.

Sports and Recreation

UTM Sports Excellence Unit is responsible for the development and development of sports and recreation at the University through the implementation of sports and recreational programs.

Mosque

The construction of the Sultan Ismail Mosque began in 1986 and was completed in 1990. The mosque can accommodate about 10,000 worshippers and has many facilities such as mini-library, seminar rooms, lecture hall, morgue and offices. The planning of the Skudai campus was based on the concept of centralising the main activities of common interests around the mosque. The mosque is located right at the centre of the campus surrounded by other buildings within walking distance, and is the most outstanding building of the university.Its location at the centre of the campus is in line with the concept of Islamic learning in which the mosque is the source of the acquisition and dissemination of knowledge and in life as well with the university motto, "For God and Mankind".

Dining

UTM campus have at least 30 food centre (cafeterias), where the student can have breakfast, lunch as well as dinner at a discounted student rate. Some cafeteria is special and open 24 hours a day and some even offering western food style. Average spending on food per meal is RM5.00. If you prefer canned drink, the canteen is everywhere inside the academic's area. The cafeteria is a walking distances from the hostels. There are more than 100 catering outlets across the campus, including air-conditioned restaurants, cafeterias, fast-food restaurants selling a whole variety of food including traditional Malay, Chinese, Indian and Western cuisines. There are many shops on campus including bookstores, photocopy centers, mobile phone centers, news agents, launderettes, hair dressing and beauty salons, computer shops, travel agencies and more than 20 mini grocery stores, mostly within the students' residential colleges.Just outside UTM campus, through second gate (you have to go through padang kawad), there is McDonald Family Restaurant that open 24Hr per day.

Bank & Post Office

CIMB Bank becoming an official bank for UTM. But there are have ATM/Teller booth machine of Bank Simpanan Nasional, Maybank and Bank Islam Malaysia Berhad in the campus. One post office is located inside the campus, inside student union building. Pos-Laju and pay-bill services are there, and they open post office for the whole week's office hour, except Sunday.

Welcoming Speech

Assalamualaikum and Greetings,

Welcome to Universiti Teknologi Malaysia and, in particular, to Pusat Pengajian Diploma (PPD), School of Professional and Continuing Education (SPACE) UTM. Thank you for visiting our portal.

UTM Diploma Programmes have evolved to become internationally recognized programmes in producing competent semi-professional employees in their respective fields of studies. Currently, we offer fifteen (15) diploma programmes in engineering and non-engineering fields of studies. All our diploma programmes have been designed in accordance to the Malaysian Qualifications Agency (MQA) guidelines and will be continuously reviewed to maintain their standards and quality.

I sincerely hope that this portal will be the right platform for students to obtain important information pertaining to the programmes namely; the entry requirements, curriculum, and the career path of our mainstream programmes.

PPD SPACE is proud to welcome all potential students to be part of us and we will surely strive to give you our best throughout your learning process here. We are truly honoured with the trust given to assist you in shaping your finest future career.

PROFESSOR DR. MOHD SHAHRIZAL BIN SUNAR
Dean,
School of Professional and Continuing Education (SPACE) UTM

Diploma Programme at A Glance

The diploma programmes have been offered since the inception of UTM under their respective faculties. However, in June 1995, a new faculty named Diploma Programme Studies were established to offer all these programmes at UTM branch campus in Jalan Sultan Yahya Petra, Kuala Lumpur. On 15 May 2006, we were called College of Science and Technology (CST). The aim of CST was to produce trained professionals who are skilled and efficient in engineering, science and technology management. During the early years, CST has eight diploma programmes with 4600 enrolments and presently, it offers 13 diploma programmes. Starting 1 June 2010, all diploma programmes are run by UTMSPACE, a dynamic faculty in UTM which has successfully managed programmes and professional courses according to market needs. The programmes offered are listed below:

Programmes Offered:

Department of Engineering
- Diploma in Civil Engineering
- Diploma in Electronic Engineering
- Diploma in Electrical Engineering
- Diploma in Mechanical Engineering
- Diploma in Chemical Engineering

Department of Management
- Diploma in Sport and Fitness
- Diploma in Technology Management
- Diploma in Accounting
- Diploma in Islamic Studies Education

Department of Built Environment and Surveying
- Diploma in Land Surveying
- Diploma in Urban and Regional Planning
- Diploma in Quantity Surveying
- Diploma in Architecture
- Diploma in Property Management
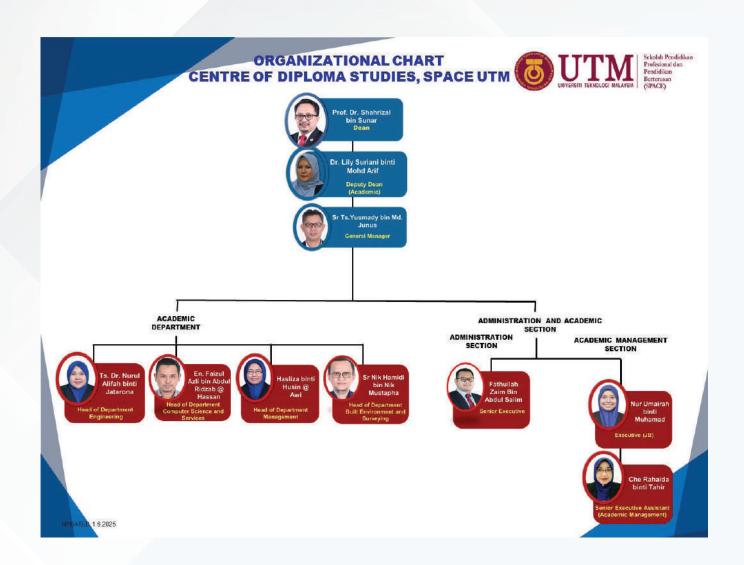
Department of Computer Science and Services
- Diploma in Computer Science
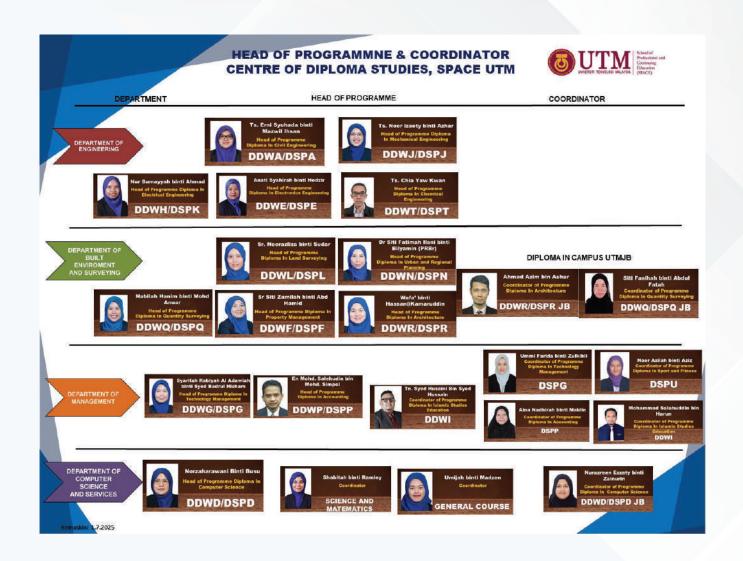
The programmes offered are based on semester system and requires 3 years to complete for Diploma in Islamic Studies Education and Diploma in Land Surveying, 2.5 years for Diploma in Engineering Programmed, Diploma in Computer Science, Diploma in Urban and Regional Planning, Diploma in Quantity Surveying, Diploma in Property Management, Diploma in Architecture, and Diploma in Sport and Fitness and 2 years for Diploma in Technology Management and Diploma in Accounting. Student shall receive their diploma after meeting the programme requirements which have been set by the faculty and university.

Organization Structure

ORGANIZATIONAL CHART
CENTRE OF DIPLOMA STUDIES, SPACE UTM

UTM
UNIVERSITI TEKNOLOGI MALAYSIA
Sekolah Pendidikan Profesional dan Pendidikan Berterusan (SPACE)

Prof. Dr. Shahrizal bin Sunar — Dean

Dr. Lily Suriani binti Mohd Arif — Deputy Dean (Academic)

Sr Ts. Yusmady bin Md. Junus — General Manager

ACADEMIC DEPARTMENT

Ts. Dr. Nurul Alifah binti Jatarona — Head of Department Engineering

En. Faizul Azli bin Abdul Ridzab @ Hassan — Head of Department Computer Science and Services

Hasliza binti Husin @ Awi — Head of Department Management

Sr Nik Hamidi bin Nik Mustapha — Head of Department Built Environment and Surveying

ADMINISTRATION AND ACADEMIC SECTION

ADMINISTRATION SECTION

Fathullah Zaim Bin Abdul Salim — Senior Executive

ACADEMIC MANAGEMENT SECTION

Nur Umairah binti Muhamad — Executive (JB)

Che Rahaida binti Tahir — Senior Executive Assistant (Academic Management)

UPDATED 1.6.2025

Head of Programme and Coordinator

HEAD OF PROGRAMMNE & COORDINATOR
CENTRE OF DIPLOMA STUDIES, SPACE UTM

UTM — Universiti Teknologi Malaysia — School of Professional and Continuing Education (SPACE)

DEPARTMENT	HEAD OF PROGRAMME	COORDINATOR

DEPARTMENT OF ENGINEERING

- Ts. Erni Syuhada binti Mazwil Ihsan — Head of Programme Diploma In Civil Engineering — **DDWA/DSPA**
- Ts. Noor Izaety binti Azhar — Head of Programme Diploma In Mechanical Engineering — **DDWJ/DSPJ**
- Nur Sumayyah binti Ahmad — Head of Programme Diploma In Electrical Engineering — **DDWH/DSPK**
- Anati Syahirah binti Hedzir — Head of Programme Diploma In Electronics Engineering — **DDWE/DSPE**
- Ts. Chia Yaw Kwan — Head of Programme Diploma In Chemical Engineering — **DDWT/DSPT**

DEPARTMENT OF BUILT ENVIROMENT AND SURVEYING

- Sr. Noorazliza binti Sudar — Head of Programme Diploma In Land Surveying — **DDWL/DSPL**
- Dr Siti Fatimah Ilani binti Bilyamin (PRBr) — Head of Programme Diploma In Urban and Regional Planning — **DDWN/DSPN**
- Nabilah Hanim binti Mohd Anuar — Head of Programme Diploma In Quantity Surveying — **DDWQ/DSPQ**
- Sr Siti Zamilah binti Abd Hamid — Head of Programme Diploma In Property Management — **DDWF/DSPF**
- Wafa' binti Hassan&Kamaruddin — Head of Programme Diploma In Architecture — **DDWR/DSPR**

DIPLOMA IN CAMPUS UTMJB
- Ahmad Azim bin Ashar — Coordinator of Programme Diploma In Architecture — **DDWR/DSPR JB**
- Siti Fasihah binti Abdul Fatah — Coordinator of Programme Diploma In Quantity Surveying — **DDWQ/DSPQ JB**

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- En Mohd. Salehudin bin Mohd. Simpol — Head of Programme Diploma In Accounting — **DDWP/DSPP**
- Tn. Syed Husaini Bin Syed Hussain — Coordinator of Programme Diploma In Islamic Studies Education — **DDWI**
- Ummi Farida binti Zulkibli — Coordinator of Programme Diploma In Technology Management — **DSPG**
- Noor Azilah binti Aziz — Coordinator of Programme Diploma In Sport and Fitness — **DSPU**
- Aina Nadhirah binti Maidin — Coordinator of Programme Diploma In Accounting — **DSPP**
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DIPLOMA IN

CIVIL ENGINEERING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Civil Engineering
2. Final Award	Diploma in Civil Engineering
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Engineering Technology Accreditation Council (ETAC)
6. Code of Programme	DSPA
7. Language(s) of Instruction	Bahasa Melayu and English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-governing
10. Study Scheme (Full Time/Part Time)	Full-time
11. Study Duration	Full Time : Minimum : 5 Semesters (2.5 Years) Maximum : 8 Semesters (4 Years) Part Time : Minimum : 8 Semesters (4 Years) Maximum : 18 Semesters (9 Years)

Type of Semester	**No. of Semesters**		**No. of weeks per semester**	
	Full Time	Part Time	Full Time	Part time
Normal	5	8	14	15
Short	2	3	8	9

12. Entry Requirement	**A) GENERAL UNIVERSITY REQUIREMENTS**
	For Sijil Pelajaran Malaysia (SPM) / Polytechnic Certificate / Sijil Kemahiran Malaysia (SKM) / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates
	Obtain a pass in Sijil Pelajaran Malaysia (SPM) / equivalent qualification with at least THREE (3) credits (Grade C) inclusive Bahasa Melayu and a pass in History at the SPM level.
	For Equivalent Qualification Graduates Malaysian Vocational Certificate (SVM)
	Obtain the Malaysian Vocational Certificate (SVM) with at least a credit (Grade C) in Bahasa Melayu (Code 1104).
	For Equivalent Qualification Graduates (O Level)
	Obtain Sijil Pelajaran Malaysia (SPM) with at least a credit (Grade C) in Bahasa Melayu / Bahasa Melayu July Paper.
	For Equivalent Qualification Graduates (APEL-A)
	Pass the APEL A MQA assessment.
	B) SPECIFIC REQUIREMENTS
	For Sijil Pelajaran Malaysia (SPM) ● Fulfil general university requirements; and ● Specific Programme requirements Obtain at least credits (Grade C) in the followings TWO (2) subjects: ● Mathematics ● ONE (1) from the Pure Science / Applied Science / Technical subject. AND Pass in English.

	OR ● Fulfil general university requirements; and ● Specific Programme requirements Obtain at least TWO (2) credits (Grade C) inclusive Pure Science / Applied Science / Technical subject AND Pass in Mathematics. AND Pass in English. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with SPM qualifications who have passed but not obtain a credit (Grade C) in Mathematics at SPM level are require to undergo a bridging programme. **For Malaysian Vocational Certificate (SVM)** ● Fulfil general university requirements; and ● Specific Programme requirements Obtain Malaysian Vocational Certificate (SVM) in a field related to the applied Diploma program with at least a credit (Grade C) in SVM Mathematics. AND Obtain Academics CGPA ≥ 3.33; Obtain Vocational CGPA ≥ 3.67. AND Pass in SVM History. AND Pass in SVM English.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.
- Candidates with SVM Certificate who have passed but not obtain a credit (Grade C) in Mathematics at SVM level are require to undergo a bridging programme.

For Polytechnic Certificate / Kolej Komuniti (SKK) / equivalent
- Fulfil general university requirements; and
- Specific Programme requirements

Obtain Polytechnic Certificate / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates in a field related to the applied Diploma program with a minimum CGPA of 2.00.

AND
Credit (Grade C) in Mathematics at SPM level / equivalent.

AND
Passed in English at SPM level / equivalent.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.
- Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics.
- Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program.

For Sijil Kemahiran Malaysia (SKM) / equivalent (MQF Level 3)
- Fulfil general university requirements; and
- Specific Programme requirements

Obtain Sijil Kemahiran Malaysia (SKM) / A certificate recognized as equivalent at MQF Level 3 with a minimum CGPA of 2.00.

AND
Credit (Grade C) in Mathematics at SPM level / equivalent.

AND
Passed in English at SPM level / equivalent.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.
- Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics.
- Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program.

For Equivalent Qualification Graduates (O Level)
- Fulfil general university requirements; and
- Specific Programme requirements

Obtain GCE O Level qualification with at least a credit (Grade C) in any THREE (3) subjects inclusive Mathematics and Pure Science / Applied Science / Technical.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical

	impairments that hinder practical work.
	 ● Candidates with O Level who passed but not
	 ● obtain at least a credit (Grade C) in Mathematics at GCE O Level are required to undergo a bridging program.
	
	 For Equivalent Qualification Graduates (APEL-A)
	   I. Passed APEL A MQA assessment (Aptitude test and Portfolio evaluation);
	   II. Must be at least 20 years old in the year of application;
	  III. Has at least five (5) years of work experience in a related field; and
	  IV. Passed the faculty level interview.
	
	 Notes:
	 ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.

13. Programme Educational Objectives:

Programme Educational Objectives is designed to ensure that graduates who:

  i.   Competent, creative and innovative in solving various problems in the field of Civil Engineering.

  ii. Communicate effectively with leadership skill and self-confidence while striving for career advancement through life-long learning.

 iii. Uphold ethical values and contribute to the organization's and society's needs by participating in various related activities.

14. Programme Learning Outcomes (PLO)			
(a) Technical Knowledge and Competencies			
Programme Learning Outcomes (PLO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO1 Knowledge	Apply knowledge of applied mathematics and science, engineering fundamentals and civil engineering principles to wide practical procedures and practices.	Lectures, tutorials, industrial training, directed reading, internet searching, active and cooperative learning.	Tests, quizzes, Examinations, Assignments, Project, Presentation and Industrial training report
PLO2 Problem Analysis	Identify and analyse civil engineering problems that lead to substantial conclusions using specific method of analysis.	Project-based learning, active and cooperative learning, case studies, problem-based learning.	Test, Assignment, Project and Project report.
PLO3 Design/development of solutions	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, as well as cultural, societal, and environmental considerations as required.	Project-based learning, active and cooperative learning, case studies, problem-based learning.	Test, Assignment, Report and project report.

(b) Generic Skills			
Programme Learning Outcomes (PLO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO4 Investigation	Conduct investigation of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.	Laboratory work, Industrial training, project and group projects.	Assignment, Report, Log book, Laboratory works and Project report.
PLO5 Modern Tool Usage	Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.	Laboratory work, active and cooperative learning Industrial training, project and group projects.	Assignment, Laboratory reports, Industrial training report, Project report.
PLO6 The Engineering Technician and the World	Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report.
PLO7 Ethics	Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report

PLO8 **Individual and Collaborative Team Work**	Function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Assignment, Project and Industrial training report
PLO 9 **Communication**	Communicate effectively and inclusively 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..	Assignments, Projects, Industrial training, cooperative learning and discussion.	Project/assignment reports, Industrial training report and Presentations.
PLO 10 **Project Management and Finance**	Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.	Assignments, cooperative learning, Laboratory report Industrial training and projects	Assignment, Project report, Industrial training report, Laboratory report and Presentations.
PLO11 **Life Long Learning**	Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.	Assignment, Projects, Industrial training directed reading, cooperative learning and discussion.	Project report, Log book, assignment reports and Industrial training report.
15. Total Credit Hours to Graduate		**91 credit hours**	

16.	Programme structures and features, curriculum and award requirements

This programme is offered on full-time based on a 2 Semester Academic Session with several subjects being delivered and assessed in each semester. Assessment is based on coursework, project and final examination.

Assessment (Refer to UTM Academic Regulations):
    Assessment:
i. Lecture based course:
    Final examinations (not less than 40%) and Coursework. (Refer to UTM Academic Regulations)
ii. Skill-based course: 100% Coursework.

Award requirements:
Students should achieve a total of 91 credit hours with minimum CPA of 2.00.

17.	Career Prospect

Diploma Civil Engineering holders can work as an assistant engineer or technical assistant in civil related engineering industry or any engineering industry or further studies for a Bachelor degree at local or foreign universities.

18.	UTM Diploma ++ Programme

Students are given the opportunity to enroll in short courses offered by university that are relevant to the engineering field during their studies.

19.	Our Uniqueness

This program is designed to:
i. Equip students with engineering skills through hands-on laboratories.
ii. Comply to MQA and ETAC Standard

Students will go through four months of Industrial Training with established civil engineering firm or government sector in order to expose them with real working experience as a technician or assistant civil engineer. Also, the students to gain additional qualifications, broaden their knowledge in order to qualify for entry into honours or postgraduate programs, or undertake professional development for a range of purposes.

20. Facilities Available

List of Laboratories
 	
    a.   Materials Laboratory
    b.   Soil and Geotechnical Laboratory
    c.   Fluid Mechanics, Hydraulics and Hydrology Laboratory
    d.   Structure Laboratory
    e.   Highway and Traffic Laboratory
    f.   Environmental Laboratory
    g.   Computer Laboratory
    h.   Geomatic Laboratory
    i.   Engineering Drawing Studio

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
ULRS 1032	Integrity and Anti-Corruption Course	2
DSPS 1023	Engineering Mathematics 1	3
DSPA 1023	Engineering Drawing and Building Information Modelling	3
DSPS 1712	Physics	2
DSPA 1613	Engineering Mechanics	3
DSPA 1012	Introduction to Civil Engineering	2
	Total	**17**

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
ULRS 1182	Appreciation of Ethics and Civilization	2
DSPS 1133	Engineering Mathematics 2	3
DSPA 1623	Mechanics of Materials and Structures	3
DSPA 1513	Fluid Mechanics	3
DSPA 1033	Engineering Surveying	3
DSPA 1052	Mechanical and Electrical Systems	2
	Total	**18**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
DSPA 1213	Materials and Construction	3
DSPA 1041	Survey Camp	1
DSPA 1062	Occupational Safety and Health	2
DSPA 1522	Hydrology	2
	Total	**8**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
ULRF 2xx2	Service Learning & Community Engagement Courses	2
DSPA 2012	Civil Engineering Laboratory 1	2
DSPA 2413	Soil Mechanics	3
DSPA 2533	Hydraulics	3
DSPA 2633	Theory of Structure	3
DSPA 2643	Structural Steel Design	3
	Total	**16**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPA 2032	Final Year Project 1	2
DSPA 2223	Contract and Estimation	3
DSPA 2313	Environmental Engineering	3
DSPA 2423	Geotechnical Engineering	3
DSPA 2653	Reinforced Concrete Design	3
DSPA 2713	Highway and Traffic Engineering	3
	Total	**17**

YEAR 2 (SEMESTER 6)

Code	Course	Credit
DSPA 2042	Final Year Project 2	2
DSPA 2022	Civil Engineering Laboratory 2	2
DSPA 2233	Project Management and Construction Practise	3
	Total	**7**

YEAR 3 (SEMESTER 7)

Code	Course	Credit
DSPA 3908	Industrial Training	8
	Total	**8**
	Total Credits	**91**

Note:
1) Local students will enroll for UHLB while international students will enroll for UHLM.
2) Courses are conducted as lectures, computer labs and fieldwork.
3) All courses offered are graded.
4) The duration of industrial training is 16 weeks.

SYNOPSIS OF CORE COURSES

DIPLOMA IN CIVIL ENGINEERING

DSPA 1012: Introduction to Civil Engineering
This course is offered in the 1st semester to all new students of Civil Engineering Programmed. The course includes a general introduction to the field of civil engineering and the technician's responsibilities to society. Main subfields in the discipline such as Structural Engineering, Transportation and Geotechnical Engineering, Hydraulics and Hydrology and Environmental Engineering will be highlighted by the experts of the respective subfields. The course also exposes the students to generic skills related to engineering practices such as team working, making ethical decisions and communication skills through the lectures and group projects.

DSPA 1023: Engineering Drawing and Building Information Modelling
This course is designed to expose the students to a basic understanding of technical and engineering drawings. It will cover the aspect of understanding and interpretation of the element of drawings. The concept of orthographic and isometric projection will be discussed and applied in the hands-on session with Computer Aided Drawing (CAD) and REVIT. Students will also be exposed to the introduction of Building Information Modelling (BIM) in civil works, i.e., the reinforced concrete detailing and structural steel detailing drawings. During this session, students will be asked to draw and submit group projects that are given to them. After completing this course students should be able to produce civil engineering drawings using CAD and REVIT.

DSPA 1033: Engineering Surveying
This course introduces the basic knowledge of surveying and mapping, survey regulation, role of JUPEM and License Surveyors. Plans and maps: types, components, design and plotting method. Leveling: techniques and its application in civil engineering projects. Principle and method of basic surveying: angle, bearing and distance. Traverse surveying: types, application, computation and adjustment. Detail survey: Technique of measurement, booking, computations and plan drawing. Concept of the field to finish in surveying and its application in civil engineering projects. Introduction and calculating various types of road curve: simple curve, transition curve and vertical curve. It also covers the various calculating areas: rectilinear, irregular and from coordinate. It will also cover calculating volumes: from cross-sections, from spot heights and from contour lines. Mass-haul diagrams will also be covered in this course.

DSPA 1041: Survey Camp
This course introduces students to the fundamental principles and practices of surveying in Civil Engineering, with a focus on both theoretical knowledge and practical application. Key topics include establishing horizontal and vertical controls, site detailing, earthwork volume calculations, and construction setting out. Emphasis is placed on the importance of accurate surveying during the pre-construction and construction phases. Students will carry out practical fieldwork, some of which will be conducted outside the campus to simulate real project environments. Assessments are based on oral presentations and written reports submitted at the end of the course.

DSPA 1052: Mechanical and Electrical System
This course introduces students to electrical and mechanical systems. The mechanical part consists of the air conditioning and ventilation, water supply and drainage, lift/elevator and escalator, fire safety and control system. For electrical system consists of the DC and AC circuit, electrical wiring drawing, electrical accessories and cable, wiring system.

DSPA 1062: Occupational Safety and Health
This course equips Civil Engineering diploma students with essential knowledge of Occupational Safety and Health (OSH) practices relevant to the construction and engineering industry. It covers Malaysian OSH legislation, hazard identification, accident prevention strategies, and safety management systems. Emphasis is placed on real-world applications, current industry practices, and the importance of OSH compliance on construction sites. By the end of the course, students will understand the legal, theoretical, and practical aspects of OSH, and its critical role in ensuring safety for workers, the public, and the environment in civil engineering projects.

DSPA 1213: Materials and Construction
This course is designed for students to understand the different types of construction materials in civil engineering. It will emphasize on types and functions of cement, the function of aggregates in concrete, water, admixture, properties of fresh and hardened concrete, concrete mix design, manufacturing concrete on-site, properties and application of timber, types and characteristics of brick and block, ferrous and non-ferrous metal and other latest materials in the construction industry. This course also highlight the construction activities involved: Introduction to substructure: foundation and piles. Introduction to temporary works: scaffolds and formworks. Introduction to superstructure: Floors, Walls, Internal Fixtures and Fittings and Roofs with different materials.

DSPA 1522: Hydrology
This course consists of the basic concept of hydrology related to the hydrological cycle. Measurement and analysis of precipitation data including calculation of mean precipitation and Double Mass Curve. Surface runoff and peak discharge calculation for civil works related to water, streamflow measurement and hydrograph. Drainage design including Rational Method, Modified Rational Method and peak discharge forecasting (Gumbel's Extreme Value).

DSPA 1613: Engineering Mechanics
This course presents the introduction to force, vector, resultant, moment & couple, 2-D and 3-D equilibrium of particle and rigid body, friction, center of mass/weight, centroid, moment of inertia and kinematics, kinetics and work energy & power.

DSPA 1623: Mechanics of Materials and Structures
Students are introduced to the basic concept and calculations of stresses and strains arising from a combination of load applications – axial, shear and bending. Examines strains that occur in elastic bodies subjected to direct and combined stresses, shear and bending moment diagrams: Stresses in beams deflection of beams; analyze columns.

DSPA 1513: Fluid Mechanics
This subject consists of properties of fluids; fluids in equilibrium; basic equations in fluid mechanics: continuity equation, Bernoulli's theorem, momentum principle and Pascal's law; analysis of pipe flow; and analysis of flow in a pipeline.

DSPA 2012: Civil Engineering Laboratory I
This subject is compulsory to the final year students of civil engineering courses, which is a combination of four (4) laboratories. The labs involved are Concrete Laboratory, Structure and Material Laboratory, Fluid Laboratory and Soil Laboratory. Students must undergo each lab session to fulfill the requirements for this subject. This laboratory subject is put in place with the related subjects to enhance students understanding upon completing the course.

DSPA 2022: Civil Engineering Laboratory II
This subject is compulsory to the final year students of civil engineering courses, which is a combination of five (5) labs. The labs involved are Highway & Traffic Laboratory, Structure and Material Laboratory, Hydraulic Laboratory, Environment Laboratory and Geotechnics Laboratory. Students must undergo each lab session to fulfill the requirements for this subject. This laboratory subject is put in place with the related subjects to enhance students understanding upon completing the course.

DSPA 2413: Soil Mechanics
This subject is intended to present the principles of Soil Mechanics and its application to foundation analysis. It will provide an understanding of the properties and behavior of soils. The subject will cover geology and formation of natural soil deposits, basic physical properties of soils, classification of soils, water in soils, effective stress in soils and shear strength of soils. The fundamental principles and guidance given in the subject will be a base for lifelong learning in the science and art of geotechnical engineering.

DSPA 2233: Project Management and Construction Practice
The subject is for students to understand the basic principles and techniques of project management. It covers the basic functions and purpose of project management. It also covers a basic introduction to the construction process, project scheduling, project planning and control, project coordination and administration. Finally, basic introduction to the construction quality, health and safety management. Students will be working on a real project using techniques and tools learned in project management.

DSPA 2223: Contract and Estimation
This subject consists of an introduction to civil engineering construction industry, the definition of contract and its importance, the relationship between tender and contractor, types of contract, contract management, tender and document tender, tender forms, types of tender and tender advertisement, Moreover, it also covers construction estimation processes, methods of estimation, construction costs and bill of quantities.

DSPA 2313: Environmental Engineering
This course introduces students to the discipline and the major fields of environmental engineering. It discusses issues of development and pollution, effects of pollution, pollution control technology including environmental laws and regulations. This course provides the students the fundamental knowledge of environmental engineering principles including environmental chemistry and biology. It emphasizes on theory, design and practices of the collection and treatment of water and wastewater including water distribution systems and wastewater disposal. The fundamentals of solid waste management covering operational activities of collection and disposal will also be discussed.

DSPA 2423: Geotechnical Engineering
This is a study of basic principles of soil and its application to foundation analysis. The course will provide an understanding of the properties and behavior of soils and exposure towards practical Geotechnical Engineering. The course will cover soil compaction and stabilization, stress distribution in soil, lateral earth pressure, compressibility and consolidation of soil, slope stability, shallow foundation and site investigation. The topics that will be covered in the course are important to civil engineers where most problems that occur at the site will involve geotechnical and soil mechanics.

DSPA 2533: Hydraulics
This course consists of uniform flow in open channel: Manning's equation and Chezy's equation; non-uniform flow in open channel: critical depth, subcritical flow, supercritical flow, hydraulic jump, gradually varied flow; centrifugal pump; and Hardy Cross method for pipe network.

DSPA 2633: Theory of Structures
This course presents different types of structures and degrees of determinacy, calculating reactions and internal forces (axial, shear and bending) for indeterminate structures and their components, constructing influence lines for statically determinate beams, plastic analyzing of beams and frames by virtual method and calculating reactions for arches and cables.

DSPA 2643: Structural Steel Design
This course presents the design of steel structural elements such as beam, truss and purlins, tension and compression members, column and connections.At the end of the semester, students should be able to analyse and design main steel structure in Civil Engineering works using Eurocode.

DSPA 2653: Reinforced Concrete Design
This course presents the introduction to the design of reinforced concrete structural elements such as beam, slab, column and footing. At the end of the semester, students should be able to analyse and design main reinforced concrete structures in Civil Engineering works using Eurocode.

DSPA 2713: Highway and Traffic Engineering
This is a core subject for the civil engineering course. The subject focuses on the development of knowledge, understand and identify the highway engineering works in construction and traffic study. Topics include road materials, highways construction, pavement design, road drainage, road maintenance, traffic analysis, traffic control device, geometric design, road statistics and economy. Assignments and group projects related to various civil engineering fields are given to the students.

DSPA 2032: Final Year Project 1
A Civil Engineering final year project 1 requires the understanding of Civil Engineering core courses. A project-based approach will be used in the project implementation, which can be done individually. Students are introduced to the methodologies of research and application development through a series of lectures and are guided through a step-by-step practice to complete the initial stages of a proposal. The student must submit a project proposal plan consisting of project selection, planning, a literature review, and work of a theoretical, experimental, or computing nature leading to the achievement of the objective and the preparation of the project report.

DSPA 2042: Final Year Project 2
Final Year Project 2 in Civil Engineering requires students to apply knowledge gained from core Civil Engineering courses, building upon the planning and proposal developed during Final Year Project 1. Students are guided through research analysis and application development via a combination of face-to-face and virtual supervision. By the end of the semester, students are required to submit a comprehensive project report and deliver an oral presentation. Additionally, students will present their findings in the form of a poster during the Faculty's annual exhibition event.

DSPA 3908: Industrial Training
This course requires the students to apply all technical and soft skills knowledge that has been thought throughout the study years. The students will be exposed to the real working environment and practice their Graduate Success Attributes to solve real problems. The student will learn how to write a proper industrial training report in accordance with the standard set by civil engineering department.

DIPLOMA IN

ELECTRONIC ENGINEERING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Electronic Engineering
2. Final Award	Diploma in Electronic Engineering
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Engineering Technology Accreditation Council (ETAC)
6. Code of Programme	DSPE
7. Language(s) of Instruction	Bahasa Melayu and English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-governing
10. Study Scheme (Full Time/Part Time)	Full-time and Part Time
11. Study Duration	Full Time: Minimum : 5 semester (2.5 years) Maximum : 8 semester (4 years) Part Time: Minimum : 8 semester (4 years) Maximum : 18 semester (9 years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	**Part Time**	**Full Time**	**Part time**
Normal	5	8	18	19
Short	2	3	8	9

12. Entry Requirement	**A) GENERAL UNIVERSITY REQUIREMENTS**
	For Sijil Pelajaran Malaysia (SPM) / Polytechnic Certificate / Sijil Kemahiran Malaysia (SKM) / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates
	Obtain a pass in Sijil Pelajaran Malaysia (SPM) / equivalent qualification with at least THREE (3) credits (Grade C) inclusive Bahasa Melayu and a pass in History at the SPM level.
	For Equivalent Qualification Graduates Malaysian Vocational Certificate (SVM)
	Obtain the Malaysian Vocational Certificate (SVM) with at least a credit (Grade C) in Bahasa Melayu (Code 1104).
	For Equivalent Qualification Graduates (O Level)
	Obtain Sijil Pelajaran Malaysia (SPM) with at least a credit (Grade C) in Bahasa Melayu / Bahasa Melayu July Paper.
	For Equivalent Qualification Graduates (APEL-A)
	Pass the APEL A MQA assessment.
	B) SPECIFIC REQUIREMENTS
	For Sijil Pelajaran Malaysia (SPM) ● Fulfil general university requirements; and ● Specific Programme requirements Obtain at least credits (Grade C) in the followings TWO (2) subjects: ● Mathematics ● ONE (1) from the Pure Science / Applied Science / Technical subject. AND Pass in English.

	OR ● Fulfil general university requirements; and ● Specific Programme requirements Obtain at least TWO (2) credits (Grade C) inclusive Pure Science / Applied Science / Technical subject AND Pass in Mathematics. AND Pass in English. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with SPM qualifications who have passed but not obtain a credit (Grade C) in Mathematics at SPM level are require to undergo a bridging programme. **For Malaysian Vocational Certificate (SVM)** ● Fulfil general university requirements; and ● Specific Programme requirements Obtain Malaysian Vocational Certificate (SVM) in a field related to the applied Diploma program with at least a credit (Grade C) in SVM Mathematics. AND Obtain Academics CGPA ≥ 3.33; Obtain Vocational CGPA ≥ 3.67. AND Pass in SVM History.

	AND
	Pass in SVM English.
	Notes:
	- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. - Candidates with SVM Certificate who have passed but not obtain a credit (Grade C) in Mathematics at SVM level are require to undergo a bridging programme.
	For Polytechnic Certificate / Kolej Komuniti (SKK) / equivalent
	- Fulfil general university requirements; and - Specific Programme requirements
	Obtain Polytechnic Certificate / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates in a field related to the applied Diploma program with a minimum CGPA of 2.00.
	AND
	Credit (Grade C) in Mathematics at SPM level / equivalent.
	AND
	Passed in English at SPM level / equivalent.
	Notes:
	Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.

	● Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics. ● Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program. **For Sijil Kemahiran Malaysia (SKM) / equivalent (MQF Level 3)** ● Fulfil general university requirements; and ● Specific Programme requirements Obtain Sijil Kemahiran Malaysia (SKM) / A certificate recognized as equivalent at MQF Level 3 with a minimum CGPA of 2.00. AND Credit (Grade C) in Mathematics at SPM level / equivalent. AND Passed in English at SPM level / equivalent. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics.

	● Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program. **For Equivalent Qualification Graduates (O Level)** ● Fulfil general university requirements; and ● Specific Programme requirements Obtain GCE O Level qualification with at least a credit (Grade C) in any THREE (3) subjects inclusive Mathematics and Pure Science / Applied Science / Technical. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with O Level who passed but not obtain at least a credit (Grade C) in Mathematics at GCE O Level are required to undergo a bridging program. **For Equivalent Qualification Graduates (APEL-A)** I. Passed APEL A MQA assessment (Aptitude test and Portfolio evaluation); II. Must be at least 20 years old in the year of application; III. Has at least five (5) years of work experience in a related field; and IV. Passed the faculty level interview. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.

13. Programme Educational Objectives (PEO)

To produce;

   I. Graduates who are competent, innovative and productive as an assistant engineer in the field of Electronic Engineering and related fields.

  II. Graduates who can manage and communicate effectively with leadership skill and self-confidence while striving for career advancement through life-long learning.

 III. Graduates who uphold ethical values and contribute to the sustainability needs of the organization and society by participating in various related activities.

14. Programme Learning Outcomes (PLO)			
Programme Learning Outcomes (PLO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO1 Knowledge	Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation as respectively to wide practical procedures and practices.	Lectures, tutorials, industrial training, directed reading, internet searching, active and cooperative learning.	Tests, quizzes, Examinations, Assignments, Project, Presentation and Industrial training report
PLO2 Problem Analysis	Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.	Project based learning, active and cooperative learning, case studies, problem based learning.	Test, Examination, Assignment report and Project report.
PLO3 Design/development of solutions	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, as well as cultural, societal, and environmental considerations as required.	Project based learning, active and cooperative learning, case studies, problem-based learning.	Test, Assignment report and Project report.
PLO4 Investigation	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.	Laboratory work, Industrial training, final year project and group projects.	Assignment report, Log book and Project report.
PLO5 Tool Usage	Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.	Laboratory work, Industrial training, project and group projects.	Laboratory reports, Supervisory Evaluation Project report.

PLO6 **The Engineering, Technician and The World**	Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report.
PLO7 **Ethics**	Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report
PLO8 **Individual and Collaborative Team Work**	Function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings	Active learning, Assignment, Project, Industrial training and laboratory work.	Assignment report, Project, Industrial training report and ethical values assessment.
PLO9 **Communication**	Communicate effectively and inclusively 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.	Assignments, Projects, Industrial training, cooperative learning and discussion.	Project/assignment reports, Industrial training report and Presentations.
PLO10 **Project Management and Finance**	Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.	Assignment, laboratory work, Industrial training, cooperative learning and project	Assignment report, laboratory report, Project report, Industrial training report and Presentation.

PLO11 **Life Long Learning**	Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.	Assignment, Projects, Industrial training directed reading, active learning and discussion.	Project report, Log book, assignment reports and Industrial training report.
15. Total credit hours to graduate		**93 credits hours**	

16. Programme structures and features, curriculum and award requirements

This programme is offered on full-time mode and is based on a 3 Semester Academic Session with several courses being delivered and assessed in each semester. Assessment is based on final examination, coursework, project and practical training.

Assessment:
i.   Lecture based course:
     Final examinations (not less than 50%) and Coursework. (Refer to UTM Academic Regulations)
ii. Skill-based course: 100% Coursework.

Award requirements:
Students should achieve a total of 93 credit hours with minimum CPA of 2.00.

17. Career Prospect

Graduates of the program can work as assistant electronic engineer or technical assistant, engineering entrepreneur and any related jobs in electronic engineering. They also continue to further their study in various disciplines related to electronic engineering in local or abroad.

18. UTM Diploma ++ Programme

Students are given the opportunity to enrol in short courses offered by university that are relevant to the engineering field during their studies

19. Our Uniqueness

This program is designed to:
  I.   Comply to MQA and ETAC Standard
  II. Equip students with engineering skills through hands-on laboratories and workshop.

Student will go through 16 weeks of Industrial Training with established electronic engineering firm or government sector in order to expose them with real working experience as a technician or assistant electronic engineer. Also, the students to gain additional qualifications, broaden their knowledge in order to qualify for entry into honours or postgraduate programs, or undertake professional development for a range of purposes.

20. Facilities Available

List of Laboratories:

1. Electrical Workshop
2. Electrotechnics Laboratory
3. PCB Laboratory
4. Circuit Theory Laboratory
5. Communication Laboratory
6. Instrumentation Laboratory
7. Measurement Laboratory
8. Programmable Logic Controller (PLC) Laboratory
9. Digital Laboratory
10. Analog Laboratory
11. Electrical Technology Laboratory
12. Systems Laboratory.
13. Microprocessor Laboratory
14. Industrial Automation and Robotics Laboratory
15. Electronics Workshop

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
DSPS 1113	Engineering Mathematics 1	3
DSPE 1002	Introduction To Electrical Engineering	2
DSPE 1013	Electrical Circuit Analysis 1	3
DSPE 1023	Digital Electronic System	3
DSPE 1043	Electronic Instrumentation and Measurement	3
DSPE 1902	Electrical And Electronics Workshop	2
	Total	**18**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
ULRS 1032	Integrity And Anti-Corruption	2
ULRF 2**2	Service Learning And Community Engagement Courses	2
DSPS 1023	Engineering Mathematics 2	3
DSPS 1713	Physics	3
DSPE 1912	Electrical And Electronic Laboratory 1	2
DSPE 1033	Electronics Devices And Circuit	3
	Total	**17**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
ULRS 1182*/ UHLM 1122*	Appreciation For Ethics and Civilisation / Malay Language For Communication	2
DSPE 1053	Differential Equation	3
DSPE 1922	Programmable Logic Controller	2
	Total	**7**

Notes: * Local students register for ULRS while international students register for UHLM

YEAR 2 (SEMESTER 4)

Code	Course	Credit
DSPE 2113	Digital Interfacing	3
DSPE 2023	Electrical Circuit Analysis 2	3
DSPK 2033	Electrical Engineering System	3
DSPE 2043	Scientific Programming	3
DSPE 2063	C Programming For Engineers	3
DSPE 2902	Electrical and Electronic Laboratory 2	2
	Total	**17**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPE 2002	Engineering Management Principles	2
DSPK 2052	Occupational Safety and Health	2
DSPE 2102	Advance Electronic Communication System	2
DSPE 2072	Industrial Automation	2
DSPE 2093	Industrial Electronic	3
DSPE 2912	Final Year Project 1	2
DSPE 2932	Electronic Laboratory	2
DSPE 2073	Network And Systems	3
	Total	**18**

YEAR 2 (SEMESTER 6)

Code	Course	Credit
DSPE 2053	Microprocessor 3	3
DSPE 2083	Electronic Manufacturing Process	3
DSPE 2922	Final Year Project 2	2
	Total	**8**

YEAR 3 (SEMESTER 6)

Code	Course	Credit
DSPE 3908	Industrial Training	8
	Total	**8**
	Total Credits	**93**

PRE-REQUISITE
DIPLOMA IN ELECTRONIC ENGINEERING

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7
UHLB 1032	UHLB 1042	ULRS 1182	DSPE 2113	DSPE 2002	DSPE 2053	DSPE 3908
DSPS 1023	ULRS 1032	DSPE 1053	DSPE 2023	DSPK 2052	DSPE 2083	
DSPE 1002	ULRF 2**2	DSPE 1922	DSPE 2033	DSPE 2102	DSPE 2922	
DSPE 1013	DSPS 1133		DSPE 2043	DSPE 2072		
DSPE 1023	DSPS 1713		DSPE 2063	DSPE 2093		
DSPE 1043	DSPE 1912		DSPE 2902	DSPE 2912		
DSPE 1902	DSPE 1033			DSPE 2932		
				DSPE 2073		

SYNOPSIS OF CORE COURSES

DIPLOMA IN ELECTRONIC ENGINEERING

DSPE 1013: Electrical Circuit Analysis 1

This course is designed to introduce students with the basic laws, theorems and methods of analysis for solving problems in Direct Current (DC) circuits. Laws, theorems and analysis methods that will be covered in series, parallel and series-parallel circuits includes Ohm's Law, Kirchhoff Voltage and Current law, Thevenin's and Norton's theorems, mesh and nodal analysis. At the end of the course, students are expected to be able to solve variables in any given DC electric circuits using the above mention methods. The students will also use suitable software to simulate DC electric circuits and verify calculations.

DSPE 2023: Electrical Circuit Analysis 2

This course introduces students to the basic laws, rules, theorems and methods of alternating current (AC) circuits analysis such as Ohm's law, Kirchhoff's current and voltage laws, mesh and nodal analysis, superposition theorem, source transformation, Thevenin's and Norton's theorems and maximum power transfer theorem. The course also provides the basic understanding of operational amplifiers (op amp) and how nodal analysis can be applied to various types of op amp circuits. The students are also expected to be able to perform AC circuit's simulation using suitable software.

DSPE 1033: Electronics Devices and Circuit

This course provides introduction to the basic operating principles and applications of discrete electronic devices and circuits. This course content starts with the fundamental solid-state principles and continues the discussion with the construction and characteristics of diode, Bipolar Junction Transistor (BJT) and Enhancement Metal Oxide Semiconductor Field Effect Transistor (E-MOSFET). The application of diodes focusses on the basic power supply whereas the applications of the transistors focus on small-signal amplifier. The course content end with an introduction to the operating principles of an ideal operational amplifier (op-amp) and discussion about op-amp circuits, performance and applications. To help the students understand the behaviour of the electronic devices and predict the behaviour of the electronics circuits, this course makes use of simulation software. The goal of this course is to develop excellent understanding of the devices operations for students to be applied in analogue circuit design.

DSPE 2043: Scientific Programming

This course introduces the fundamentals of scientific programming languages and techniques used by engineers to solve engineering problems. Students will be introduced to common scientific programming languages and their comparative advantages and disadvantages. Emphasis is placed on fundamentals of programming, program design, verification and visualization. The goal is to provide the students with the skills in scientific computing, tools, techniques that can be used to solve their own engineering problems. Students will learn to implement algorithms using high level programming language (e.g. MATLAB). The programming skills acquired in this course will allow students to go beyond what is available in pre-packaged analysis tools, and code their own custom data processing, analysis and visualization for any engineering problem.

DSPE 1053: Differential Equation

The course is an introductory on differential equations. Topics include differentiation, integration, first order ordinary differential equations (ODEs), linear second order ODEs with constant coefficients up to fourth order, the Laplace transform and its inverse and partial differential equations (PDEs).

DSPE 1023: Digital Electronic System
Digital Electronics covers topics of introduction to digital and analog concept, numbers system, operations and codes, logic gates, combinational logic circuit, logic simplification using Boolean Algebra and Karnaugh map and also the integration of gates to form digital circuits for medium-scale integration and arithmetic including flip-flop, finite state machines, emphasizing circuit design and analysis. This course uses an industry-standard engineering software tool to design and simulate digital circuits.

DSPK 2033: Electrical Engineering System
The course introduces electromagnetic induction and principles related to generation of alternating current (ac) and direct current (dc). The course also includes magnetic circuits, single-phase and three-phase system. Other topics covered are single phase transformer and direct current machines that emphasized on their constructional features, operating principles and performance analysis.

DSPE 1043: Electronics Instrumentation and Measurement
This course introduces students some of the metrological terminologies used in experimental methods, concept of metrology and its applications. The course will also provide the students with an understanding on the concept electrical measurement quantity using analogue and digital instruments. The interfaces of the instruments with embedded sensors and also the acquired signal quality analysis is introduced. Besides that, this course also introduces the type of electrical noise and the ways to reduce noise and interference. Finally, the fundamental principle of transducers, transducer operations, characteristic and functions will be discussed. P&ID diagram will also be introduced. This course include hands-on activities using the latest embedded system related to electrical and electronic measurement.

DSPE 1922: Programmable Logic Controller
This course introduce to Programmable Logic Controllers (PLC) including their history, basic operation and general architecture. The student will learn basic interfacing, programming and simple applications of a PLC.

DSPK 2052: Occupational Safety and Health
This course introduces the basic knowledge of occupational safety and health (OSH) at work. In particular, it emphasises on current issues and best practices in OSH in Malaysia and the world, OSH legislations, methods of hazard identification, accident prevention concept and its implementation at workplace. At the end of the course, students should be able to identify theoretical and practical aspect of OSH in industry, its impact to surrounding and identifying hazard risk by applying safety knowledge.

DSPE 2002: Engineering Management Principles
This course is designed to expose students to the basic concepts of management functions in the organization such as planning, organizing, leading and controlling. Besides that, It will emphasize on the management science to expose student the scientific approach to solve management problems such as decision analysis application, linear programming, transportation and shipment model, project evaluation & review technique (PERT), and critical path method (CPM) and inventory management.

DSPE 2053: Microprocessor
The course introduces the engineering students to the basic of microprocessor and microcontroller system including hardware and software. Various essential topics of the 8051-based microprocessors/microcontrollers including the architecture, programming and interfacing. Hardware topics include microprocessor/microcontroller and its concept, basic configurations of microprocessor/microcontroller-based system, supporting components, assembling a basic system, and interfacing with input/output devices. Software topics cover assembly language programming structure, addressing modes, instructions set, stacks, subroutines and index; and microprocessor specific features, interrupts, and timers.

DSPE 2063: C Programming for Engineers
This course formally introduces the concept of computers, algorithms, programming languages, pseudo code, and design of programs for solution to computational engineering problems. The two programming and languages introduced in this course are C and MATLAB. Topic covered in this course include data types, constants, variables, arithmetic operations, assignment statement, looping, formatted I/O, functions, arrays, matrix operations, data structures, plotting, and model building. At the end of this course, student should be able to construct appropriate programming using software learning.

DSPE 1002: Introduction to Electrical Engineering
This course is a general introduction to electrical engineering program. Throughout this course, students will gain insights into the attributes of electrical engineers, considering both academic and practical perspectives through industrial visits and intellectual discussions. Some skills and knowledge that are necessary in the engineering world will be introduced here. Students will obtain a clearer overview of the benefits, excitements and challenges of being an electrical engineering student and a professional electrical engineer in the near future. Furthermore, students will also identify, discuss and critically evaluate current global issues.

DSPE 1902: Electrical and Electronic Workshop
This course is compulsory to the first year students, which is a combination of two (2) laboratories. The lab involve are electrical workshop and electronic workshop. Students must undergo each of the lab session to fulfill the requirements for this course. This course exposes students to be more hands-on.

DSPE 1912: Electrical and Electronic Laboratory 1
This course involves three (3) different laboratories to run experiments related to Circuit and System 1, Instrumentation and Measurement and Electronic Digital. The laboratory involves in Circuit and System 1 laboratory is series circuit, parallel circuit, series-parallel circuit and capacitor. In Instrumentation and Measurement laboratory: analogue meter and error calculating, multimeter and voltage control oscillator and oscilloscope and function generator experimental. In Electronic Digital laboratory: The Logic Level and Verification of Logic Gates, Verification and Implementation of Boolean and De Morgan's Theorems, counter and register experimental. At the end of this course, students should be able to discuss experimental results obtained, give creative comments and conclusion and able to write a short report on the experiments done in the laboratory.

DSPE 2902: Electrical and Electronic Laboratory 2
This course involves four (4) different laboratories to run experiments related to Instrumentation, Electrical technology, Circuit Theory and Electronics 1. The laboratory in Instrumentation is Strain Gauge, Pressure Gauge and Thermocouple. The laboratory involves in Electrical technology provides three experiments which are single phase transformer testing, determine and power factor correction and single phase generator (separated exciter) experimental. Circuit and device laboratory provides four experiments: Superposition and Thevenin's theorem, AC circuit analysis, Series RLC and resonance and Two port network experimental. Electronics 1 laboratory provide four experiments: Rectifier and clipping circuit, Zener regulator, BJT, DC and AC analysis and Frequency response BJT amplifier experimental. At the end of this course, students should be able to discuss experimental results obtained, give creative comments and conclusion and able to write a short report on the experiments done in the laboratory.

DSPE 2073: Network and Systems
This course provides an introduction to the essential concepts of signal and system analysis, delving into signal representations in both time and frequency domains and their impact on systems. It covers a range of topics including the fundamental characteristics of continuous-time and discrete-time signals, linear time-invariant (LTI) systems processing, Fourier series, as well as Fourier and Laplace transforms. Key concepts such as impulse response, frequency response, system transfer functions, along with filtering and filter design methods, modulation, and sampling techniques are discussed and demonstrated.

DSPE 2912: Final Year Project 1
Final year project requires the understanding of electronic core courses. Project-based approach will be used in the project implementation which will be done by team. The topic will be proposed by students. This is the first part of two parts of Final Year Project that every student must fulfil successfully. Students are introduced to the methodologies of research and application development through a series of lectures. Students are guided through a step-by-step practice to complete the initial stages of proposal, planning and design of a project. Students must also meet regularly with supervisor(s) who will monitor their continuous progress. Students are required to prepare a report and present their initial work.

DSPE 2922: Final Year Project 2
This is the second part of two parts of Final Year Project that every student must fulfil successfully. Students are required to execute the next phases of their development plan from Part 1. Students are now required to code, integrate and make up the proposed project. Students will test the final fully-integrated project following the development and research testing practices. Students are required to prepare a full report and present their final work. They are also required to prepare a full report and present their final work. Students must also meet regularly with supervisor(s) who will monitor their continuous progress. At the end of the course, students should be able to incorporate relevant skills learned to perform tasks in future.

DSPE 3908: Industrial Training
This course requires the students to apply all technical and soft-skills knowledge that have been taught throughout the study years. The students will be exposed to the real working environment and practicing their communication skills in order to solve real problems.

DSPE 2932: Electronic Laboratory
This course involves three (3) different laboratories to run experiments related to Electronic circuits and system. At the end of this course, students should be able to discuss experimental results obtained, give creative comments and conclusion and able to write a short report on the experiments done in the laboratory.

DSPE 2072: Industrial Automation
Introduce to the students the basic concepts of the automation. Students will be taught on the automation devices, Industrial robot, CNC, material handling system, controllers and techniques of automations. At the end of the course, students will be able to develop small automation projects using automation devices such as motor sensors and actuators.

DSPE 2093: Industrial Electronic
The course covers topics on: Power Supplies: Unregulated and Regulated Power Supplies Circuits, Discrete components and Integrated Circuits (ICs). Wave Generating Circuits: Oscillators (Sine Wave), Square Wave and Triangular Wave Generators. Thyristors: Silicon Controlled-Rectifiers (SCR), Triacs, Diacs and its Application in Power Control Circuits. Power Control switching circuits: Uni- Junction transistors (UJT) and Programmable UJT (PUT). Electronics and Mechanical Control Switching Circuits: Opto - Electronics, Mechanical Switches and Relays.

DSPE 2102: Advance Electronic Communication System
This course introduces the fundamentals of electronic communication systems. Topics include the frequency spectrum, electrical noise, modulation techniques, characteristics of transmitter and receivers, and digital communications. It also provides a basic introduction to the various building block of a modern digital communication system. A review of fundamental ideas in digital communications will be covered, including Shannon theory, Nyquist theory, and the fundamentals of analogue and digital modulations. Upon completion, students should be able to interpret analog and digital communications circuit diagram. Further, students will also identify, discuss and critically evaluate current digital communication technologies..

DSPE 2083: Electronic Manufacturing Process
This subject consists of introduction to electronic industry, history of electronic manufacturing and global market for electronic product. Introduction and definitions of electro static discharge (ESD), cause of static discharge and ESD protection equipment. Introduction to printed circuit board (PCB), types of PCB, basic process, base materials, laminating process, pressing and quality control. Fabrication of PCB, process of subtractive, additive and semi-additive, fabrication, image transfer, plating, etching, bare-board testing, design and layout. Assembly techniques for through-hole (TH) component and surface-mount (SM) component. Introduction to soldering process, soldering materials, soldering flux, soldering techniques, post solder cleaning. Introduction to testability of product, testing objective, testing techniques and procedures, types of product testing. Project related to industry-standard engineering software used for design and simulation purpose.

DSPE 2113: Digital Interfacing
The course outline has been divided into two blocks of study where the basis is mutual related in theoretical and application. These are machine memory concept and interfacing system. The syllabus comprises of introduction to computer concepts that covers basic components or subsystem where the expression is given to the machine memory system conceptual and development understanding. This includes the study of various categories of machine memory technologies where the great attention will be given to electronic-based, magnetic-based and optical based memory technologies. In the second block of study, the interfacing system covers the main three categories of interfacing system that practice in the current market. These involve the user interface, software interface and hardware interface. A special attention will be given to the hardware mechanism of the interfacing operation involving the basic analogue-to-digital and digital-to-analogue circuitry. The course is completed with the overview of digital signal processing with the aim of presenting the students to the various digital signals and image processing and application with respect to the market and demand trend.

DIPLOMA IN

ELECTRICAL
ENGINEERING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Electrical Engineering
2. Final Award	Diploma in Electrical Engineering
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Engineering Technology Accreditation Council (ETAC)
6. Code of Programme	DSPK
7. Language(s) of Instruction	Bahasa Melayu and/ or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-governing
10. Study Scheme (Full Time/Part Time)	Full-time
11. Study Duration	Full Time: Minimum : 5 semester (2.5 years) Maximum : 8 semester (4 years) Part Time: Minimum : 8 semester (4 years) Maximum : 18 semester (9 years)

Type of Semester	No. of Semesters		No. of Week Per Semester	
	Full Time	Part Time	Full Time	Part time
Normal	5	8	14	15
Short	2	3	8	9

12. Entry Requirement	**A) GENERAL UNIVERSITY REQUIREMENTS**
	For Sijil Pelajaran Malaysia (SPM) / Polytechnic Certificate / Sijil Kemahiran Malaysia (SKM) / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates
	Obtain a pass in Sijil Pelajaran Malaysia (SPM) / equivalent qualification with at least THREE (3) credits (Grade C) inclusive Bahasa Melayu and a pass in History at the SPM level.
	For Equivalent Qualification Graduates Malaysian Vocational Certificate (SVM)
	Obtain the Malaysian Vocational Certificate (SVM) with at least a credit (Grade C) in Bahasa Melayu (Code 1104).
	For Equivalent Qualification Graduates (O Level)
	Obtain Sijil Pelajaran Malaysia (SPM) with at least a credit (Grade C) in Bahasa Melayu / Bahasa Melayu July Paper.
	For Equivalent Qualification Graduates (APEL-A)
	Pass the APEL A MQA assessment.
	B) SPECIFIC REQUIREMENTS
	For Sijil Pelajaran Malaysia (SPM)
	● Fulfil general university requirements; and ● Specific Programme requirements
	Obtain at least credits (Grade C) in the followings TWO (2) subjects:

	● Mathematics ● ONE (1) from the Pure Science / Applied Science / Technical subject. AND Pass in English. OR ● Fulfil general university requirements; and ● Specific Programme requirements Obtain at least TWO (2) credits (Grade C) inclusive Pure Science / Applied Science / Technical subject AND Pass in Mathematics. AND Pass in English. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with SPM qualifications who have passed but not obtain a credit (Grade C) in Mathematics at SPM level are require to undergo a bridging programme. **For Malaysian Vocational Certificate (SVM)** ● Fulfil general university requirements; and ● Specific Programme requirements

| | Obtain Malaysian Vocational Certificate (SVM) in a field related to the applied Diploma program with at least a credit (Grade C) in SVM Mathematics.

AND

Obtain Academics CGPA ≥ 3.33; Obtain Vocational CGPA ≥ 3.67.

AND

Pass in SVM History.

AND

Pass in SVM English.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.
- Candidates with SVM Certificate who have passed but not obtain a credit (Grade C) in Mathematics at SVM level are require to undergo a bridging programme.

For Polytechnic Certificate / Kolej Komuniti (SKK) / equivalent

- Fulfil general university requirements; and
- Specific Programme requirements

Obtain Polytechnic Certificate / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates in a field related to the applied |

	Diploma program with a minimum CGPA of 2.00.
	AND
	Credit (Grade C) in Mathematics at SPM level / equivalent.
	AND
	Passed in English at SPM level / equivalent.
	Notes: ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics. ● Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program.
	For Sijil Kemahiran Malaysia (SKM) / equivalent (MQF Level 3) ● Fulfil general university requirements; and ● Specific Programme requirements Obtain Sijil Kemahiran Malaysia (SKM) / A certificate recognized as equivalent at MQF Level 3 with a minimum CGPA of 2.00.

	AND
	Credit (Grade C) in Mathematics at SPM level / equivalent.
	AND
	Passed in English at SPM level / equivalent.
	Notes: ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics. ● Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program.
	For Equivalent Qualification Graduates (O Level) ● Fulfil general university requirements; and ● Specific Programme requirements
	Obtain GCE O Level qualification with at least a credit (Grade C) in any THREE (3) subjects inclusive Mathematics and Pure Science / Applied Science / Technical.
	Notes: ● Candidates must not have disabilities such

	as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.
	● Candidates with O Level who passed but not obtain at least a credit (Grade C) in Mathematics at GCE O Level are required to undergo a bridging program.
	For Equivalent Qualification Graduates (APEL-A)
	I. Passed APEL A MQA assessment (Aptitude test and Portfolio evaluation);
	II. Must be at least 20 years old in the year of application;
	III. Has at least five (5) years of work experience in a related field; and
	IV. Passed the faculty level interview.
	Notes:
	● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.

13. Programme Educational Objectives (PEO)

To produce;

I. Graduates who are competent, innovative and productive as an assistant engineer in the field of Electronic Engineering and related fields.

II. Graduates who can manage and communicate effectively with leadership skill and self-confidence while striving for career advancement through life-long learning.

III. Graduates who uphold ethical values and contribute to the sustainability needs of the organization and society by participating in various related activities.

14. Programme Learning Outcomes (PLO)

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 **Knowledge**	Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation as respectively to wide practical procedures and practices.	Lectures, tutorials, industrial training, directed reading, internet searching, active and cooperative learning.	Tests, quizzes, Examinations, Assignments, Project, Presentation and Industrial training report
PLO2 **Problem Analysis**	Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.	Project based learning, active and cooperative learning, case studies, problem based learning.	Test, Examination, Assignment report and Project report.
PLO3 **Design/development of solutions**	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, as well as cultural, societal, and environmental considerations as required.	Project based learning, active and cooperative learning, case studies, problem-based learning.	Test, Assignment report and Project report.
PLO4 **Investigation**	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.	Laboratory work, Industrial training, final year project and group projects.	Assignment report, Log book and Project report.
PLO5 **Tool Usage**	Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.	Laboratory work, Industrial training, project and group projects.	Laboratory reports, Supervisory Evaluation Project report.

PLO6 **The Engineering, Technician and The World**	Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report.
PLO7 **Ethics**	Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report
PLO8 **Individual and Collaborative Team Work**	Function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings	Active learning, Assignment, Project, Industrial training and laboratory work.	Assignment report, Project, Industrial training report and ethical values assessment.
PLO9 **Communication**	Communicate effectively and inclusively 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.	Assignments, Projects, Industrial training, cooperative learning and discussion.	Project/assignment reports, Industrial training report and Presentations.

PLO10 **Project Management and Finance**	Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.	Assignment, laboratory work, Industrial training, cooperative learning and project	Assignment report, laboratory report, Project report, Industrial training report and Presentation.
PLO11 **Life Long Learning**	Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.	Assignment, Projects, Industrial training directed reading, active learning and discussion.	Project report, Log book, assignment reports and Industrial training report.
15. Total credit hours to graduate		**93 credits hours**	

16. Programme structures and features, curriculum and award requirements
This programme is offered on full-time mode and is based on a 3 Semester Academic Session with several courses being delivered and assessed in each semester. Assessment is based on final examination, coursework, project and practical training. **Assessment:** i. Lecture based course: Final examinations (not less than 50%) and Coursework. (Refer to UTM Academic Regulations) ii. Skill-based course: 100% Coursework. **Award requirements:** Students should achieve a total of 93 credit hours with minimum CPA of 2.00.
17. Career Prospect
Graduates of the program can work as assistant electronic engineer or technical assistant, engineering entrepreneur and any related jobs in electronic engineering. They also continue to further their study in various disciplines related to electronic engineering in local or abroad.
18. UTM Diploma ++ Programme
Students are given the opportunity to enrol in short courses offered by university that are relevant to the engineering field during their studies

19. Our Uniqueness

This program is designed to:
I. Comply to MQA and ETAC Standard
II. Equip students with engineering skills through hands-on laboratories and workshop.

Student will go through 16 weeks of Industrial Training with established electronic engineering firm or government sector in order to expose them with real working experience as a technician or assistant electronic engineer. Also, the students to gain additional qualifications, broaden their knowledge in order to qualify for entry into honours or postgraduate programs, or undertake professional development for a range of purposes.

20. Facilities Available

List of Laboratories:

1. Electrical Workshop
2. Electrotechnics Laboratory
3. PCB Laboratory
4. Circuit Theory Laboratory
5. Communication Laboratory
6. Instrumentation Laboratory
7. Measurement Laboratory
8. Programmable Logic Controller (PLC) Laboratory
9. Digital Laboratory
10. Analog Laboratory
11. Electrical Technology Laboratory
12. Systems Laboratory.
13. Microprocessor Laboratory
14. Industrial Automation and Robotics Laboratory
15. Electronics Workshop

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
ULRS 1032	Integrity and Anti-Corruption	2
DSPS 1023	Engineering Mathematics 1	3
DSPE 1002	Introduction to Electrical Engineering	2
DSPE 1013	Electrical Circuit Analysis 1	3
DSPE 1023	Digital Electronic System	3
DSPE 1902	Electrical and Electronics Workshop	2
	Total	**17**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
ULRF 2**2	Service Learning and Community Engagement Courses	2
DSPS 1133	Engineering Mathematics 2	3
DSPS 1713	Physics	3
DSPE 1033	Electronics Devices and Circuit	3
DSPE 1043	Electronic Instrumentation and Measurement	3
DSPE 1912	Electrical and Electronic Laboratory 1	2
	Total	**18**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
ULRS 1182	Appreciation of Ethics and Civilisation	2
DSPE 1053	Differential Equation	3
DSPE 1922	Programmable Logic Controller	2
	Total	**7**

Notes: * Local students register for ULRS while international students register for UHLM

YEAR 2 (SEMESTER 4)

Code	Course	Credit
DSPE 2023	Electrical Circuit Analysis 2	3
DSPK 2033	Electrical Engineering System	3
DSPE 2043	Scientific Programming	3
DSPE 2063	C Programming for Engineers	3
DSPK 2042	Electrical Transportation System	2
DSPE 2902	Electrical and Electronic Laboratory 2	2
DSPE 2002	Engineering Management Principles	2
	Total	**18**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPE 2073	Network and Systems	3
DSPK 2003	Electrical Machine	3
DSPK 2013	Power System and Renewable Energy	3
DSPK 2023	Electrical Installation	3
DSPK 2052	Occupational Safety and Health	2
DSPK 2902	Electrical Laboratory	2
DSPK 2912	Final Year Project 1	2
	Total	**18**

YEAR 2 (SEMESTER 6)
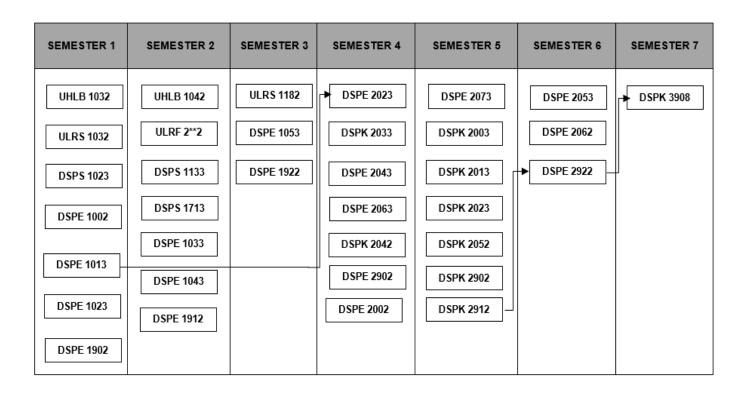
Code	Course	Credit
DSPE 2053	Microprocessor	3
DSPK 2062	Control System	2
DSPK 2922	Final Year Project 2	2
	Total	**7**

YEAR 3 (SEMESTER 7)

Code	Course	Credit
DSPK 3908	Industrial Training	8
	Total	**8**
	Total Credits	**93**

PRE-REQUISITE
DIPLOMA IN ELECTRICAL ENGINEERING

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7
UHLB 1032	UHLB 1042	ULRS 1182	DSPE 2023	DSPE 2073	DSPE 2053	DSPK 3908
ULRS 1032	ULRF 2**2	DSPE 1053	DSPK 2033	DSPK 2003	DSPE 2062	
DSPS 1023	DSPS 1133	DSPE 1922	DSPE 2043	DSPK 2013	DSPE 2922	
DSPE 1002	DSPS 1713		DSPE 2063	DSPK 2023		
DSPE 1013	DSPE 1033		DSPK 2042	DSPK 2052		
	DSPE 1043		DSPE 2902	DSPK 2902		
DSPE 1023	DSPE 1912		DSPE 2002	DSPK 2912		
DSPE 1902						

SYNOPSIS OF CORE COURSES

DIPLOMA IN ELECTRONIC ENGINEERING AND DIPLOMA IN ELECTRICAL ENGINEERING

DSPE 1002: Introduction to Electrical Engineering

This course serves as a general introduction to electrical engineering programmes offered by the Engineering Department of Pusat Pengajian Diploma (PPD), Universiti Teknologi Malaysia (UTM). Students undertaking this course will be exposed to attributes of electrical engineers from both academic and practical points of view. Soft skills and knowledge that are necessary in the engineering world will be introduced to the students. The students will have a clearer understanding on the responsibilities of electrical engineers to the society. By exploring contemporary issues, the students would be able to suggest sustainable solutions to the mankind and its environment.

DSPE 1013: Electrical Circuit Analysis 1

This course is designed to introduce students with the basic laws, theorems andmethods of analysis for solving problems in Direct Current (DC) circuits. Laws,theorems and analysis methods that will be covered in series, parallel and seriesparallelcircuits includes Ohm's Law, Kirchhoff Voltage and Current law, Thevenin's and Norton's theorems, mesh and nodal analysis. At the end of the course,students are expected to be able to solve variables in any given DC electric circuitsusing the above mention methods. The students will also use suitable software to simulate DC electric circuits and verify calculations.

DSPE 1023: Digital Electronics System

Digital Electronics covers topics of introduction to digital and analogconcept, numbers system, operations and codes, logic gates,combinational logic circuit, logic simplification using Boolean Algebra and Karnaugh map and also the integration of gates to form digital circuits for medium-scale integration and arithmetic including flip-flop, finite state machines, emphasizing circuit design and analysis. This course uses an industry-standard engineering software tool to design and simulate digital circuits.

DSPE 1033: Electronic Devices and Circuit

This course provides introduction to the basic operating principles and applications of discrete electronic devices and circuits. This course content starts with the fundamental solid-state principles and continues the discussion with the costruction and characteristics of diode, Bipolar Junction Transistor (BJT) and Enhancement Metal Oxide Semiconductor Field Effect Transistor (EMOSFET). The application of diodes focusses on the basic power supply whereas the applications of the transistors focus on smallsignal amplifier. The course content end with an introduction to theoperating principles of an ideal operational amplifier (op-amp) and discussion about op-amp circuits, performance and applications. To help the students understand the behaviour of the electronic devices and predict the behaviour of the electronics circuits, this course makes use of simulation software. The goal of this course is to develop excellent understanding of the devices operations for students to be applied in analogue circuit design.DDWE 1123: Digital Electronics Digital Electronics covers topics of introduction to digital concept and technology, numbers system, operations and codes, logic gates, Boolean algebra and combinational logic circuit, logic simplification and designing a combinational logic circuit, combinational circuits building blocks, flip-flop, integrated circuit technologies and simulation using suitable simulation tools such as Electronic Workbench

DSPE 1043: Electronic Instrumentation and Measurement

This course introduces students some of the metrological terminologies used in experimental methods, concept of metrology and its applications. The course will also provide the students with an understanding on the concept electrical measurement quantity using analogue and digital instruments. The interfaces of the instruments with embedded sensors and also the acquired signal quality analysis is introduced. Besides that, this course also introduces the type of electrical noise and the ways to reduce noise and interference. Finally, the fundamental principle of transducers, transducer operations, characteristic and functions will be discussed. P&ID diagram will also be introduced. This course include hands-on activities using the latest embedded system related to electrical and electronic measurement

DSPE 1053: Differential Equation

The course is an introductory on differential equations. Topics include differentiation, integration, first order ordinary differential equations (ODEs), linear second order ODEs with constant coefficients up to fourth order, the Laplace transform and its inverse and partial differential equations (PDEs)..

DSPE 1902: Electrical & Electronic Workshop

This course is compulsory to the first year students, which is a combination of two (2) laboratories. The lab involve are electrical workshop and electronic workshop. Students must undergo each of the lab session to fulfill the requirements for this course. This course exposes students to be more hands-on.

DSPE 1912: Electrical and Electronic Laboratory 1

This course involves three (3) different laboratories to run experiments related to Circuit and System 1, Instrumentation and Measurement and Electronic Digital. The laboratory involves in Circuit and System 1 laboratory is series circuit, parallel circuit, series-parallel circuit and capacitor. In Instrumention and Measurement laboratory: analogue meter and error calculating, multimeter and voltage control oscillator and oscilloscope and function generator experimental. In Electronic Digital laboratory: The Logic Level and Verification of Logic Gates, Verification and Implementation of Boolean and De Morgan's Theorems, counter and register experimental. At the end of this course, students should be able to discuss experimental results obtained, give creative comments and conclusion and able to write a short report on the experiments done in the laboratory.

DSPE 1922: Programming Logic Controller

This course introduce to Programmable Logic Controllers (PLC) including their history, basic operation and general architecture. The student will learn basic interfacing, programming and simple applications of a PLC.

DSPE 2002: Engineering Management Principles

This course is designed to expose students to the basic concepts of management functions in the organization such as planning, organizing, leading and controlling. Besides that, It will emphasize on the management science to expose student the scientific approach to solve management problems such as decision analysis application, linear programming, transportation and shipment model, project evaluation & review technique (PERT), and critical path method (CPM) and inventory management.

DSPE 2023: Electrical Circuit Analysis 2

This course introduces students to the basic laws, rules, theorems and methods of alternating current (AC) circuits analysis such as Ohm's law, Kirchhoff's current and voltage laws, mesh and nodal analysis, superposition theorem, source transformation, Thevenin's and Norton's theorems and maximum power transfer theorem. The course also provides the basic understanding of operational amplifiers (op amp) and how nodal analysis can be applied to various types of op amp circuits. The students are also expected to be able to perform AC circuit's simulation using suitable software..

DSPE2043: Scientific Programming

This course introduces the fundamentals of scientific programming languages and techniques used by engineers to solve engineering problems. Students will be introduced to common scientific programming languages and their comparative advantages and disadvantages. Emphasis is placed on fundamentals of programming, program design, verification and visualization. The goal is to provide the students with the skills in scientific computing, tools, techniques that can be used to solve their own engineering problems. Students will learn to implement algorithms using high level programming language (e.g. MATLAB). The programming skills acquired in this course will allow students to go beyond what is available in pre-packaged analysis tools, and code their own custom data processing, analysis and visualization for any engineering problem.

DSPE 2053: Microprocessor

The course introduces the engineering students to the basic of microprocessor and microcontroller system including hardware and software. Various essential topics of the 8051-based microprocessors/microcontrollers including the architecture, programming and interfacing. Hardware topics include microprocessor/microcontroller and its concept, basic configurations of microprocessor/microcontroller-based system, supporting components, assembling a basic system, and interfacing with input/output devices. Software topics cover assembly language programming structure, addressing modes, instructions set, stacks, subroutines and index; and microprocessor specific features, interrupts, and timers.

DSPE 2053: Professional Engineering Ethics Code

The course introduces the engineering students to the basic of microprocessor and microcontroller system including hardware and software. Various essential topics of the 8051-based microprocessors/microcontrollers including the architecture, programming and interfacing. Hardware topics include microprocessor/microcontroller and its concept, basic configurations of microprocessor/microcontroller-based system, supporting components, assembling a basic system, and interfacing with input/output devices. Software topics cover assembly language programming structure, addressing modes, instructions set, stacks, subroutines and index; and microprocessor specific
features, interrupts, and timers.

DSPE 2063: C Programming for engineers

This course introduces students to the fundamentals of programming using C language, which include basic elements of C, input/output formatting, selections, loops, functions, arrays, pointers, c-strings and records. Emphasis will be on the basic concept of programming, different techniques to write program in C language, understanding the algorithms, programming development and produces the suitable output. The course also exposes students to some basic of classes and objects. At the end of the course student should be able to write a program to solve given problems using C language.

DSPE 2073: Network and System

This course provides an introduction to the essential concepts of signal and system analysis, delving into signal representations in both time and frequency domains and their impact on systems. It covers a range of topics including the fundamental characteristics of continuous-time and discrete time signals, linear time-invariant (LTI) systems processing, Fourier series, as well as Fourier and Laplace transforms. Key concepts such as impulse response, frequency response, system transfer functions, along with filtering and filter design methods, modulation, and sampling techniques are discussed and demonstrated.

DSPE 2902: Electrical and Electronic Laboratory 2
This course involves four (4) different laboratories to run experiments related to Instrumentation, Electrical technology, Circuit Theory and Electronics 1. The laboratory in Instrumentation is Strain Gauge, Pressure Gauge and Thermocouple. The laboratory involves in Electrical technology provides three experiments which are single phase transformer testing, determine and power factor correction and single phase generator (separated exciter) experimental. Circuit and device laboratory provides four experiments: Superposition and Thevenin's theorem, AC circuit analysis, Series RLC and resonance and Two port network experimental. Electronics 1 laboratory provide four experiments: Rectifier and clipping circuit, Zener regulator, BJT, DC and AC analysis and Frequency response BJT amplifier experimental. At the end of this course, students should be able to discuss experimental results obtained, give creative comments and conclusion and able to write a short report on the experiments done in the laboratory.

DSPK 2003: Electrical Machine
This course introduces students to the basic of three phase machines such as three-phase transformers, three phase synchronous generators and three-phase induction motors. Basically it consists of the construction and principle of operation, connection, phase shift, classification, standard testing procedures, equivalent circuits, performance, parallel operation, torque characteristic and active power analysis. It also looking at the starting and torque characteristics of single phase induction motor, universal motor, stepper motor, hysteresis motor, and synchronous motor. Finally, the basic of motor control in industry which includes the typical control devices, starters and speed control.

DSPK 2013: Power system and renewable energy
This course is designed to introduce the power system network with renewable energy. Topics include: electrical power generation with renewable energy, symmetrical and unsymmetrical three-phase fault, load flow analysis and control, transmission lines, technical treatment of the general problem of power system stability and its relevance. At the end of the course students are expected to apply the analysis concept in solving the real power system problems. Students will visit industry to get information related to the course

DSPK 2023: Electrical Installation
This course introduces students to the Electrical wiring guidelines from Energy Commission (ST) and safety practice in work place. To be used as a concise guide for all competent people, electrical contractors and consulting engineers involved in wiring works to ensure that the electrical wiring system in residential buildings is made with perfect and safety.

DSPK 2033: Electrical Engineering System
This course introduces fundamental concepts of power systems, magnetic circuits and transformer. Students should be able to identify components of the system from the course and describe their basic operations from the course having electromagnetic and circuit concepts learned in previous fundamental courses. These fundamental concepts are further elaborated in applications of magnetic circuits in transformers, power in ac circuits, three-phase system, power system generation and component modelling and analysis in power system transmission. At the end of the course, the students are expected to critically analyze the power system comprising of generation and transmission.

DSPK 2042: Electrical Transportation System
This course is designed to introduce the application of power electronic circuit and the topics include: energy conversion, modelling converters, derived structures, basic operation electrical vehicle and its relevance. At the end of the course students are expected to apply the analysis concept in solving the real electrical transportation system problems. Students will visit industry to get information related to the course.

DSPK 2052: Occupational Safety and Health
This course presents a basic knowledge of occupational safety and health (OSH) at work. In particular, it emphasises on current issues and best practices in OSH in Malaysia and the world, OSH legislations, methods of hazard identification, accident prevention concept and its implementation at workplace. At the end of this course, it is expected that the students will be able to appreciate the legal requirements, theoretical and practical aspect of OSH in industry and its impact to surrounding public community.

DSPK 2062: Control System
This subject consists of Introduction to control systems: open and closed loop, error state. Control systems modelling: Laplace transform model, modelling of electrical, mechanical and electromechanical systems. Time response analysis: Transient and steady-state response, poles and zeros, step response of first and second order systems, transient response specifications. Block diagram reduction, signal flow graph. Root Locus techniques: Definition, Routh-Hurwitz criterion, root locus construction rules. Frequency response techniques: Bode plot and stability analysis from Bode plots. Use of MATLAB software to analyze control systems in the time and frequency domain.

DSPK 2902: Electrical Laboratory
This course involves five laboratories to run experiments related to specialized subjects for second and third year students of DDWH programme which cover all the course of Electrical machine, Electrical power system, Electronics 2, Electrical installation work and Industrial automation. The course is designed to give them better theoretical understanding as well as providing them hands-on skill. The laboratory involves are:- Electronic 2 laboratory provides three experiments such as FET, Op-Amp and Power Amplifier experiments. Industrial Automation laboratory provides four experiments such as feeding and extracting modules, conveyor system modules, operation an industrial robot and handing system with roller conveyor modules experiments. Electrical Installation Work laboratory provides five practical skill of domestic wiring and consists of five electrical wiring projects. Electrical machine laboratory provides two experiments such as three phase transformer connection and three phase synchronous machine experimental. Electrical power system laboratory provides two experiments such as transmission line and voltage regulation and load flow experimental. At the end of this course, students should be able to discuss experimental results obtained, give creative comments and conclusion and able to write a short report on the experiments done in the laboratory.

DSPK 2912: Project 1
Electrical Engineering final year project requires the understanding of electronic core courses. Project-based approach will be used in the project implementation which can be done in groups of 2 to 4 students. The topic will be proposed by students or supervisor. They must submit a project proposal plan consist of project selection, project planning, literature review, work of theoretical, experimental or computing nature leading to achievement of objective and preparation of project report.

DSPK 2922 : Project 2
Electrical Engineering final year project requires the understanding electronic core courses. Project-based approach will be used in the project implementation which can be done in groups of 2 to 4 students. The topic will be proposed by students or supervisor. They must submit a project proposal plan consist of project selection, project planning, literature review, work of theoretical, experimental or computing nature leading to achievement of objective and preparation of project report.

DSPK 3908: Industrial Training
This course requires the students to apply all technical and soft-skills knowledge that have been taught throughout the study years. The students will be exposed to the real working environment and practicing their communication skills in order to solve real problem.

DIPLOMA IN

MECHANICAL ENGINEERING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Mechanical Engineering
2. Final Award	Diploma in Mechanical Engineering
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Engineering Technology Accreditation Council (ETAC)
6. Code of Programme	DSPJ
7. Language(s) of Instruction	Bahasa Melayu and English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-governing
10. Study Scheme (Full Time/Part Time)	Full-time and Part Time
11. Study Duration	Full Time: Minimum : 5 semester (2.5 years) Maximum : 8 semester (4 years) Part Time: Minimum : 8 semester (4 years) Maximum : 18 semester (9 years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	**Part Time**	**Full Time**	**Part time**
Normal	5	8	14	15
Short	2	3	8	9

12. Entry Requirement	A) GENERAL UNIVERSITY REQUIREMENTS
	For Sijil Pelajaran Malaysia (SPM) / Polytechnic Certificate / Sijil Kemahiran Malaysia (SKM) / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates Obtain a pass in Sijil Pelajaran Malaysia (SPM) / equivalent qualification with at least THREE (3) credits (Grade C) inclusive Bahasa Melayu and a pass in History at the SPM level. **For Equivalent Qualification Graduates Malaysian Vocational Certificate (SVM)** Obtain the Malaysian Vocational Certificate (SVM) with at least a credit (Grade C) in Bahasa Melayu (Code 1104). **For Equivalent Qualification Graduates (O Level)** Obtain Sijil Pelajaran Malaysia (SPM) with at least a credit (Grade C) in Bahasa Melayu / Bahasa Melayu July Paper. **For Equivalent Qualification Graduates (APEL-A)** Pass the APEL A MQA assessment. **B) SPECIFIC REQUIREMENTS** **For Sijil Pelajaran Malaysia (SPM)** ● Fulfil general university requirements; and ● Specific Programme requirements Obtain at least credits (Grade C) in the followings TWO (2) subjects:

	● Mathematics ● ONE (1) from the Pure Science / Applied Science / Technical subject. AND Pass in English. OR ● Fulfil general university requirements; and ● Specific Programme requirements Obtain at least TWO (2) credits (Grade C) inclusive Pure Science / Applied Science / Technical subject AND Pass in Mathematics. AND Pass in English. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with SPM qualifications who have passed but not obtain a credit (Grade C) in Mathematics at SPM level are require to undergo a bridging programme. **For Malaysian Vocational Certificate (SVM)** ● Fulfil general university requirements; and ● Specific Programme requirements

| | Obtain Malaysian Vocational Certificate (SVM) in a field related to the applied Diploma program with at least a credit (Grade C) in SVM Mathematics.

AND

Obtain Academics CGPA ≥ 3.33; Obtain Vocational CGPA ≥ 3.67.

AND

Pass in SVM History.

AND

Pass in SVM English.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.
- Candidates with SVM Certificate who have passed but not obtain a credit (Grade C) in Mathematics at SVM level are require to undergo a bridging programme.

For Polytechnic Certificate / Kolej Komuniti (SKK) / equivalent

- Fulfil general university requirements; and
- Specific Programme requirements

Obtain Polytechnic Certificate / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level |

	3) Graduates in a field related to the applied Diploma program with a minimum CGPA of 2.00. AND Credit (Grade C) in Mathematics at SPM level / equivalent. AND Passed in English at SPM level / equivalent. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics. ● Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program. **For Sijil Kemahiran Malaysia (SKM) / equivalent (MQF Level 3)** ● Fulfil general university requirements; and ● Specific Programme requirements Obtain Sijil Kemahiran Malaysia (SKM) / A certificate recognized as equivalent at MQF Level 3 with a minimum CGPA of 2.00.

	AND
	Credit (Grade C) in Mathematics at SPM level / equivalent.
	AND
	Passed in English at SPM level / equivalent.
	Notes: ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics. ● Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program.
	For Equivalent Qualification Graduates (O Level) ● Fulfil general university requirements; and ● Specific Programme requirements Obtain GCE O Level qualification with at least a credit (Grade C) in any THREE (3) subjects inclusive Mathematics and Pure Science / Applied Science / Technical.

	Notes:
	- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. - Candidates with O Level who passed but not obtain at least a credit (Grade C) in Mathematics at GCE O Level are required to undergo a bridging program. **For Equivalent Qualification Graduates (APEL-A)** I. Passed APEL A MQA assessment (Aptitude test and Portfolio evaluation); II. Must be at least 20 years old in the year of application; III. Has at least five (5) years of work experience in a related field; and IV. Passed the faculty level interview. **Notes:** - Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.

13. Programme Educational Objectives (PEO)

To produce;

I. Graduates who are competent, innovative and productive as an assistant engineer in the field of Mechanical Engineering and related fields.

II. Graduates who can manage and communicate effectively with leadership skill and self-confidence while striving for career advancement through life-long learning.

III. Graduates who uphold ethical values and contribute to the sustainability needs of the organization and society by participating in various related activities.

14. Programme Learning Outcomes (PLO)			
Programme Learning Outcomes (PLO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO1 Knowledge	Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation as respectively to wide practical procedures and practices.	Lectures, tutorials, industrial training, directed reading, internet searching, active and cooperative learning.	Tests, quizzes, Examinations, Assignments, Project, Presentation and Industrial training report
PLO2 Problem Analysis	Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.	Project based learning, active and cooperative learning, case studies, problem based learning.	Test, Examination, Assignment report and Project report.
PLO3 Design/development of solutions	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, as well as cultural, societal, and environmental considerations as required.	Project based learning, active and cooperative learning, case studies, problem-based learning.	Test, Assignment report and Project report.
PLO4 Investigation	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.	Laboratory work, Industrial training, final year project and group projects.	Assignment report, Log book and Project report.
PLO5 Tool Usage	Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.	Laboratory work, Industrial training, project and group projects.	Laboratory reports, Supervisory Evaluation Project report.

PLO6 **The Engineering Technician and The World**	Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report.
PLO7 **Ethics**	Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report
PLO8 **Individual and Collaborative Team Work**	Function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings	Active learning, Assignment, Project, Industrial training and laboratory work.	Assignment report, Project, Industrial training report and ethical values assessment.
PLO9 **Communication**	Communicate effectively and inclusively 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.	Assignments, Projects, Industrial training, cooperative learning and discussion.	Project/assignment reports, Industrial training report and Presentations.
PLO10 **Project Management and Finance**	Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.	Assignment, laboratory work, Industrial training, cooperative learning and project	Assignment report, laboratory report, Project report, Industrial training report and Presentation.

PLO12 Life Long Learning	Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.	Assignment, Projects, Industrial training directed reading, active learning and discussion.	Project report, Log book, assignment reports and Industrial training report.
15. Total credit hours to graduate		**93 credits hours**	

16. Programme structures and features, curriculum and award requirements
This programme is offered on full-time mode and is based on a 3 Semester Academic Session with several courses being delivered and assessed in each semester. Assessment is based on final examination, coursework, project and practical training. **Assessment:** i. Lecture based course: Final examinations (not less than 50%) and Coursework. (Refer to UTM Academic Regulations) ii. Skill-based course: 100% Coursework. **Award requirements:** Students should achieve a total of 93 credit hours with minimum CPA of 2.00.

17. Career Prospect
Graduates of the program can work as assistant mechanical engineer or technical assistant, engineering entrepreneur and any related jobs in mechanical engineering. They also continue to further their study in various disciplines related to mechanical engineering in local or abroad.

18. UTM Diploma ++ Programme
Students are given the opportunity to enrol in short courses offered by university that are relevant to the engineering field during their studies

19. Our Uniqueness

This program is designed to:
I.   Comply to MQA and ETAC Standard
II. Equip students with engineering skills through hands-on laboratories and workshop.

Student will go through 16 weeks of Industrial Training with established mechanical engineering firm or government sector in order to expose them with real working experience as a technician or assistant mechanical engineer. Also, the students to gain additional qualifications, broaden their knowledge in order to qualify for entry into honours or postgraduate programs, or undertake professional development for a range of purposes.

20. Facilities Available

List of Laboratories:
i.   Fluid Engineering laboratory
ii.   Strength Material laboratory
iii.   Mechanic Machine laboratory
iv.   Material Science laboratory
v.   Thermodynamics laboratory
vi.   Flexible Manufacturing laboratory
vii.   Welding workshop
viii. Air-conditioning workshop
ix.   Machining workshop
x.   Automotive workshop
xi.   Sheet metal and fitting workshop
xii.   Computer Laboratory
xiii. Language Laboratory
xiv.   Science Laboratory
xv.   Library
xvi.   AutoCAD software
xvii. C^{++} software

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
DSPS 1712	Physics	2
DSPS 1023	Engineering Mathematics 1	3
DSPJ 1203	Statics	3
DSPJ 1503	Engineering Drawing	3
DSPJ 1902	Introduction to Mechanical Engineering	2
DDWJ 1912	Experimental Method	2
	Total	**17**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
ULRS 1032	Integrity and Anti-Corruption Course	2
DDWS 1133	Engineering Mathematics 2	3
DSPJ 1213	Dynamics	3
DSPJ 1413	Thermodynamics	3
DSPJ 1513	Introduction to Design	3
DSPJ 1922	Mechanical Workshop Practice	2
	Total	**18**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
ULRS 1182*/ UHLM 1122*	Appreciation for Ethics and Civilisation / Malay Language for Communication	2
DSPJ 1932	Mechanical Workshop Technology	2
DSPK 1022	Basic Electrical Engineering	2
DSPK 1012	Electronics	2
	Total	**8**

Notes: * Local students register for ULRS while international students register for UHLM

YEAR 2 (SEMESTER 4)

Code	Course	Credit
ULRF 2xx2	Service Learning and Community Engagement Courses	2
DSPJ 2013	Programming for Engineer	3
DSPJ 2113	Solid Mechanics	3
DSPJ 2303	Fluid Mechanics	3
DSPJ 2423	Applied Thermodynamics	3
DSPJ 2603	Materials Science	3
	Total	**17**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPJ 2123	Applied Solid Mechanics	3
DSPJ 2213	Mechanics of Machine	3
DSPJ 2313	Applied Fluid Mechanics	3
DSPJ 2502	Final Year Project 1	2
DSPJ 2703	Manufacturing Process	3
DSPJ 2802	Occupational, Safety and Health	2
DSPJ 2912	Engineering Laboratory 1	2
	Total	**18**

YEAR 2 (SEMESTER 6)
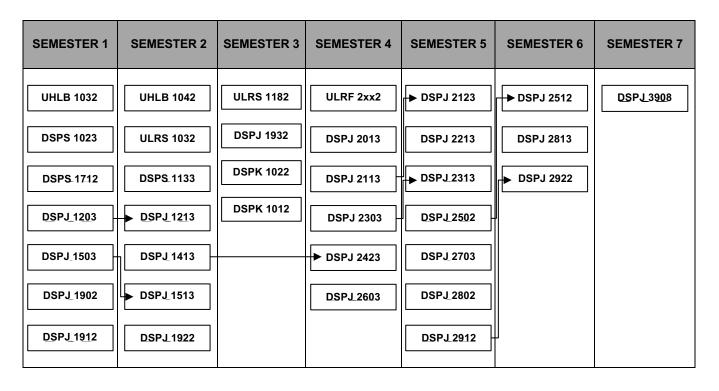
Code	Course	Credit
DSPJ 2512	Final Year Project 2	2
DSPJ 2813	Industrial Engineering	3
DSPJ 2922	Engineering Laboratory 2	2
	Total	**7**

YEAR 3 (SEMESTER 6)

Code	Course	Credit
DDWJ 3908	Industrial Training	8
	Total	**8**
	Total Credits	**93**

PRE-REQUISITE
DIPLOMA IN MECHANICAL ENGINEERING

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7
UHLB 1032	UHLB 1042	ULRS 1182	ULRF 2xx2	DSPJ 2123	DSPJ 2512	DSPJ 3908
DSPS 1023	ULRS 1032	DSPJ 1932	DSPJ 2013	DSPJ 2213	DSPJ 2813	
DSPS 1712	DSPS 1133	DSPK 1022	DSPJ 2113	DSPJ 2313	DSPJ 2922	
DSPJ 1203	DSPJ 1213	DSPK 1012	DSPJ 2303	DSPJ 2502		
DSPJ 1503	DSPJ 1413		DSPJ 2423	DSPJ 2703		
DSPJ 1902	DSPJ 1513		DSPJ 2603	DSPJ 2802		
DSPJ 1912	DSPJ 1922			DSPJ 2912		

DIPLOMA IN MECHANICAL ENGINEERING

DSPJ 1203: Static

This course will introduce the student with concepts of the first, second and third Newton's Law. Later each law is applied to a particle and then to rigid bodies which are subjected to a system of coplanar forces. A general case of 2D and 3D force systems acting on rigid bodies are then introduced. At the end of the course, students should be able to apply the laws of Newton in most engineering structural problems and will be exposed with the design simulation.

DSPJ 1503: Engineering Drawing

This course leads students to an understanding of engineering drawing, an essential means communication in engineering. The ability to read and produce engineering drawings is an essential part of a technical education and is also considered as the language of engineers. This course will cover the basics of technical drawing (basic CAD/computer skills, lettering, geometrical drawing, orthographic projection, 3D projections, dimensioning, sectioning, etc.) through a series of assignments and project. At the end of this course students will be able completed using conventional drawings tools, and CAD.

DSPJ 1902: Introduction to Mechanical Engineering

This course is offered in the first semester to all new students of Mechanical Engineering Programme. The course includes general introduction to the field of mechanical engineering and the technician's responsibilities to society. Main sub-fields in the discipline such as production and industrial, automotive, aeronautic and plant engineer. The course also exposes the students to generic skills related to engineering practices such as team working, making ethical decisions, and communication skill through the lectures and group projects. Prior to the weekly lectures and presentations, a special welcoming lecture will be given by Head of Programme. At the end of this course, students are be able to understand the field of mechanical engineering.

DSPJ 1912: Experimental Method

This course is conducted by lectures and laboratory experiments where students are exposed to the experimental method theory for the initial weeks followed by laboratory works. The lectures shall cover the fundamentals of experimental method and the basic principles in measurements, instrumentation and analysis of results. It shall focus on the design of mechanical experiments, various types of measuring instruments inclusive of sensors and transducers, estimation of errors and display of results. It shall also cover the analysis of the results and various aspects of report writing. Student comprehension will be tested by two written tests. During the laboratory sessions, several groups will be formed to conduct several experiments. The students are expected to apply the theories covered in the first part of the semester when performing the various experiments involving data recording, displaying of results as well performing error analysis using various statistical approaches. Written reports are to be prepared for the various experiments conducted. At the end of the course, students are able to conduct experiments with the appropriate measuring tools as well as performing error analysis using various statistical methods before finally producing technical reports using appropriate format and standard.

DSPJ 1213: Dynamic
This course introduces students to the branch of applied mechanics concerned with the study of force and bodies motion. The study of dynamics begins with an introduction of the principles of kinematics, then followed by introducing the Newton's laws, which are applied to solve rectilinear and curvilinear motion problems. The course also exposes students to analysis the work and energy, impulse and momentum and to understand the principles of rigid body motion. At the end of this course, students will be able to understand the geometric aspects of motion and the forces causing in the case of particles and rigid bodies.

DSPJ 1413: Thermodynamics
This course introduced to the concepts of the first law of thermodynamics for closed and open systems. Definition of different types of energy and their relationship with work and heat. Process analysis for closed and open systems. Steady state equation for open system. Second law of thermodynamics including heat engine and reversed heat engines. Concept of entropy, entropy changes for simple compressible substances, entropy balance and entropy creation. At the end of the course students should be able to apply and analyze problems of first and second law of thermodynamics in most engineering energy problems.

DSPJ 1513: Introduction to Design
This course is designed to exposed students to be creative in design process based on scientific method by applying the fundamental principles and learning to solve engineering design problems creatively and effectively according to schedule. At the end of this course the students should be able to develop sketches, analyse design requirements and develop communication skills.

DSPJ 1922: Mechanical Workshop Practice
This course presents the principles and hands-on for mechanical engineering programme. In particular, it is designed to provide hands-on experience using mechanical workshop instruments. Workshops involved are particularly of mechanical engineering such as lathe, milling, filling workshop, welding workshop, and CNC. Students also will be given a project for each workshop and have to finish in a certain given period through-out the semester. At the ends of this course, student should be able to use workshop tools and finished the project in period given.

DSPJ 1932: Mechanical Workshop Technology
This course presents the principles and hands-on for mechanical engineering programmed. In particular, it is designed to provide hands-on experience using mechanical workshop instruments. Workshops involved are particularly of mechanical engineering such as automotive workshop, sheet metal workshop, moulding workshop, CNC workshop and air-conditioning. Students also will be given a project for each workshop and have to finish in a certain given period through-out the semester. At the ends of this course, student should be able to use workshop tools and finished the project in period given.

DSPJ 2013: Programming for Engineer
This course formally introduces the concept of computers, algorithms, programming languages, pseudo code, and design of programs for solution to computational engineering problems. The two programming and languages introduced in this course are C and MATLAB. Topic covered in this course include data types, constants, variables, arithmetic operations, assignment statement, looping, formatted I/O, functions, arrays, matrix operations, data structures, plotting, and model building. At the end of this course, student should be able to construct appropriate programming using software learning.

DSPJ 2113: Solid Mechanics
This course covers the basic concept of stress and strain analysis of deformable bodies. Determination of internal forces and moments due to external loadings are initially covered. Concepts of normal and shear stress and strain are introduced for simple structural members. Further concepts of stresses due to bending, shear, torsional and combined loadings are developed. Statically Indeterminate cases of structural members due to axial, torsional and temperature differential loadings are also introduced. The stress in thin cylinder is covered before finally introducing the theory of deflection of beam. At the end of the course, students are able to to perform basic structural analysis involving basic concept of stress and strain.

DSPJ 2303: Fluid Mechanics
This course involves the fundamentals and applications of static and dynamic fluids. For static fluid includes the fluid properties, pressure measurements, hydrostatic forces, buoyancy and stability. For dynamic fluid includes the application of the Bernoulli, continuity and momentum equations such as jet forces on stationary and moving planes and vanes, pipe bends, and nozzles; flow measurement using venturi, orifice meters and pitot tubes; flow in pipes; pump, compressor and turbine. At the end of this course student should be able to explain and solve problem related to the fluid mechanics.

DSPJ 2423: Applied Thermodynamics
This course gives the applications of basic thermodynamics covered in Thermodynamics. These include air compression by a reciprocating compressor, the power cycles which comprise of the steam and gas turbine power plants, the internal combustion engines, the refrigeration cycles for both the reversed Rankine cycle that uses the vapor- compression refrigeration cycles and the gas refrigeration cycles, and also heat transfer with the emphasis on the conduction mode of heat transfer as well as heat exchangers. At the end of this course, students learned the thermodynamics systems and their performance criteria and are able to solve the system's problems.

DSPJ 2603: Materials Science
This course is an important subject that relates materials structure and their properties. This basic knowledge is necessary for engineers who are involved in designing certain components and products so that the most suitable materials are utilized. At the end of this courses, student should able to describe about materials such as structure, properties, phase diagram, treatment and etc.

DSPJ 2123: Applied Solid Mechanics
This course presents further applications to structural analysis. It involves the studies on the transformation of stress and strain, the application of failure theories and the stress analysis of a thick cylinder. Deflection and slope analysis of simple structures using energy method is covered. Buckling of columns is then considered. Elastic theory of beam and shaft are extended to the region of plastic to increase their usage using the assumption of elastic-plastic behaviour. At the end of the course, students will be able to perform basic structural analysis using first principles approach.

DSPJ 2213: Mechanics of Machine
This course is continuation from dynamic course. The chapter will be covered several analysis of gear systems, belt, balancing and crank effort diagram. Besides that, topics about governors are also discussed. Basic of vibration chapter will include free vibration and force vibration analysis. Generally, this course is intended to cover the field of engineering theory, analysis and practice which is described as mechanisms of machines and vibration analysis.

DSPJ 2313: Applied Fluid Mechanics
This course introduces students to fluid dynamic principle comprises of the non-viscous and viscous fluids. The course begins with a Potential Flow Theory which discuses a non-viscous fluid flow behaviour followed by the Boundary layer theory for the viscous fluid flow behaviour. In addition, a topic pertaining with flow behaviour when there is a change in a fluid density will be introduced in Compressible Flow theory. The course also covers the theory of Turbo machines comprises of turbines and pumps. At the end of this course student should be able to explain and solve problem related to the applied fluid mechanics.

DSPJ 2502: Final Year Project 1
Final year project requires the understanding of mechanical core courses. Project-based approach will be used in the project implementation which will be done by team or individual. The topic will be proposed by students. This is the first part of two parts of Final Year Project that every student must fulfil successfully. Students are introduced to the methodologies of research and application development through a series of lectures. Students are guided through a step-by-step practice to complete the initial stages of proposal, planning and design of a project. Students must also meet regularly with supervisor(s) who will monitor their continuous progress. Students are required to prepare a report and present their initial work.

DSPJ 2703: Manufacturing Process
This subject consists of introduction to manufacturing processes, common aspect in manufacturing, metal casting, bulk metal forming, sheet metal forming, forming of polymer, machining operations, non-traditional machining, joining processes, and manufacturing in the competitive environments. Upon completion of the course, students should be able to recommend suitable part manufacturing processes when provided a set of functional requirements and product development constraint.

DSPJ 2802: Occupational Safety and Health
This course introduces the basic knowledge of occupational safety and health (OSH) at work. In particular, it emphasises on current issues and best practices in OSH in Malaysia and the world, OSH legislations, methods of hazard identification, accident prevention concept and its implementation at workplace. At the end of the course, students should be able to identify theoretical and practical aspect of OSH in industry, its impact to surrounding and identifying hazard risk by applying safety knowledge.

DSPJ 2912: Engineering Laboratory 1
This course presents the principles and methodology for mechanical engineering programme. In particular, is designed to understand the theory and application of measuring instruments and equipment, to discuss and evaluate experimental errors, to provide hands-on experience using laboratory instruments. Experiments involved are particularly of mechanical engineering subjects such as thermodynamics, dynamics, strength of material and fluid mechanics. Students also learn formal technical writing skills which are required for all written reports. At the end of this course, students learned the theory and application of measuring instruments and equipment by experimental setup and data gathering and also learn formal technical writing skills which are required for all written reports.

DSPJ 2512: Final Year Project 2
This is the second part of two parts of Final Year Project that every student must fulfil successfully. Students are required to execute the next phases of their development plan from Part 1. Students are now required to code, integrate and make up the proposed project. Students will test the final fully-integrated project following the development and research testing practices. Students are required to prepare a full report and present their final work. They are also required to prepare a full report and present their final work. Students must also meet regularly with supervisor(s) who will monitor their continuous progress. At the end of the course, students should be able to incorporate relevant skills learned to perform tasks in future.

DSPJ 2813: Industrial Engineering
Industrial engineering tackles issues on efficiency and effectiveness of doing work. Efficiency and effectiveness are the concept of productivity. Productivity ensures effective cost of organizational operation, competitiveness and survival of an organization. Industrial engineers are technical experts who also coach, facilitate teamwork at all levels of an organization, and participate in top management visioning. The techniques are tools to improve productivity. At the end of this subject, it is aimed to provide the basic techniques of Industrial Engineering to enable the students to design improve and install integrated systems of people, materials, information, and equipment.

DSPJ 2922: Engineering Laboratory 2
This course presents the principles and methodology for mechanical engineering programme. In particular, is designed to understand the theory and application of measuring instruments and equipment, to discuss and evaluate experimental errors, to provide hands-on experience using laboratory instruments. Experiments involved are particularly of mechanical engineering subjects such as thermodynamics, mechanics of machine, material science and fluid mechanics. At the end of this course, students learned the theory and application of measuring instruments and equipment by experimental setup and data gathering and also learn formal technical writing skills which are required for all written reports.

DSPJ 3908: Industrial Training
This course requires the students to apply all technical and soft-skills knowledge that have been taught throughout the study years. The students will be exposed to the real working environment and practicing their communication skills in order to solve real problems.

DSPK 1022: Basic Electrical Engineering
The course introduces basic of electrical power for non-electrical students. Topics covered are direct current (DC) and alternating current (AC) generation and analysis of simple electric circuits three phase system, transformer and dc machines. In the DC circuits the emphasis is on evaluating voltage current, resistance and power by applying basic laws and rules. In AC circuits, single phase and three phase system concepts are introduced. The course also includes the constructional features, principles of operational and performance analysis of transformer and dc machines. At the end of this course, student will be able to understand basic of electrical engineering.

DSPK 1012: Electronics
The course introduces basic of electronics for non-electrical students. This subject consists of introduction to semiconductor devices such as diodes, transistors and operational amplifier. Introduction to diode analysis and applications. Introduction to bipolar junction transistor (BJT), structure, symbol, characteristics and operation. BJT biasing, BJT as amplifier. Introduction to field effect transistor (FET) structure, symbol, characteristics and operation, FET biasing, FET as amplifier. Introduction to operational amplifier, symbol, characteristics, basic circuit and applications.

DIPLOMA IN

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CHEMICAL ENGINEERING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Chemical Engineering
2. Final Award	Diploma in Chemical Engineering
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Engineering Technology Accreditation Council (ETAC)
6. Code of Programme	DSPT
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full-time
11. Study Duration	Full Time: Minimum: 5 semester (2.5 years) Maximum: 8 semester (4 years) Part Time: Minimum: 8 semester (4 years) Maximum: 18 semester (9 years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	Part Time	Full Time	Part time
Normal	5	8	14	15
Short	2	3	8	9

12. Entry Requirement	**A) GENERAL UNIVERSITY REQUIREMENTS**
	For Sijil Pelajaran Malaysia (SPM) / Polytechnic Certificate / Sijil Kemahiran Malaysia (SKM) / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates
	Obtain a pass in Sijil Pelajaran Malaysia (SPM) / equivalent qualification with at least THREE (3) credits (Grade C) inclusive Bahasa Melayu and a pass in History at the SPM level.
	For Equivalent Qualification Graduates Malaysian Vocational Certificate (SVM)
	Obtain the Malaysian Vocational Certificate (SVM) with at least a credit (Grade C) in Bahasa Melayu (Code 1104).
	For Equivalent Qualification Graduates (O Level)
	Obtain Sijil Pelajaran Malaysia (SPM) with at least a credit (Grade C) in Bahasa Melayu / Bahasa Melayu July Paper.
	For Equivalent Qualification Graduates (APEL-A)
	Pass the APEL A MQA assessment.
	B) SPECIFIC REQUIREMENTS
	For Sijil Pelajaran Malaysia (SPM)
	● Fulfill general university requirements; and ● Specific Programme requirements
	Obtain at least credits (Grade C) in the followings TWO (2) subjects:

	● Mathematics ● ONE (1) from the Pure Science / Applied Science / Technical subject. AND Pass in English. OR ● Fulfill general university requirements; and ● Specific Programme requirements Obtain at least TWO (2) credits (Grade C) inclusive Pure Science / Applied Science / Technical subject AND Pass in Mathematics. AND Pass in English. **Notes:** ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with SPM qualifications who have passed but not obtain a credit (Grade C) in Mathematics at SPM level are require to undergo a bridging programme. **For Malaysian Vocational Certificate (SVM)** ● Fulfill general university requirements; and ● Specific Programme requirements

	Obtain Malaysian Vicational Certificate (SVM) in a field related to the applied Diploma program with at least a credit (Grade C) in SVM Mathematics.

AND

Obtain Academics CGPA ≥ 3.33; Obtain Vocational CGPA ≥ 3.67.

AND

Pass in SVM History.

AND

Pass in SVM English.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.
- Candidates with SVM Certificate who have passed but not obtain a credit (Grade C) in Mathematics at SVM level are require to undergo a bridging programme.

For Polytechnic Certificate / Kolej Komuniti (SKK) / equivalent

- Fulfill general university requirements; and
- Specific Programme requirements

Obtain Polytechnic Certificate / Community College Certificate (SKK) / Equivalent Qualifications (MQF |

	Level 3) Graduates in a field related to the applied Diploma program with a minimum CGPA of 2.00.
	AND
	Credit (Grade C) in Mathematics at SPM level / equivalent.
	AND
	Passed in English at SPM level / equivalent.
	Notes: ● Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. ● Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics. ● Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program.
	For Sijil Kemahiran Malaysia (SKM) / equivalent (MQF Level 3) ● Fulfill general university requirements; and ● Specific Programme requirements
	Obtain Sijil Kemahiran Malaysia (SKM) / A certificate recognized as equivalent at MQF Level 3 with a minimum CGPA of 2.00.

	AND
	Credit (Grade C) in Mathematics at SPM level / equivalent.
	AND
	Passed in English at SPM level / equivalent.
	Notes: - Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work. - Candidates with Certificate qualifications who do not obtain a credit (Grade C) in Mathematics at SPM level or its equivalent may be accepted if the Certificate program includes a Mathematics subject equivalent to SPM level Mathematics. - Candidates with Certificate qualifications who have passed but not obtain at least a credit (Grade C) in Mathematics at SPM level or Certificate level are require to undergo a bridging program.
	For Equivalent Qualification Graduates (O Level) - Fulfill general university requirements; and - Specific Programme requirements
	Obtain GCE O Level qualification with at least a credit (Grade C) in any THREE (3) subjects inclusive Mathematics and Pure Science / Applied Sciene / Technical.
	Notes: Candidates must not have disabilities such as blind / deaf / mute / learning difficulties /

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paralysis or physical impairments that hinder practical work.

- Candidates with O Level who passed but not obtain at least a credit (Grade C) in Mathematics at GCE O Level are required to undergo a bridging program.

For Equivalent Qualification Graduates (APEL-A)

I.   Passed APEL A MQA assessment (Aptitute test and Portfolio evaluation);

II.   Must be at least 20 years old in the year of application;

III.   Has at least five (5) years of work experience in a related field; and

IV.   Passed the faculty level interview.

Notes:
- Candidates must not have disabilities such as blind / deaf / mute / learning difficulties / paralysis or physical impairments that hinder practical work.

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13.   **Programme objectives:**

To produce

i.   Graduates who are competent, creative and productive as an assistant engineer in solving various problems in the field of Chemical Engineering and related fields.

ii.   Graduates who can manage and communicate effectively with leadership skill and self-confidence while striving for career advancement through life-long learning.

Graduates who uphold ethical values and contribute to the sustainability needs of the organization and society by participating in various related activities.

14. Programme Learning Outcomes (PLO)			
(a) Technical Knowledge and Competencies			
Programme Learning Outcomes(PO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO1 Knowledge	Apply knowledge of applied mathematics, applied science, computing and engineering fundamentals and an engineering specialisation as respectively to wide practical procedures and practices.	Lectures, tutorials, industrial training, directed reading, internet searching, active and cooperative learning.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report
PLO2 Problem Analysis	Identify and analyse well-defined engineering problems reaching substantiated conclusions using codified methods of analysis specific to their field of activity.	Project based learning, active and cooperative learning, case studies, problem-based learning.	Test, Assignment report and Project report.
PLO3 Design/development of solutions	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, as well as cultural, societal, and environmental considerations as required.	Project based learning, active and cooperative learning, case studies, problem-based learning.	Test, Assignment report and Project report.
(b) Generic Skills			
PLO4 Investigation	Conduct investigations of well-defined problems; locate and search relevant codes and catalogues, conduct standard tests and measurements.	Laboratory work, Industrial training, final year project and group projects.	Assignment report, Log book, and Project report.

PLO5 **Tool Usage**	Apply appropriate techniques, resources, and modern engineering computing and IT tools to well-defined engineering problems, with an awareness of the limitations.	Laboratory work, Industrial training, project and group projects.	Laboratory reports, Industrial training report, Project report.
PLO6 **The Engineering Technician and the World**	Consider sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment, in solving well-defined engineering problems.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Tests, quizzes, Examinations, Assignments, Presentation and Industrial training report
PLO7 **Ethics**	Understand and commit to professional ethics and responsibilities and norms of technician practice and including compliance with national and international laws. Demonstrate an understanding of the need for diversity and inclusion.	Lecture, Assignments, Projects, Industrial training and laboratory works.	Assignment, Project and Industrial training report
PLO8 **Individual and Collaborative Team Work**	Function effectively as an individual, and as a member in diverse and inclusive teams in multi-disciplinary, face-to-face, remote and distributed settings.	Assignments, Projects, Industrial training, cooperative learning and discussion.	Project/assignment reports, Industrial training report and Presentations.
PLO9 **Communication**	Communicate effectively and inclusively 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	Assignments, Industrial training and projects	Assignment reports, Project report, Industrial training report and Presentations.
PLO10 **Project Management and Finance**	Demonstrate awareness of engineering management principles as a member or leader in a technical team and to manage projects in multidisciplinary environments.	Assignment, Projects, directed reading, internet searching, lectures, active and cooperative learning.	Project report and Assignment reports.

PLO11 **Life Long Learning**	Recognize the need for, and have the ability for i) independent and life-long learning and ii) critical thinking in the face of specialised technical knowledge.	Assignment, Projects, Industrial training directed reading, cooperative learning and discussion.	Project report, Log book, assignment reports and Industrial training report

15. Total credit hours to graduate	**93 credit hours**

16. Programme structures and features, curriculum and award requirements

This programme is offered on full-time based on a 3 Semesters Academic Session with several courses being delivered and assessed in each semester.

Assessment:
Final examinations (not more than 50%) and coursework. (Refer to UTM Academic Regulations)

Award requirements:
Students should achieve a total of 93 credit hours with minimum CPA of 2.00.

17. Career Prospect

Graduates of the program
a) Can work as assistant engineer or technical assistant in chemical engineering industry or any related engineering industry.
b) May continue to further their study in various disciplines related to chemical engineering at local or foreign universities.

18. UTM Diploma ++ Programme

Students are given the opportunity to enroll in short courses offered by university that are relevant to the engineering field during their studies.

19. Facilities Available

List of Laboratories:
a. Computer Laboratory
b. Language Laboratory
c. Chemistry Laboratory
d. Physics Laboratory
e. Library
f. Fluid Engineering Laboratory
g. Thermodynamics Laboratory
h. Environmental Engineering Laboratory
i. Unit Operations Laboratory
j. AutoCAD software
k. Matlab software
l. Workshop

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
ULRS 1032	Integrity and Anti Corruption Course	2
DSPS 1023	Engineering Mathematics 1	3
DSPT 1613	Chemistry	3
DSPS 1712	Physics	2
DSPT 1023	Statics	3
DSPT 1012	Introduction to Chemical Engineering	2
	Total	**17**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
ULRS 1182	Appreciation of Ethics and Civilisation	2
DSPS 1133	Engineering Mathematics 2	3
DSPT 1133	Thermodynamics	3
DSPT 1213	Material Engineering	3
DSPT 1113	Mass Balance	3
DSPJ 1922	Mechanical Workshop Practice	2
	Total	**18**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
DSPT 1123	Energy Balance	3
DSPT 1711	Thermodynamic and Material Engineering Laboratory	1
DSPT 1512	Process Control and Instrumentation	2
DSPJ 1932	Mechanical Workshop Technology	2
	Total	**8**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
ULRF 2xx2	Service Learning and Community Engagement Courses	2
DSPT 2623	Analytical Chemistry	3
DSPT 2313	Transport Process	3
DSPT 2223	Chemical Reaction Engineering	3
DSPT 2143	Fluid Mechanics	3
DSPT 2721	Fluid Mechanics Laboratory	1
DSPT 2413	Environmental Engineering	3
	Total	**18**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPT 2523	Computer Engineering	3
DSPT 2542	Occupational Safety and Health	2
DSPT 2333	Separation Processes	3
DSPT 2731	Chemical Reaction and Environmental Engineering Laboratory	1
DSPT 2802	Final Year Project 1	2
DSPT 2033	Engineering Drawing	3
DSPK 2103	Electrical Principle	3
	Total	**17**

YEAR 2 (SEMESTER 6)

Code	Course	Credit
DSPT 2812	Final Year Project 2	2
DSPT 2322	Refinery and Petrochemical Technology	2
DSPT 2532	Plant Operation and Maintenance	2
DSPT 2741	Unit Operation Laboratory	1
	Total	**7**

YEAR 3 (SEMESTER 7)

Code	Course	Credit
DSPT 3908	Industrial Training	8
	Total	**8**
	Total Credits	**93**

PRE-REQUISITE
DIPLOMA IN CHEMICAL ENGINEERING

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7
UHLB 1023 →	UHLB 1042		ULRF 2XX2	DSPT 2513		
ULRS 1032	ULRS 1182		DSPT 2623	DSPT 2542		
DSPS 1023 →	DSPS 1133 →	DSPT 1123 →	DSPT 2313 →	DSPT 2333	DSPT 2812	DSPT 3908
DSPT 1613	DSPT 1133	DSPT 1711	DSPT 2223	DSPT 2731	DSPT 2322	
DSPS 1712	DSPT 1213	DSPT 1512	DSPT 2143	DSPT 2802	DSPT 2532	
DSPT 1023	DSPT 1113	DSPJ 1932	DSPT 2721	DSPT 2033	DSPT 2741	
DSPT 1012	DSPJ 1922		DSPT 2413	DSPK 2103		

SYNOPSIS OF CORE COURSES

DIPLOMA IN CHEMICAL ENGINEERING

DSPJ 1922: Mechanical Workshop Practice
This course presents the principles and hands-on for mechanical engineering programme. In particular, it is designed to provide hands-on experience using mechanical workshop instruments. Workshops involved are particularly of mechanical engineering such as lathe, milling, filling workshop, welding workshop, and CNC. Students also will be given a project for each workshop and have to finish in a certain given period through-out the semester. At the ends of this course, student should be able to use workshop tools and finished the project in period given.

DSPJ 1932: Mechanical Workshop Technology
This course presents the principles and hands-on for mechanical engineering programmed. In particular, it is designed to provide hands-on experience using mechanical workshop instruments. Workshops involved are particularly of mechanical engineering such as automotive workshop, sheet metal workshop, moulding workshop, CNC workshop and air-conditioning. Students also will be given a project for each workshop and have to finish in a certain given period through-out the semester. At the ends of this course, student should be able to use workshop tools and finished the project in period given.

DSPT 1012: Introduction to Chemical Engineering
This course is only offered in the 1st semester to all new students of Chemical Engineering Programmed. The course includes a general introduction to the field of chemical engineering and the technician's responsibilities to society. Main subfields in the discipline such as Chemical Reaction and Separation Engineering, Environmental Engineering, Process Design Engineering and Material Engineering will be highlighted by the experts of the respective subfields. The course also exposes the students to generic skills related to engineering practices such as team working, making ethical decisions and communication skill through the lectures and group projects.

DSPT 1023: Statics
This course introduces students to the basic principles and concepts in mechanics. It will deal with the resultant and resolution of force(s) acting on a particle, the equilibrium of a particle, the effect of force(s) on a rigid body, how to replace a force system with equivalent system and the equilibrium of rigid body. This course also includes the determination of centroid, analysis of structure and friction. The second part of the course deals with mechanics of materials. Topics covered include stress and deformation of members under axial loading and torsion in circular shafts. At the end of the course, students should be able to demonstrate and apply the knowledge for solving various engineering problems.

DSPT 1113: Mass Balance
This course introduces students to the chemical engineering profession and the fundamental operations of chemical process equipment. It also provides students with the basic principles of
chemical engineering material balances as well as calculation techniques to solve material balance problems for chemical process systems and equipment. Students will also be exposed to solving problems using software

DSPT 1123: Energy Balance
(Pre/co requisite DSPT 1113 (Mass Balance))
This course introduces students to the chemical engineering profession and the fundamental operations of chemical process equipment. It also provides students with the basic principles of chemical engineering energy balances as well as calculation techniques to solve the material and energy balance problems for chemical process systems and equipment.

DSPT 1333: Thermodynamics
This course introduces concepts of the first law of thermodynamics for closed and open systems. Definition of different types of energy and their relation with work and heat. Process analysis for closed and open systems. Steady state equation for open system. Second law of thermodynamics including heat engine and reversed heat engines. Concept of entropy, entropy changes for simple compressible substance, entropy balance and entropy creation

DSPT 1213: Material Engineering
Material Engineering is a course that covers the principles of atomic bonds, crystal structure, crystalline defects, solid solutions, phase diagrams, and crystallography. These concepts are linked to the structure, properties, processing, and performance of different classes of materials. Through a specific focus on metals, polymers, ceramics, and composites, students gain a profound understanding of material design, selection, and customization for specific applications. By the end of the course, students are well-equipped to make decisions regarding material design, ensuring that the chosen materials align with the specific needs.

DSPT 1512: Process Control & Instrumentation
This course provides introductory level course about process control and instrumentation systems used in chemical industries. The main topics that will be covered in this subject are fundamentals and concepts of process control and instrumentation systems. Included in this course is the working principle of various control system instruments such as measuring instruments for flow, level, temperature, pressure and composition; instrument such as transmitters, control valves, data communication in computer process control, distributed control system (DCS) and alarm systems.

DSPT 1613: Chemistry
This course emphasizes on classification of matter, atoms, molecules, ions and mole concept, balancing of chemical equation, stoichiometry, concentration units, atomic structure, periodic table, chemical bonding, gas laws, chemical equilibrium, acids-bases and electrochemistry. The course will also provide several laboratory works to enhance the theoretical aspect and the opportunities to teach through interaction with students.

DSPT 1711: Thermodynamics and Material Engineering Laboratory
This course presents the principles and methodology for chemical engineering programme. In particular, it is designed to understand the theory and application of measuring instruments and equipment, to discuss and evaluate experimental errors, to provide hands-on experience using laboratory instruments. Experiments involved are particularly of thermodynamics and material engineering. Students also learn formal technical writing skills which are required for all written reports.

DSPK 2103: Electrical Principles

This course is designed to introduce students with the basic principles, laws, theorems and methods of analysis for solving problems in Direct Current (DC) and Alternating Current (AC) circuits. Laws, theorems and analysis methods that will be covered in series, parallel and series- parallel circuits includes Ohm's Law, Kirchhoff Voltage and Current law analysis. The students are expected to be able to explain operation of electrical power equipment.

DSPT 2033: Engineering Drawing

This course leads students to an understanding of engineering drawing, an essential means of communication in engineering. This course will cover the basics of technical drawing (basic CAD/computer skills, lettering, geometrical drawing, orthographic projection, 3D projections, dimensioning, sectioning, etc.) through a series of assignments and a project. Engineering drawings will be completed using conventional drawing tools, and CAD. At the end of this course, the students should be able to develop technical skills according to engineering drawing standard.

DSPT 2143: Fluid Mechanics

This course involves the fundamentals and applications of static and dynamic fluids. For static fluid includes the fluid properties, pressure measurements, hydrostatic forces, buoyancy and stability. For dynamic fluid includes the application of the Bernoulli, continuity and momentum equations such as jet forces on stationary and moving planes and vanes, pipe bends, and nozzles; flow measurement using venturi, orifice meters and pitot tubes; flow in pipes; dimensional analysis and similarity.

DSPT 2223: Chemical Reaction Engineering
(Pre/co requisite DSPT 1123 (Energy Balance))

This course introduces students to chemical reactor design and theories in the area of chemical reaction engineering with emphasis on homogeneous and heterogeneous reactions. It will examine some problems related to multiple reactions and non-isothermal operations. Students will also work cooperatively on a computer assignment to expose them to solving problems using software packages such as PolyMath.

DSPT 2313: Transport Processes
(Pre/co requisite DSPT 1123 (Energy Balance))

This course introduces students to the basic principles and application of heat and mass transfer in chemical engineering. The understanding from this course is useful for the better understanding in distillation, absorption, liquid-liquid extraction, membrane separation, leaching, evaporation and others chemical processes.

DSPT 2323: Refinery and Petrochemical Technology

This course presents the principles for chemical and physical processing in the Petrochemical and Refinery technologies. In particular, it emphasizes on the purpose of the process, understanding reaction chemistry, and their application. The course features extensive reading exercises as well as individual/group project and assignments.

DSPT 2333: Separation Process
(Pre/co requisite DSPT 2313 (Transport Processes))

This course introduces different types of unit operations involved in the chemical and other physical processing industries such as humidification, absorption, distillation, liquid-liquid extraction and solid-liquid extraction (leaching). It also deals with design of separation operations using mass transfer principles.

DSPT 2413: Environmental Engineering

This course introduces the cause, effect and method to control pollution from industries. The course covers three major categories of industrial pollution: water pollution, air pollution and industrial waste management. In the first part, the course includes the source and types of water pollutants, environmental regulations pertaining to waste water discharge, and techniques to treat waste water before discharging to the environment. The second part of the course covers the source and effect of air pollution, regulations requirement for air pollution control, technology to control air pollution emissions from industries. The third part covers the management of industrial waste that includes definition of scheduled waste, scheduled waste regulations, and technique to manage the waste.

DSPT 2523: Computer Engineering

This course formally introduces the concept of computers, algorithms, programming languages, pseudo code, and design of programs for solution to computational engineering problems. The programming and languages introduced in this course is MATLAB. Topic covered in this course include data types, constants, variables, arithmetic operations, assignment statement, looping, formatted I/O, functions, arrays, matrix operations, data structures, plotting, and model building

DSPT 2532: Plant Operation and Maintenance

This course exposes students to the operation of chemical plant from a practical standpoint. The topics include the materials used in the construction of a chemical plant, techniques of operations, equipment in chemical plant. The course also discusses about the storage and conveyance of solids, liquids, and gases from raw materials to finished products. The course discusses the measurement of variable quantities, and the maintenance of a chemical plant. The last chapters deal with the services and safety aspects of chemical operations.

DSPT 2542: Occupational Safety and Health

This course presents a basic knowledge of occupational safety and health (OSH) at work. In particular, it emphasises on current issues and best practices in OSH in Malaysia and the world, OSH legislations, methods of hazard identification, accident prevention concept and its implementation at workplace. At the end of this course, it is expected that the students will be able to appreciate the legal requirements, theoretical and practical aspect of OSH in industry and its impact to surrounding public community.

DSPT 2623: Analytical Chemistry

This course introduces quantitative chemical analysis, with emphasis on wet chemistry and instrumental methods. Topics in wet chemistry include introduction to analytical chemistry, sampling, sample preparation, data analysis, gravimetric analysis and volumetric analysis. The course also introduces the principles, instrumentation, and application of chromatographic and spectroscopic methods such as gas chromatography, HPLC, ultraviolet-visible spectroscopy, atomic absorption and atomic emission spectroscopy.

DSPT 2721: Fluid Mechanics Laboratory

This course presents the principles and methodology for chemical engineering programme. In particular, it is designed to understand the theory and application of measuring instruments and equipment, to discuss and evaluate experimental errors, to provide hands-on experience using laboratory instruments. Experiments involved are particularly of chemical engineering subjects which is fluid mechanics. Students also learn formal technical writing skills which are required for all written reports.

DSPT 2731: Chemical Reaction and Environmental Engineering Laboratory
This laboratory course contains experiments that cover the basic concept in chemical reaction engineering and pollution control such as kinetic analysis of reaction, ambient air and water quality analysis. All experiments require students to apply fundamental laboratory techniques and skills as well as communication skill. Students, in group will demonstrate a mastery of laboratory techniques and clearly describe the qualitative and quantitative aspects of the experiments performed.

DSPT 2731: Unit Operation Laboratory
This course introduces students to the equipment in the separation processes discussed in Separation Processes course. This will give a 'hands on' experience to the students on how to handle the unit operations and to interpret the data taken from the experiments. There are also various types of packing and plate in the column (absorption and distillation) that are being used in the laboratory. Comparison can be made on the efficiency of each packing/plate after all the packing/plate types have been used. This subject also demonstrates the basic principles of different types of unit operations involved in the chemical industries such as liquid-liquid extraction and heat exchanger. Students will be assessed through instructor's observation, peer evaluation and technical report submitted.

DSPT 2802: Final Year Project 1
This is the first part of a two part of Final Year Project that every student must fulfil successfully. Students are introduced to the methodologies of research and application development through a series of lectures. Students are guided through a step-by-step practice to complete the initial stages of proposal, planning and design of a project. Students must also meet regularly with supervisor(s) who will monitor their continuous progress. Students are required to prepare a report and present their initial work.

DSPT 2812: Final Year Project 2
This is the second part of a two part of Final Year Project that every student must fulfil successfully. Students are required to execute the next phases of their development plan from Part 1. Students are now required to code, integrate and make up the proposed project. Students will test the final fully-integrated project following the development and research testing practices. Students are required to prepare a full report and present their final work.

DSPT 3908: Industrial Training
This course requires the students to apply all technical and soft-skills knowledge that have been taught throughout the study years. The students will be exposed to the real working environment and practicing their communication skills in order to solve real problems.

DIPLOMA IN

SPORT AND FITNESS

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Sport and Fitness
2. Final Award	Diploma in Sport and Fitness
3. Awarding Institution	Universiti Teknologi Malaysia (UTM)
4. Teaching Institution	Universiti Teknologi Malaysia (UTM)
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DSPU
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full-time
11. Study Duration	Full time: Minimum : 5 semester (2 ½ Years) Maximum : 8 semester (4 Years) Part Time: Minimum : 7 semester (3.5 Years) Maximum : 18 semester (9 Years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	Part Time	Full Time	Part time
Normal	5	7	18	19
Short	1	1	8	9

| 12. Entry Requirement | **A) GENERAL UNIVERSITY REQUIREMENTS**
Obtain a pass in Sijil Pelajaran Malaysia (SPM) / Sijil Pelajaran Malaysia Vokasional (SPMV)/ equivalent qualification, inclusive of a credit (grade C) in Bahasa Melayu and a pass (grade E) in History.

B) SPECIFIC PROGRAMME REQUIREMENTS

1. **Graduate of the Sijil Pelajaran Malaysia (SPM) / Sijil Pelajaran Malaysia Vokasional (SPMV)**
  ● Meet the General Requirements of the University; as well as
  ● Special Program Requirements Get at least Grade C in THREE (3) in any subjects including Bahasa Melayu.
    AND
  ● Pass (Grade E) in History subject.

2. **Polytechnic Certificate Graduate**
  ● Meet the University's General Requirements: as well
  ● Special Program Requirements Obtained a Polytechnic Certificate/ Community College Certificate / equivalent qualification Certification related to the Diploma program applied for with at least a CGPA of 2.00;

3. **Graduated Malaysian Skills Certificate (SKM) Level 3 MQF / Community College Certificate (SKK) Level 3 MQF / equivalent qualification**
  ● Meet the General Requirements of the University; as well as
  ● Special Program Requirements Obtained a Malaysian Skills Certificate (SKM) / Community College Certificate (SKK) / Certificate recognized as equivalent to it in |

	Level 3 MQF and related to the Diploma program applied for with at least a CGPA of 2.00;
	4. Graduate of Equivalent Qualification (O Level) ● Meet the General Requirements of the University; as well as ● Special Program Requirements Have GCE O Level qualification with at least Grade C in THREE (3) in any subjects
	5. Graduate of Equivalent Qualification (APEL – A) ● Meet the General Requirements of the University; as well as ● Entry with APEL Level 4 (T4) which: i). Pass APEL A assessment for diploma MQA (Aptitude Test and Portfolio Assessment); ii). Candidate must be 20 years old and above in the year of application being made. iii). 5 years working experience in related field. *Additional requirements All candidates need to pass the interview and fitness test conducted by UTM.

13. Programme Educational Objectives:

Diploma in Sport and Fitness is designed to produce graduates who:

i.   Competent, creative, and innovative in applying sports science knowledge, practical skills, appropriate numerical techniques, and digital technology to solve problems in various sports and fitness environments.

ii. Communicate confidently and effectively while demonstrating leadership qualities in delivering information through various mediums to support career development and lifelong learning in the field of sport and fitness.

iii. Adhere to ethical values and actively contribute to the needs of organisations and the community through participation in various sport and fitness-related activities

14. Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies

Programme Learning Outcomes (PO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 **Knowledge and Understanding (KW)**	Integrate the knowledge in the field of sport and fitness and other related professions.	Lectures, Tutorials, Activity-based learning, Active and Cooperative Learning, Industrial Training	Quizzes, Tests, Assignments, Presentations, and Examinations, Logbook
PLO2 **Cognitive Skills (CG)**	Solved problems related to sports and fitness by applying the knowledge associated to field.	Lectures, Tutorials, Activity-based learning, Active and Cooperative Learning, Industrial Training	Quizzes, Tests, Assignments, Presentations, Examinations, Faculty Supervisor Assessment
PLO3 **Practical Skills (PS)**	Apply practical skills in the field of sports and fitness.	Lectures, Tutorials, Practical Classes, Active and Cooperative Learning, Activity-based learning, Industrial Training	Tests, Assignments, Practical, and Examinations, Faculty and Industry Supervisor Assessment

(b) Generic Skills

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO4 **Interpersonal Skills (IPS)**	Interact effectively and collaboratively in managing relationships in teams and within the organizations.	Active and Cooperative Learning, and Project-based learning.	Assignments, Presentations and Project Reports.
PLO5 **Communication Skills (CS)**	Communicate effectively in oral and written with various stakeholders and all levels of society.	Activity-based learning, Active and Cooperative Learning, Industrial Training	Assignments, and Presentations, Report on Industrial Training session / activities

PLO6 **Digital Skills (DS)**	Apply a range of digital applications to seek and process data related to profession or study.	Activity-based learning, Active and Cooperative Learning	Assignments, and Presentations.
PLO7 **Numeracy Skills (NS)**	Use a combination of numerical and graphical data in completing relevant tasks.	Activity-based learning, Active and Cooperative Learning	Assignment and Presentations.
PLO8 **Leadership, Autonomy & Responsibility (LAR)**	Demonstrate leadership qualities and be able to act as a responsible member of the group towards achieving common goals.	Activity-based learning, Active and Cooperative Learning, Industrial Training	Assignments, Presentations and Project Reports, Reflection Report on industrial training session/activities
PLO9 **Personal Skills (PRS)**	Identify self-improvement initiatives and possibilities for career development or further education.	Active and Cooperative Learning and Project-based learning	Assignments, Presentations and Project Reports.
PLO10 **Entrepreneurial Skills (ENT)**	Demonstrate the ability to identify new opportunities in dealing with issues related to sport and fitness with entrepreneurial mindset.	Active and Cooperative Learning and Project-based learning, Industrial Training	Assignments, Presentations and Project Reports, Report on industrial training session/activities
PLO11 **Ethics and Professionalism Skills (ETS)**	Demonstrate the ability to perform tasks and make decisions ethically, professionally and with integrity.	Active and Cooperative Learning, Project- based learning	Assignments
15. Total credit hours to graduate		**91 credit hours**	

16. Programme structures and features, curriculum and award requirements

The programme is offered in full-time mode and based on a 2.5 Semester Academic Year with several courses being delivered and assessed in each Semester. Assessment is based on coursework and final assessment.

Assessment (Refer to UTM's Academic Regulations):
Continuous Assessment (60%) and Final Assessment (40%)
Passing marks for all courses is 40%.
Skill acquisition: Industrial training

Award requirements:
● Students must achieve a total of **91** credit hours with a minimum CPA of 2.00

17. Programme Uniqueness

A diploma in sport and fitness uniquely combines practical experience with theoretical knowledge, equipping graduates with a comprehensive understanding of exercise physiology, nutrition, and injury prevention. This well-rounded approach prepares students for diverse career opportunities in the expanding fitness and sports industry, emphasizing health promotion and personal development. With hands-on training, specialization options, and networking opportunities, graduates are well-positioned to excel in roles ranging from personal trainers and sports coaches to wellness consultants and fitness managers.

The program's study period of two and half years makes it particularly competitive and appealing to SPM graduates. This shorter duration allows students to complete their diploma and enter the workforce or pursue further studies more quickly compared to traditional longer programs. The efficient timeline not only attracts ambitious students seeking to fast-track their education and career but also enhances the program's attractiveness and competitiveness in the higher education landscape.

18. Career Prospects

Diploma in Sport and Fitness holders can work as a fitness trainer / personal trainer, sports coach, sports instructor, athletic trainer, sports administrator, wellness coach, and fitness consultant.

19. UTM Diploma++ Programme

Students are given an opportunity to enroll in short courses offered by the university during studies or semester breaks such as Professional Certificates.

20. Facilities available

i.   Stadium and gymnasium
    ii.   Sports science laboratory
    iii. Classrooms and lecture halls
    iv. Outward Bound

21. Support for Students and Their Learning
Personal support: Academic Advisor Counseling Infrastructure support: Internet access e-learning Digital library Health care and Recreational Financial support: Perbadanan Tabung Pendidikan Tinggi Negara (PTPTN) Jabatan Perkhidmatan Awam (JPA) Yayasan Negeri Pusat Zakat Negeri Kementerian Belia dan Sukan Majlis Sukan Negeri

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
ULRS1182*/ UHLM1122*	Appreciation for Ethics and Civilisation/ Malay Language for Communication 1	2
UHLB 1032	Introductory Academic English	2
DSPU 1013	Human Anatomy and Physiology	3
DSPU 1113	Psychology for Sport and Fitness	3
DSPU 1203	Recreation and Outdoor Education	3
DSPD/S XXX3	Elective Comp & Math 1	3
	Total	**16**

Note:*Local students register for UHMS while International students register for ULRS.

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
DSPU 1103	Health, Fitness and Sport	3
DSPU 1023	Mechanics of Sport Movement	3
DSPU 1303	Motor Development & Skill Acquisition	3
DSPP/G XXX3	Elective Management 1	3
DSPU XXX3	Elective Sport & Fitness 1	3
	Total	**17**

YEAR 2 (SEMESTER 3)

Code	Course	Credit
ULRS 1012	Value and Identity	2
DSPU 2103	Coaching for Sport and Fitness	3
DSPU 2203	Sport and Fitness for Special Population	3
DSPU 2113	Basic Sport and Fitness Performance Analysis	3
DSPD/S XXX3	Elective Comp & Math 2	3
DSPU XXX3	Elective Sport & Fitness 2	3
	Total	**17**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
ULRF 2XX2	Service-Learning and Community Engagement Courses	2
DSPU 2213	Training Methodology in Sport and Fitness	3
DSPU 2123	Sport and Fitness Management	3
DSPU 2133	First Aid and Injuries in Sport and Fitness	3
DSPP/G XXX3	Elective Management 2	3
DSPU XXX3	Elective Sport & Fitness 3	3
	Total	**17**

YEAR 2 (SEMESTER 5) (SHORT SEMESTER)

Code	Course	Credit
DSPU 2206	Industrial Training	6
	Total	**6**

YEAR 3 (SEMESTER 6)

Code	Course	Credit
DSPU 3103	Ethics and Current Issues in Sport and Fitness	3
DSPU 3113	Sport and Fitness Measurement	3
DSPU 3123	Sport and Fitness Facilities Safety	3
DSPU 3133	Nutrition for Sport and Fitness	3
DSPU 3203	Sport and Fitness Prescription	3
DSPU XXX3	Elective Sport & Fitness 4	3
	Total	**18**

SYNOPSIS OF CORE COURSES

DIPLOMA IN SPORT AND FITNESS

DSPU 1013: Human Anatomy and Physiology

The aim of this course is to meet an increasing demand and need for health, fitness and sport practitioners to help improve the health and fitness levels of health-conscious individuals, gym members, and corporate clients. Students pursuing this course can expect to be industry ready and relevant through a rigorous program aimed at equipping them with practical knowledge on solid foundation in the principles of health, fitness and sport. At the end of the course, students are able to organize a program related to health, fitness or sport to community which aligned with industry needs.

DSPU 1023: Mechanics of Sport Movement

Introduce students to the fundamental elements in sport movement mechanics. This course will discuss basic kinematics and kinetics in sports events. Students also will be involved with practical skills using different tools to understand mechanics of human movement in sport. This course provides a broad overview of many important concepts, components, and tools that can be applied to understand sports mechanics.

DSPU 1103: Health, Fitness and Sport

The aim of this course is to meet an increasing demand and need for health, fitness and sport practitioners to help improve the health and fitness levels of health-conscious individuals, gym members, and corporate clients. Students pursuing this course can expect to be industry ready and relevant through a rigorous program aimed at equipping them with practical knowledge on solid foundation in the principles of health, fitness and sport. At the end of the course, students can organize a program related to health, fitness or sport to community which aligned with industry needs.

DSPU 1203: Recreation and Outdoor Education

The students enrolled in recreation and outdoor education will progress through an experiential-based program that emphasizes interpersonal relationships and individual growth. This course encourages students to develop greater self-confidence and, at the same time, acquire a sense of trust and commitment in their classmates. Recreation and outdoor education are designed to expose students to a variety of outdoor skills and bring to healthy lives and promote wellbeing. Outdoor pursuit activities may include camping, backpacking, survival skills, archery, orienteering, first aid and kayaking.

DSPU 1303: Motor Development and Skill Acquisition

This course is designed to provide the students with knowledge of motor skills development and important element of performer to control and integrate muscle to engage in a variety of motor skills and human movements. Students will analyse and predict sports readiness in children and youth. Students can conduct assessments on fundamental movement skills, physical fitness and sports specific skills. Students will explore the contribution of memory, individual differences, motor classification, practice and feedback may influence individual effort to solve a motor skill problem and achieve a task goal. At the end of the course, students can discuss related issues on early sport specialization vs diversification in youth athletes as well as examine the contribution factors of motor skill acquisitions.

DSPU 1113: Psychology of Spot and Fitness

The aim of this course is to enable students to address the mental and emotional needs of athletes. This enhances their overall well-being and boosts their sports performance to the highest level possible. Students will also be exposed to various aspects of sports psychology such as motivation, personality, aggressiveness, sports violence, leadership, group dynamics, anxiety, teamwork and so on. Throughout the course, students will be taught the psychological skills needed by the athlete and team.

DSPU 1313: Sport Massage

This course emphasizes the techniques of deep tissue and recovery massage. Participants will learn essential concepts such as Human Anatomy and Kinesiology to build a strong foundation which will aid them in massage. Participants will then learn how to conduct massage techniques such as effleurage, petrissage and tapotement. Participants will also learn the indications/contraindications and the appropriate application of these approaches for various conditions. Additionally, this course provides participants with an understanding of basic medical terminology and the relationship between anatomy/physiology and the practice of sports massage.

DSPU 1323: Racket Sports

This course is comprised of several racket sports such as tennis, badminton, table tennis and squash. The students will learn some basic techniques, tactics, and rules of the games. Besides, the students will conduct an event related to racket sports such as clinic, tournament and/or officiating course. By conducting the event, the students will gain hands-on experience about event management as well as develop their leadership and entrepreneur skills.

DSPU 1333: Striking, Fielding and Target Sports

This course utilizes striking, fielding and target sports as a framework to instilling tactical games model for learning and teaching sport concepts and skills. Students will analyze related games (softball, cricket, petanque, lawn bowl) concepts, skills, and tactics used. Students involved in planning, instructional, management, and assessment skills and continue to develop skills of the games and bring to healthy lives and promote well-being. At the end of the course, students can acquire game skills as well as implement the tactical game model while conducting the class activities.

DSPU 2103: Coaching for Sport and

Through this course, the students will learn about the fundamentals of sport coaching which encompass the roles of a coach, training principles, leadership, management and interpersonal skills in coaching. This course also will encourage the students to discover their coaching potential. The students will learn how to communicate and engage with specific groups of athletes and/or individuals with specific needs. Knowledge and experience gained from this course can be beneficial in coaching, and the health and fitness industry.

DSPU 2113: Basic Sport and Fitness Performance Analysis

This course is designed to integrate basic knowledge from the core areas of sport and fitness (anatomy and physiology, biomechanics and etc.) and apply it to analyzing sports performance. Students will learn extracting key information from quantitative information about human performance during sports and fitness events. Following that, students will provide reports in optimizing training, talent identification, or tracking performance in sport. A key component will be utilizing available technology to collect basic data, analyze the data and make sense of the data to the athletes and coaches.

DSPU 2123: Sports and Fitness Management

This subject will expose the student to management of sport and fitness industry. The student should be able to develop the skills required to manage sport organizations, coordinate sporting competitions and major events, and work in community-based sporting programs. Students are also required to learn how to manage the business side of sport, with specialized training in sport marketing and management, and analysis of the skills utilized by the sport manager. Students will be encouraged to review past trends that have shaped the sports system, gain an understanding of the status of agencies and organizations nationally and internationally, and to draw upon this information to explore future directions in the organization and governance of sport.

DSPU 2133: First Aid and Injuries in Sport and Fitness

This course will focus on the fundamental principle in the care and prevention of sports and fitness injuries. This includes the types, factors and assessments of sports and fitness injuries. The students also will be exposed to the practical aspects of basic first aid and treatment of sports and fitness injuries during laboratory activities. The course will encourage students' critical and creative thinking skills in addition to the existing practice in order deal with sports and fitness injuries situation in the future.

DSPU 2333: Team Sports

This course is designed to teach the students about different team sports while enhancing personal and social behaviors. The course is also designed to elicit opportunities to advance individual skills in different team sports. Through this course, the students are required to conduct several events that are related to team sports. This will give them the opportunity to gain skill proficiency, promote healthy living and well-being, and gain invaluable experience in conducting a program completely.

DSPU 2203: Sport and Fitness for Special Population

This course provides knowledge and skills to develop appropriate adapted physical activity, exercise or sports activity instruction plan and implement the plan to group/individual with disabilities/special needs. Students could explore information related to developing appropriate activities/exercise/adaptive sport that are suitable to the unique characteristics of a group/individual. Students will also have experience in conducting appropriate activities that have been planned. At the end of the course, students can conduct appropriate physical activities/exercise adaptive sports to group/individual with special needs/care.

DSPU 2213: Training Methodology in Sport and Fitness

In this course, the students will learn about the fundamentals of training plan according to the demands of sports. The students also will learn about coaching principles, coaching discipline, individual and team management, and other aspects including preparing a training plan for sports. In addition, the students will learn several approaches to monitor training programs and fitness progress. At the end of the course, the students would be able to critically explain their approaches and training plan for certain sports and for fitness development.

DSPU 2313: Rehabilitation in Sport and Fitness

This course examines the principles and practices of sports training and rehabilitation and the role that the sport and exercise scientist play in the injury prevention and rehabilitation process. Topics will complement the Level 1 Sports Trainer course, include factors contributing to sports injury, injury prevention techniques, including stretching; sports injuries and the associated management and treatment modalities; and designing programs to prevent and rehabilitate sports injuries.

DSPU 2206: Industrial Training

This course provides knowledge and skills to develop appropriate adapted physical activity, exercise or sports activity instruction plan and implement the plan to group/individual with disabilities/special needs. Students could explore information related to developing appropriate activities/exercise/adaptive sport that are suitable to the unique characteristics of a group/individual. Students will also have experience in conducting appropriate activities that have been planned. At the end of the course, students can conduct appropriate physical activities/exercise adaptive sports to group/individual with special needs/care.

DSPU 2303: Self Development in Sport and Fitness

This course introduces to develop knowledge and understanding of self-development in sports and fitness to develop a self-employment strategy within the context of the sport industry. Self-development in the sports industry is very common, whether it is directly in the sports industry in a role such as personal trainer, instructor or coach, or in the supporting industries in a role such as nutritionist or physiotherapist. There are a huge range of opportunities with rewarding challenges, such as working with clients on a part-time basis as part of a portfolio of jobs or in a full-time position. Students will investigate types of self-employments and the personal skills and behaviors required for self-development in sports and fitness. It does also consider client and customer needs and opportunities within the sports industry. Students will then use this knowledge to define a self-employment strategy and business plan. At the end of the course, student able to develop the skills to present and review their self-development strategy in the sports, fitness and outdoor activities industry.

DSPU 2323: Sport and Fitness Analytic and Technology

This course is designed to integrate contemporary methods of data collection around sport and athletic performance, with analytical techniques used to evaluate, visualize and present large data sets. While theoretical lectures form a significant part of the course, a large component will be project based where students will collect, analyze and present their own large data set. Students will be exposed to advanced technology and measurement methods as well as analytical software that has become the standard used by sporting organizations, clubs and teams.

DSPU 2343: Innovation and Creativity in Sport and Fitness

This subject focuses student on understanding how creative practices, processes and methods lead to innovation. Students create propositions in a collaborative environment, shape processes of discovery and exploration, generate solutions, develop visual literacy in dealing with complexity, and create frameworks for criticizing and judging propositions. Built on values such as students' research, analytical and creative practices are supported by their development of skills for effective communication of concepts and ideas.

DSPU 3103: Ethical and Current Issues in Sport and Fitness

The aim of this course is to enable students to gain and understanding values such as on-field relationships between athletes, coaches and officials, to the corporate responsibility of international sports organizations and businesses, ethical considerations permeate sport and fitness at every level. Students will also be exposed on a multitude of unique ethical, legal, and related professional challenges faced by sport, fitness, and performance psychology practitioners. Understanding how ethics impact professional sports and fitness is key to a successful career in sports and fitness industry.

DSPU 3203: Sports and Fitness Prescription

This subject explores the fundamental aspect of health before enduring physical activities and exercise, physical readiness and suitability of physical exercise either for specific sports or for fitness program. This subject outlines the elements of a prescription designed to stimulate robust adaptation within the major physiologic domains that can be modified by exercise: strength, cardiovascular endurance, flexibility, and balance, muscle strengthening exercise, resistance training, cardiovascular exercise and basic principles of aerobic exercise. The focus is also given to the specific plan of fitness-related activities that are designed for a specified purpose, which is often developed by a fitness or rehabilitation specialist industry for the client or patient. Exercise prescriptions also consider the patient's medical history, and a pre-examination of a patient's physical fitness to make sure a person has the capacity to perform the exercises for fitness purposes or to excel in chosen sports. The principles of training were also posted as fundamentals in prescribing the exercise and training for sports or fitness program which immersed with the industry need.

DSPU 3303: Technopreneurs in Sports and Fitness

This course focuses on the technology and entrepreneurial opportunities in the sports industry, including sports management, sports franchise, sports agency, and small sports business management professions and programs. The course also focuses on the business plan, financial, and planning issues associated with entrepreneurial and small business ventures. Students will develop their own entrepreneurial sports plan and facing operational issues involved in the management of sporting and recreational facilities and major events which includes planning and design; staffing; organizational structures; and programming and fiscal control as it applies to local, state and national standard sporting facilities and events. The element of technology is among the emphasis such as current technology used in the field of sports and understanding the technology and ability to blend the technology into sports business. Analyses on the insights and 'know-how' of selected well-known entrepreneurs within the sport industry who have taken goods and services from concept to market and beyond are also included.

DSPU3113: Sport and Fitness Measurement

The aim of this course is to enable students to gain an understanding of fitness testing and the importance of health screening and health monitoring tests. Students will explore the different tests available of laboratory and field-based fitness tests. Students will also be introduced to the practice of health screening and how to carry out health monitoring tests. Students will develop skills to be able to administer fitness tests in a safe and effective manner, interpreting results against recommended values, providing feedback to an individual regarding how fitness levels can be improved.

DSPU 3123: Sport and Fitness Facilities Safety

This course introduces the application of Sport and Fitness Facilities Safety. Effective sports and fitness facilities are required in the sports industry to ensure smooth running and effective management. This in turn leads to high performance levels and customer satisfaction, resulting in better experiences for participants. Thus, this study involves knowledge of basic in sport and fitness facility safety. The course provides a broad overview of many important concepts, components, factors that inform the strategic management at a range of different sport and fitness facilities and be able to demonstrate skills in sport and fitness facility scenarios. Several practical and laboratory exercises will provide hands-on experience during the semester.

DSPU 3133: Nutrition for Sport and Fitness

Through this course, the students will learn about the importance of a balanced diet and some basic nutritional approaches for athletes and those with special needs. Considering that nutrition is part of life, knowledge about nutrition can be applied in daily life routine. Students will learn the basic methods for daily calorie monitoring, both manually and via available nutrition apps. Knowledge from this course can be beneficial in the health and fitness industry.

DSPU 3313: Sport Tourism

Sports tourism is BIG business and involves sporting activity, that much is obvious, but there is much more than a game of sport involved in the financial aspect globally. In this courses, definition, development, strategy and challenges related to sports tourism will be discussed thoroughly. Explanation of tourism, types of sports tourism and the advantages and disadvantages will also be discussed. Focus of discussion are related to sports tourism that involves large sporting events, such as the football World Cup or the Olympic Games and local potential sports to become tourism attraction.

DSPU 3323: Gymnastics and Creative Movement

This course aims to enhance students' knowledge of various movements in gymnastics and rhythmic gymnastics and apply learned movement and skills in related gymnastics routine and disciplines. Students will train to acquire highly coordinated movement that requires the ability to manipulate all the components of fitness and motor skills, physical strength, elasticity / flexibility, kinesthetic and space awareness. In addition, students require to focus on safety (self and friends) when performing the routine. Students will also learn and practice new skills through peer instruction and creatively plan gymnastics routine/formation.

DIPLOMA IN

TECHNOLOGY MANAGEMENT

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Technology Management
2. Final Award	Diploma in Technology Management
3. Awarding Institution	Universiti Teknologi Malaysia (UTM)
4. Teaching Institution	Universiti Teknologi Malaysia (UTM)
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DSPG
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full Time & Part Time
11. Study Duration	Full time: Minimum : 4 semester (2 Years) Maximum : 9 semester (4 ½ Years) Part Time: Minimum : 8 semester (4 Years) Maximum : 18 semester (9 Years)

Type of Semester	No. of Semesters		No. of Weeks per Semester	
	Full Time	Part Time	Full Time	Part time
Normal	4	8	18	19
Short	2	4	8	9

12. Entry Requirement	**A) GENERAL UNIVERSITY REQUIREMENTS**
	1. **Sijil Pelajaran Malaysia (SPM) / Matriculation / Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) / Sijil Politeknik / Sijil Kemahiran Malaysia (SKM) / Sijil Kolej Komuniti (SKK) / Equivalent Qualifications (MQF Level 3)**
	Possess a Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits including Bahasa Melayu and a pass in History in the SPM examination.
	2. **Equivalent Qualification – Sijil Vokasional Malaysia (SVM)**
	Possess a Sijil Vokasional Malaysia (SVM) with at least a credit in Bahasa Melayu (Code 1104).
	3. **Equivalent Qualification - O Level**
	Possess a Sijil Pelajaran Malaysia (SPM) with at least a credit in Bahasa Melayu / Bahasa Melayu Kertas Julai.
	4. **Equivalent Qualification Graduates - APEL-A**
	Pass the APEL-A MQA assessment.
	B) SPECIFIC PROGRAMME REQUIREMENTS

	1. **Sijil Pelajaran Malaysia (SPM) / Matriculation**
	     ● **Fulfil the General University Requirements; and**
	     ● **Specific Program Requirements**

	Obtain at least a **GRADE C** in **TWO (2)** subjects that are not yet counted for a credit AND Pass in English at the SPM level.

	2. **Sijil Tinggi Pelajaran Malaysia (STPM)**
	     ● **Fulfil the General University Requirements; and**
	     ● **Specific Program Requirements**

Possess a Sijil Tinggi Pelajaran Malaysia (STPM) with at least a **Grade C (GP 2.0)** in **TWO (2)** subjects.

3. **Sijil Tinggi Agama Malaysia (STAM)**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

   Possess a Sijil Tinggi Agama Malaysia (STAM) with at least a *Maqbul* **GRADE**.

   .

4. **Sijil Politeknik**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

   Possess a Sijil Politeknik at MQF Level 3 related to the applied Diploma program with at least a **CGPA of 2.00**.

5. **Sijil Kemahiran Malaysia (SKM) / Sijil Kemahiran Komuniti (SKK) / Equivalent Qualification (MQF Level 3)**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

   Possess a Sijil Kemahiran Malaysia (SKM) / Sijil Kolej Komuniti (SKK) at MQF Level 3 related to the applied Diploma programme with at least a **CGPA** of **2.00**.

6. **Equivalent Qualification – Sijil Vokasional Malaysia (SVM)**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

   Possess a Sijil Vokasional Malaysia (SVM) in a field relevant to the applied Diploma programme;
   AND
   - Achieve an Academic CGPA ≥ 3.33;
   AND
   - Achieve a Vocational CGPA ≥ 3.67;
   AND
   ▪ Pass in English

	7. Equivalent Qualification - O Level ● **Fulfil the General University Requirements; and** ● **Specific Program Requirements** Possess a GCE O Level qualification with at least **Grade C** in any **TWO (2)** subjects. **8. Equivalent Qualification - APEL–A** ● **Fulfil the General University Requirements; and** ● **Specific Program Requirements** Pass the APEL-A MQA assessment by fulfilling the requirements of the applied programme field. **C) INTERNATIONAL STUDENTS** **1. General Requirement** Admission requirements for international students by country are based on MQA regulations. **2. Specific Program Requirement** Minimum qualification with **THREE (3)** credits (Grade C) in any subject. **3. English Competency Requirement** Must obtain: - ● A band score of 5.0 and above in IELTS; OR ● A score of 40 and above in TOEFL or equivalent.

13. Programme Educational Objectives (PEO)

The Diploma in Technology Management programme is designed to produce graduates who:

i. Competent, creative, and innovative in applying knowledge of technology management, practical skills, numeracy skills, and appropriate digital technologies to solve problems in various technology management environments.

ii. Communicate effectively with confidence and demonstrate leadership in interactions with internal and selected stakeholders, while continuously striving to enhance employability through lifelong learning.

iii. Uphold ethical values and integrity, and demonstrate a positive attitude and entrepreneurial mindset in contributing to organisations, society, and self-development in a technology management career.

14. Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
(a) Technical Knowledge and Competencies			
PLO1 **Knowledge and Understanding (KW)**	Demonstrate knowledge of theories and principles of Technology Management for solutions in business environment of an organization.	Lectures, tutorials, directed reading, internet searching, and active and cooperative learning.	Quizzes, tests, assignments, presentations, examinations, and industrial training.
PLO2 **Cognitive Skills (CG)**	Analyze, identify, and formulate methods of problem solving in addressing Technology Management issues.	Lectures, tutorials, computer practical classes, cooperative learning, and group projects.	Tests, assignments, presentations, examinations, and industrial training.
PLO3 **Practical Skills (PS)**	Conduct project and apply Technology Management or other related skills.	Project-based learning, active and cooperative learning, case studies, and problem-based learning.	Tests, assignments, presentations, examinations, and industrial training.

(b) Generic Skills

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO4 **Interpersonal Skills (IPS)**	Interact effectively and collaboratively in managing relationships within teams and organizations.	Individual assignments and group projects.	Project/assignment reports and presentations.
PLO5 **Communication Skills (CS)**	Communicate effectively and confidently through written, visual, and oral presentations to different audiences.	Individual assignments and group projects.	Project/assignment reports and presentations.
PLO6 **Digital Skills** **(DS)**	Apply a range of digital applications as well as to seek and process data related to work and studies.	Individual and group projects, directed reading, cooperative learning and discussion.	Individual / group project and assignment reports, academic talk, industrial visits
PLO7 **Numeracy Skills** **(NS)**	Use and interpret routine and numerical and graphical/visual data in technology management.	Group projects, active and cooperative learning.	Project /assignment reports.

PLO8 **Leadership, Autonomy &** **Responsibility** **(LAR)**	Demonstrate leadership qualities and assume the role of a responsible member of a group toward achieving common goal.	Individual assignments, mini/group projects, and laboratory work.	Project/assignment reports, industrial training.
PLO9 **Personal Skills** **(PRS)**	Identify self-improvement initiatives and possibilities for career development or further education.	Community service, industrial and student visits, academic talks, cooperative learning, and project assignments.	Project/assignment reports, industrial training
PLO10 **Entrepreneurial Skills** **(ENT)**	Demonstrate the ability to identify new opportunities with an entrepreneurial mindset in dealing with issues related to Technology Management field.	Group projects, directed reading, internet searching, lectures, and active and cooperative learning.	Project/assignment reports.
PLO11 **Ethics and Professional** **Skills (ETS)**	Demonstrate the ability to perform tasks and make decisions ethically, professionally, and with integrity.	Individual assignments, group/mini projects, cooperative learning, and discussion, and industrial training.	Project/assignment reports.

15. Total credit hours to graduate	**90 credit hours**

16. Programme structures and features, curriculum, and award requirements

The Diploma in Technology Management programme is offered in both full-time and part-time modes and follows a 2-semester academic year, with several courses being delivered and assessed in each semester. Assessment is based on coursework, final assessment and/or examination, and industrial training.

Assessment (Refer to UTM's Academic Regulations):
Continuous Assessment (60%) and Final Assessment (40%).
Passing marks for all courses is 40%.
Skill acquisition: Industrial Training

Award requirements:
● Students must achieve a total of **90** credit hours with a minimum **CPA** of **2.00**

17. Programme Uniqueness

The Diploma in Technology Management programme blends theories and practice which covers the major area of technology management, marketing, commercialization, research development and innovation. The systematic development of innovative thinking and creative problem-solving skills is emphasized in the programme. Students will be trained not only in the specified areas, but also in self-discipline, communication skills and entrepreneurship. Students will gain valuable industry exposure and keep abreast with industry practices via industrial training.

18. Career Prospects

Graduates of the Diploma in Technology Management can work as an assistant administrative, line supervisor and assistant executive (administration and operation). The candidates may also continue to further their study in various disciplines such as Bachelor of Management, Bachelor of Management (Technology), Bachelor of Business Administration (Human Resources, Marketing and Operation Management), Bachelor of Economics, Bachelor of Information Technology and Education (Management) at local or foreign universities.

19. UTM Diploma++ Programme

Students are given the opportunity to enrol in short courses offered by the university that are relevant to the technology management field during their studies.

20. Facilities available

   i.   Computer Laboratory
   ii.   Language laboratory

21. Support for Students and Their Learning

Personal support
Academic Advisor
Counseling

Infrastructure support
Internet access
e-learning Digital
library
Health care and Recreational

Financial support
Perbadanan Tabung Pendidikan Tinggi Negara (PTPTN) Jabatan
Perkhidmatan Awam (JPA)
Yayasan Negeri Pusat Zakat Negeri

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Course Code	Course Name	Credit
ULRS 1182*/ UHLM 1122*	Appreciation For Ethics and Civilisation / Malay Language for Communication 1	2
UHLB 1032	Introductory Academic English	2
DSPG 1113	Principles of Management	3
DSPG 1123	Technology Management	3
DSPG 1313	Introduction to Intellectual Property	3
DSPG 1413	Principles of Microeconomics	3
DSPG 1513	Principles of Marketing	3
	Total	**19**

Note:*Local students register for UHMS while International students register for ULRS.

YEAR 1 (SEMESTER 2)

Course Code	Course Name	Credit
UHLB 1042	Intermediate Academic English	2
DSPG 1133	Organizational Behavior	3
DSPD 1013	Information Technology in Business	3
DSPG 1423	Principles of Macroeconomics	3
DSPG 1143	Quality Management	3
DSPG 1613	Introduction to Operations Management	3
DSPP 1013	Business Accounting	3
	Total	**20**

YEAR 1 (SEMESTER 3)

Course Code	Course Name	Credit
ULRS 1032	Integrity and Anti-Corruption Courses	2
DSPS 1213	Business Mathematics	3
DSPG 1153	Business Communication	3
	Total	**8**

YEAR 2 (SEMESTER 4)

Course Code	Course Name	Credit
ULRF 2XX2	Service Learning and Community Engagement Courses	2
DSPP 2223	Financial Management	3
DSPG 2523	Marketing for Innovative Product	3
DSPG 2323	Commercial Law	3
DSPS 2223	Business Statistics	3
DSPG 2633	Supply Chain Management	3
DSPG 2623	International Business and Globalization	3
	Total	**20**

YEAR 2 (SEMESTER 5)

Course Code	Course Name	Credit
DSPG 2233	Business Analytics	3
DSPG 2163	Human Resource Management	3
DSPG 2533	Innovation Management	3
DSPG 2713	Technology Entrepreneurship	3
DSPG 2723	Technology Commercialization	3
DSPG 2733	Technology Financing	3
	Total	**18**

YEAR 2 (SEMESTER 6)

Course Code	Course Name	Credit
DSPG 2905	Industrial Training	5
	Total	**5**
	Total Credits	**90**

PRE-REQUISITE COURSES

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6
DSPG 1413 →	DSPG 1423	DSPS 1213	DSPG 2623	DSPG 2233	
DSPG 1113	DSPG 1133	DSPG 1153	DSPG 2523	DSPG 2163	
DSPG 1123	DSPG 1143		DSPG 2323	DSPG 2533	
DSPG 1313	DSPG 1613		DSPG 2633	DSPG 2713	DSPG 2905*
DSPG 1513	DSPP 1013		DSPS 2223	DSPG 2723	
	DSPD 1013		DSPP 2223	DSPG 2733	

*Note: Students must pass all courses before undergoing the DSPG2905 Industrial Training.

SYNOPSIS OF CORE COURSES

DIPLOMA IN TECHNOLOGY MANAGEMENT

DSPG 1113: Principles of Management
This course is designed to expose students to the management functions in an organization. It introduces students to the concepts relating to management, particularly, planning, organizing, leading, and control. Included are topics such as managerial competencies, trends that affect the management of organizations, human resource management, motivation, and innovation. At the end of the course, students should be able to highlight the importance of communication with managers, and the elements required for an effective presentation.

DSPG 1123: Technology Management
This course is designed to introduce students to the basic theories of technology usage in business. It covers the basic concepts of developing, acquiring, and exploiting new and existing technologies. Apply some concepts and tools often used by organization in analyzing technology, innovation and related strategies.

DSPG 1133: Organizational Behavior
This course is designed to expose students to the concepts and theories in organizational behavior for them to understand human behavior at the workplace. First, students will be introduced to the roles played by individuals in the organization, theories of personality, learning and motivation. Next, they will have the opportunity to understand group dynamics, conflict management, communication, and the importance of innovation. Finally, they will learn about inter-group relations from topics such as power, influence, politics, and leadership.

DSPG 1143: Quality Management
This course discusses on the concept and methodology of Quality Management. The course outline the principles of quality management as well as quality tools and techniques used for quality control and quality improvement. Topics covered include quality culture, ethics, corporate social responsibility, quality principles such as customer focus, leadership, teamwork, quality education and training, partnering as well as statistical quality control tools and techniques. The course is designed to facilitate students acquiring knowledge and understanding on principles of quality management and methodology for quality control and improvement. This course embraces authenticity of generic skills (team work) when engaging in the process of completing the task given.

DSPG 1153: Business Communication
This course introduces students to the knowledge and skills required to become a competent communicator. The focus will be given to the basic theory and principles of effective communication and its application in today's business environment. Students will be exposed to different forms of communication that exist between individuals, groups and organizations. They will also learn how to use verbal and non-verbal communication effectively in various business situations such as in meetings, interviews and presentations.

DSPS 1213: Business Mathematics
This course introduces fundamental mathematical concepts, techniques and their applications in business, economics, finance, and accounting. It aims to enhance students' mathematical proficiency in managing personal financial activities and business operations. Topics covered include coordinate geometry, elementary functions and graphs, equations, ratio, percentage and basic calculus concepts. Additionally, students will explore various methods for calculating interest, annuities, installment purchases, mark-up, and mark-down. The course is delivered through interactive lectures, structured tutorials, and guided problem-solving activities, with emphasis on real-world applications. At the end of the course, students should be able to apply these mathematical concepts effectively in both personal financial decisions and business activities, where proper decision-making is essential.

DSPG 1313: Introduction to Intellectual Property
The course is designed to generally introduce students to the broad concept of Intellectual Property (IP) which form the foundation for protecting IP and utilizing the rights secured by the invention. Student shall be exposed to the laws in relation to copyright, trademarks, patents, industrial designs, and trade secret. This course embraces generic skills comprising of communication and thinking skills when engaging in the process of completing tasks given.

DSPG 1413: Principles of Microeconomics
This course is designed to expose students to basic concepts of economics that consist of both theories and concepts in microeconomics. It will emphasize the basic human problems as well as basic economic problem. It will discuss on the theory of demand, theory of demand, elasticity of demand and supply, market equilibrium. In addition, the course outlines theory of consumer behavior, theory of production and cost of production, market structures. At the end of the course, students should be able to differentiate the pricing strategies of perfect competition, monopoly market, monopolistic market and oligopoly market.

DSPG 1423: Principles of Macroeconomics
(Pre–requisite: DSPG 1413)
This course is designed to expose students to the basic economics level that consist of concepts and theories in macroeconomics. These concepts involve national income accounting, uses and limitations of national income statistics, consumption theory, investment theory, the determination of national income equilibrium, money and banking, monetary policy, fiscal policy, national budget and debt, inflation, unemployment, international trade, balance of payment and exchange rate. At the end of the course, students should be able to apply the concepts in addressing basic macroeconomics issues.

DSPG 1513: Principles of Marketing
This is an introductory course in marketing. The definition of marketing, key marketing concepts, the marketing process, and factors that influence marketing strategies will be explained. Students need to understand major environmental forces that affect marketing and elements of the marketing mix. Students will compare the buying behaviors of final consumers and business customers. They will also look at issues related to international marketing such as the global marketing environment as well as product and promotion strategies.

DSPG 1613: Introduction to Operations Management
This course is designed to expose the students to the operations function to other functions of the firm. It will focus on the operations of management organization, principles of efficient location, layout and materials handling design in the workplace, method study and work measurement principles to business, design effective planning, scheduling and control systems for various types of manufacturing and service-oriented business and technology used in industry. Students are required to make a visit to a firm or factory as their group project and provide a report upon the visit.

DSPD 1013: Information Technology in Business
This course illustrates the use of information technology (IT) in organizations for conducting business and solving problems. Students will learn how to leverage IT to excel in future roles and contribute to organizational success. The emphasis is on applying IT concepts to streamline business processes, rather than merely understanding them. Additionally, the course covers information systems (IS) principles, demonstrating their critical role in modern organizations. By the end of the course, students will be able to recognize the roles of IT/IS in contemporary organizations, understand how IT can be a strategic asset, and see how IT supports business processes and functions.

DSPP 1013: Business Accounting
This course is designed to introduce accounting concepts to students such as accounting equation, double entry system, ledger and journals, types of assets, liabilities and capital. At the end of the course, students should be able to demonstrate and apply knowledge by preparing all common accounts in business, trading and profit and loss report, income statement and statement of financial position. At the end of the course, students should be able to prepare financial statements and perform internal control and check – bank reconciliation and inventory valuation.

DSPG 2163: Human Resource Management
This course introduces students to strategies for managing people in the workplace, via the theory and practice of human resource management (HRM). The course provides an overview of the key functions undertaken by managers with responsibility for effectively utilizing and retaining an organization's human resources. Functions such as recruitment and selection, training and development, performance management and compensation are examined. At the end of the course, students will be able to demonstrate and apply the knowledge in this area by preparing a report on relevant topics and suggest solutions regarding the HRM practices in various organizations.

DSPG 2233: Business Analytics
In this course, student will use quantitative analysis abilities in business environments with the aid of this quantitative methods course. Student will be able to evaluate management circumstances. The focus of the course is on improving judgement when examining management difficulties. The course should help student create, evaluate, and solve managerial challenges whether student are learning the content for the first time or utilizing QM to brush up on student quantitative abilities.

DSPG 2323: Commercial Law
This course is designed to expose students to the business laws that are available in Malaysia. As a basis, it shall briefly focus on the definition of law, roles and functions and types of laws. It shall focus too on the process of law making by the legislative bodies in Malaysia, its procedures, the roles of the Malay Rulers before a law could be implemented. The second part of this course will concentrate on contract law, the elements of contract, terms of contract, types of contract, discharge of contract, legal remedies for breach of contract, Islamic contractual transaction. The course the will introduce to students several types of commercial transactions laws that are available namely the insurance law, sale of goods law, hire purchase law. Characters, requirements of each commercial law transactions above would be discussed to enable students to understand its significance and differences.

DSPG 2523: Marketing for Innovative Product
This course is designed to expose students with product innovation and the management of new product development from a strategic perspective. Students will gain an appreciation for the importance of product innovation especially for companies wanting to regain and retain competitive advantage within their industry. The course It will discuss on the planning, development and implementation of new products within the context of a competitive and dynamic marketing environment, the fast pace of technology development, the convergence of industries and the increasing sophistication of the consumer.

DSPG 2533: Innovation Management

This course aims to extend the understanding of critical issues and conceptual frameworks involved in the management of innovation and activities. It provides the skills of innovation management, research & development (R&D), and new product development (NPD) activities at operational level. This course also requires industrial visit to enhance knowledge in new R&D and NPD technology uses in the industry to be implement in student's group project.

DSPG 2623: International Business and Globalization

The course aims to develop an understanding of the underlying concepts of international business strategy which are about how firms build and sustain competitive advantage in their quest for global presence and domination. It is
designed to understand globalization and its impact on the firm. The course further aims to develop an ability to critically analyze ethical issues in international business. At the end of the course, students will be able to differentiate a successful global strategy applied and international business challenges that managers face in the domestic and global business environment.

DSPG 2633: Supply Chain Management

This course is designed to introduce the understanding and concepts of supply chain management. The course include the knowledge on the network analysis, chain management and organizational network. This course also discusses
topics related to transport logistic planning and procurement. In addition, students learn how to sustain supply chain competitive advantage through process integration and performance measurement. At the end of the course, students will be able to identify the issues, challenges and the various supply chain management in the organizations' business processes and functions.

DSPG 2713: Technology Entrepreneurship

This course introduces students the basic concepts of technology entrepreneurship as well as the process of creating new technology-based ventures. Specifically, the coverage includes opportunity recognition process, legal forms of businesses, options in setting up technology-based ventures, planning and arranging for resources to set up new ventures and financing options for new ventures. At the end of this course, student will be able to develop business plan.

DSPG 2723: Technology Commercialization

This course provides an overview on the organizational contexts, strategies, and outcomes of technology commercialization. It focuses on how the commercialization of technology involves the transformation and transfer of fundamental knowledge into commercial application. Students will have a sound understanding of the processes, benefits, and outcomes of commercializing innovations in a commercial environment. Students will be able to assess the intellectual property issues and other risks and prepare a business case.

DSPG 2733: Technology Financing

This course discusses the methods used to evaluate structure and finance new business venture and revenue generating business. It covers the finance of technological innovation and valuation tools used in the evaluation of technology venture.

DSPP 2223: Financial Management

This course serves as an introduction to financial management that focuses on both the understanding of basic principles and the application of financial techniques as a tool in decision making. The topic introduces the financial environment and the role of finance in business, the time value of money, the relationship between risk and return and its application in investment appraisal and capital budgeting. At the end of this course, students should be able to apply the theory and practice of investment and making financial decisions.

DSPS 2223: **Business Statistics**
This course is designed to expose students to the basic knowledge of statistics in the field of business. It consists of two main parts: descriptive statistics, which focuses on handling and summarizing data, and inferential statistics, where conclusions are drawn from sample data using tests such as hypothesis testing, analysis of variance, chi-square, correlation and regression. Basic probability, probability distribution, and sampling distributions serve as the foundation for inferential statistics. The course is delivered through a combination of lectures and practical sessions, emphasizing problem-solving and real-world application of statistical tools. At the end of the course, students should be able to solve problems related to business statistics.

DSPG 2905: Industrial Training
This course consists of practical training at industries such as firms, companies, government offices or any relevant organization where the students will be under the supervision of their industry supervisor. The objective is to strengthen the understanding of the theoretical principles and technical skills through practical experience. Students should be able to function effectively in a team, seek information, and acquire knowledge, present information, and express ideas clearly, effectively, and confidently. Students also have to explain in detail their daily task in the logbook. The logbook will cover tasks undertaken and experiences gained by the students during their period of training. Student performance will be assessed by the industry supervisor and a visiting UTM supervisor. At the end of this course, students are expected to develop skills for leadership, problem solving skills and cooperate as team members, be highly motivated, disciplined, and ethical.

DIPLOMA IN

ACCOUNTING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Accounting
2. Final Award	Diploma in Accounting
3. Awarding Institution	Universiti Teknologi Malaysia (UTM)
4. Teaching Institution	Universiti Teknologi Malaysia (UTM)
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DSPP
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full Time & Part Time
11. Study Duration	Full time: Minimum : 4 semester (2 Years) Maximum : 9 semester (4 ½ Years) Part Time: Minimum : 8 semester (4 Years) Maximum : 18 semester (9 Years)

Type of Semester	No. of Semesters		No. of Weeks per Semester	
	Full Time	Part Time	Full Time	Part time
Normal	4	8	18	19
Short	2	4	8	9

12. Entry Requirement	A) GENERAL UNIVERSITY REQUIREMENTS
	1. Sijil Pelajaran Malaysia (SPM) / Matriculation / Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) / Sijil Politeknik / Sijil Kemahiran Malaysia (SKM) / Sijil Kolej Komuniti (SKK) / Equivalent Qualifications (MQF Level 3) Possess a Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits including Bahasa Melayu and a pass in History in the SPM examination. **2. Equivalent Qualification – Sijil Vokasional Malaysia (SVM)** Possess a Sijil Vokasional Malaysia (SVM) with at least a credit in Bahasa Melayu (Code 1104). **3. Equivalent Qualification - O Level** Possess a Sijil Pelajaran Malaysia (SPM) with at least a credit in Bahasa Melayu / Bahasa Melayu Kertas Julai. **4. Equivalent Qualification Graduates - APEL-A** Pass the APEL-A MQA assessment. B) **SPECIFIC PROGRAMME REQUIREMENTS** **1. Sijil Pelajaran Malaysia (SPM) / Matriculation** ● **Fulfil the General University Requirements; and** ● **Specific Program Requirements** Obtain at least a **Grade C** in **TWO (2)** of the following subjects: ▪ Mathematics at the SPM level ▪ ONE (1) other subject

AND

Pass in English at the SPM level.

2. **Sijil Tinggi Pelajaran Malaysia (STPM)**
   - ● **Fulfil the General University Requirements; and**
   - ● **Specific Program Requirements**

   Possess a Sijil Tinggi Pelajaran Malaysia (STPM) with at least a **Grade C (GP 2.0)** in any subject;
   AND
   ▪ Obtain at least a **Grade C** in Mathematics at the SPM level
   AND
   ▪ Pass in English at the SPM level

3. **Sijil Tinggi Agama Malaysia (STAM)**
   - ● **Fulfil the General University Requirements; and**
   - ● **Specific Program Requirements**

   Possess a Sijil Tinggi Agama Malaysia (STAM) with at least a *Maqbul* **GRADE**.
   AND
   ▪ Obtain at least a **Grade C** in Mathematics at the SPM level
   AND
   ▪ Pass in English at the SPM level

   .

4. **Sijil Politeknik**
   - ● **Fulfil the General University Requirements; and**
   - ● **Specific Program Requirements**

   Possess a Sijil Politeknik at MQF Level 3 related to the applied Diploma program with at least a **CGPA of 2.00**.
   AND
   ▪ Obtain at least a **Grade C** in Mathematics at the SPM level

AND

▪ Pass in English at the SPM level

5. **Sijil Kemahiran Malaysia (SKM) / Sijil Kemahiran Komuniti (SKK) / Equivalent Qualification (MQF Level 3)**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

   Possess a Sijil Kemahiran Malaysia (SKM) / Sijil Kolej Komuniti (SKK) at MQF Level 3 related to the applied Diploma programme with at least a **CGPA** of **2.00**.
   AND
   ▪ Obtain at least a **Grade C** in Mathematics at the SPM level
   AND
   ▪ Pass in English at the SPM level

6. **Equivalent Qualification – Sijil Vokasional Malaysia (SVM)**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

   Possess a Sijil Vokasional Malaysia (SVM) in a field relevant to the applied Diploma programme and obtain at least a **Grade C** in Mathematics;
   AND
   - Achieve an Academic CGPA ≥ 3.33;
   AND
   - Achieve a Vocational CGPA ≥ 3.67;
   AND
   - Pass in English at the SPM level

7. **Equivalent Qualification - O Level**
   - **Fulfil the General University Requirements; and**

● **Specific Program Requirements**

Possess a GCE O Level qualification with at least **Grade C** in TWO (2) of the following subjects:
▪ Mathematics
▪ ONE (1) from other subjects.

8. **Equivalent Qualification - APEL–A**
   ● **Fulfil the General University Requirements; and**
   ● **Specific Program Requirements**

   Pass the APEL-A MQA assessment by fulfilling the requirements of the applied programme field.

C) INTERNATIONAL STUDENTS

1. **General Requirement**
   Admission requirements for international students by country are based on MQA regulations.

2. **Specific Program Requirement**
   Minimum qualification with **THREE (3)** credits (Grade C) includes a credit in Mathematics and TWO (2) other subjects.

3. **English Competency Requirement**
   Must obtain: -
   ● A band score of 5.5 and above in IELTS; **OR**
   ● A score of 46 and above in TOEFL or equivalent.

13. Programme Educational Objectives (PEO)

The Diploma in Accounting programme is designed to produce graduates who:

i.   Competent, creative and innovative in applying accounting knowledge, practical skills, appropriate numerical techniques, and digital technologies to solve problems in various accounting settings.

ii. Communicate effectively with self-confidence and demonstrate leadership in engaging with internal and selected external stakeholders while continuously enhancing employability through lifelong learning.

iii. Uphold ethical values and integrity, and demonstrate positive and entrepreneurial attitudes in contributing to the organization, society, and personal development in the accounting profession.

14. Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 Knowledge and Understanding (KW)	Incorporate knowledge of accounting, finance, and business management, theoretical and principles, in assisting management to make economic decisions.	Lectures, Tutorials, Activity-based learning, Active and Cooperative Learning	Quizzes, Tests, Assignments, Presentations, and Examinations
PLO2 Cognitive Skills (CG)	Apply knowledge of accounting, finance, and business management creatively and innovatively in planning, problem-solving, and decision-making.	Lectures, Tutorials, and Active and Cooperative Learning.	Quizzes, Tests, Assignments, Presentations, Examinations, and
PLO3 Practical Skills (PS)	Apply computational techniques, resources, and IT tools in solving accounting, finance, and business management problems.	Lectures, Tutorials, Computer Practical Classes, Active and Cooperative Learning Activity-based learning,	Quizzes, Tests, Assignments, Computer Practical, and Examinations.

(b) Generic Skills			
Programme Learning Outcomes (PLO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO4 Interpersonal Skills (IPS)	Interact effectively and collaboratively in managing relationships in teams and within the organizations.	Active and Cooperative Learning, and Project-based learning.	Assignments, Presentations and Project Reports.
PLO5 Communication Skills (CS)	Communicate effectively oral or written with various stakeholders and all levels of society.	Cooperative Learning and Discussions.	Assignments, and Presentations.
PLO6 Digital Skills (DS)	Apply a range of digital applications as well as to seek and process data related to work and studies.	Cooperative Learning and Discussions.	Assignments, and Presentations
PLO7 Numeracy Skills (NS)	Use and interpret routine and complex numerical and graphical/visual data in accounting, finance, and business management.	Active and Cooperative Learning.	Assignment Reports and Presentations.
PLO8 Leadership, Autonomy & Responsibility (LAR)	Demonstrate leadership qualities and be able to act as a responsible member of the group towards achieving a common goal.	Active and Cooperative Learning.	Assignment Reports and Presentations.
PLO9 Personal Skills (PRS)	Identify self-improvement initiatives and possibilities for career development or further education.	Active and Cooperative Learning and Project-based learning	Assignments
PLO10 Entrepreneurial Skills (ENT)	Demonstrate the ability to identify new opportunities in dealing with issues related to accounting, finance and business management field with entrepreneurial mindset.	Active and Cooperative Learning and Project-based learning	Assignments

PLO11 **Ethics and Professionalism Skills (ETS)**	Demonstrate the ability to perform tasks and make decisions ethically, professionally, and with integrity.	Active and Cooperative Learning, Project-based learning	Assignments

15. Total credit hours to graduate	**90 credit hours**

16. Programme structures and features, curriculum, and award requirements

The Diploma in Accounting programme is offered in both full-time and part-time modes and follows a 2-semester academic year, with several courses being delivered and assessed in each semester. Assessment is based on coursework and a final examination.

Assessment (Refer to UTM's Academic Regulations):
- Continuous Assessment (60%) and Final Examination (40%)
- Passing mark for all courses is 40%.
- Skill acquisition: Accounting software, tax computation, entrepreneurship, and community services.

Award requirements:
- Students must achieve a total of **90** credit hours with a minimum **CPA** of **2.00**

17. Programme Uniqueness

Students in the Diploma in Accounting programme are equipped with knowledge and skills that are highly relevant to industrial needs in accounting and are qualified for the ACCA Exemptions Framework Listed Program. In addition to these core competencies, students are offered unique value-added courses such as Technology Entrepreneurship and Community Financial Awareness. These courses are designed to produce innovative accounting graduates who possess entrepreneurial skills, enabling them to create and manage new business ventures. Furthermore, these courses prepare graduates to serve and contribute positively to the financial well-being of their communities, fostering a sense of social responsibility and community engagement.

18. Career Prospects

Graduates of the Diploma in Accounting can work as accounting, audit, or tax assistants and management trainees. Graduates may also choose to further their studies in various disciplines, such as a Bachelor of Accounting, Bachelor of Accounting Information Systems, Bachelor of Education (Accounting), Bachelor of Management, Bachelor of Business Administration, Bachelor of Finance, or Bachelor of Economics. Additionally, graduates may pursue Applied Skills modules in ACCA courses.

19. UTM Diploma++ Programme
Students are allowed to enrol in short courses (e.g., Microsoft Excel - Basic and Advanced) offered by the university that are relevant to the accounting field during their studies.
20. Facilities available
i.   Computer Laboratory (Accounting Software)   ii.   Language laboratory
21. Support for Students and Their Learning
Personal support Academic Advisor Counseling Infrastructure support Internet access e-learning Digital library Health care and Recreational Financial support Perbadanan Tabung Pendidikan Tinggi Negara (PTPTN) Jabatan Perkhidmatan Awam (JPA) Yayasan Negeri Pusat Zakat Negeri

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Course Code	Course Name	Credit
ULRS 1182*/ UHLM 1122*	Appreciation for Ethics and Civilisation/ Malay Language for Communication 1	2
UHLB 1032	Introductory Academic English	2
DSPG 1113	Principles of Management	3
DSPG 1323	Business Law	3
DSPG 1413	Principles of Microeconomics	3
DSPG 1513	Principles of Marketing	3
DSPP 1113	Financial Accounting and Reporting 1	3
	Total	**19**

Note:*Local students register for UHMS while International students register for ULRS.

YEAR 1 (SEMESTER 2)

Course Code	Course Name	Credit
UHLB 1042	Intermediate Academic English	2
DSPG 1333	Partnership and Company Law	3
DSPG 1423	Principles of Macroeconomics	3
DSPP 1123	Financial Accounting and Reporting 2	3
DSPP 1314	Computer Application in Accounting	4
DSPS 1213	Business Mathematics	3
	Total	**18**

YEAR 1 (SEMESTER 3)

Course Code	Course Name	Credit
ULRS 1032	Integrity and Anti-Corruption Course	2
DSPG 1153	Business Communication	3
DSPP 1213	Islamic Financial System	3
	Total	**8**

YEAR 2 (SEMESTER 4)

Course Code	Course Name	Credit
ULRF 2XX2	Service Learning and Community Engagement Courses	2
DSPP 2133	Financial Accounting and Reporting 3	3
DSPP 2143	Management Accounting 1	3
DSPP 2223	Financial Management	3
DSPP 2513	Taxation 1	3
DSPP 2613	Audit 1	3
DSPS 2223	Business Statistics	3
	Total	**20**

YEAR 2 (SEMESTER 5)
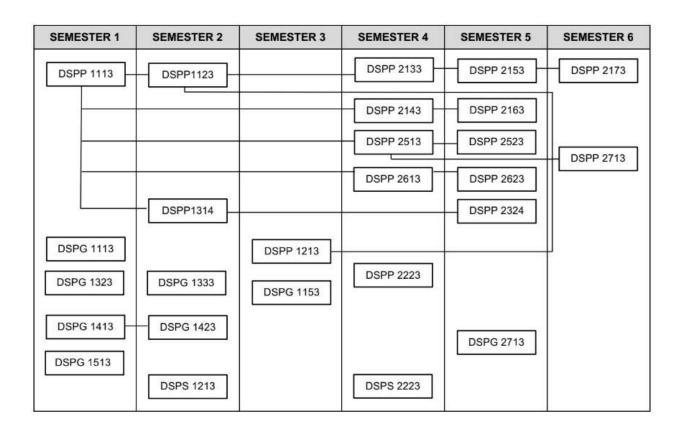
Course Code	Course Name	Credit
DSPG 2713	Technology Entrepreneurship	3
DSPP 2153	Financial Accounting and Reporting 4	3
DSPP 2163	Management Accounting 2	3
DSPP 2324	Accounting Information System	4
DSPP 2523	Taxation 2	3
DSPP 2623	Audit 2	3
	Total	**19**

YEAR 2 (SEMESTER 6)

Course Code	Course Name	Credit
DSPP 2173	Financial Accounting and Reporting 5	3
DSPP 2713	Community Financial Awareness	3
	Total	**6**
	Total Credit	**90**

PRE-REQUISITE COURSES

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6
DSPP 1113	DSPP1123		DSPP 2133	DSPP 2153	DSPP 2173
			DSPP 2143	DSPP 2163	
			DSPP 2513	DSPP 2523	DSPP 2713
			DSPP 2613	DSPP 2623	
	DSPP1314		DSPP 2324		
DSPG 1113		DSPP 1213			
DSPG 1323	DSPG 1333	DSPG 1153	DSPP 2223		
DSPG 1413	DSPG 1423				
DSPG 1513				DSPG 2713	
	DSPS 1213		DSPS 2223		

SYNOPSIS OF CORE COURSES

DIPLOMA IN ACCOUNTING

DSPG 1113: Principles of Management
This course is designed to expose students to the management functions of an organization. It introduces students to the concepts relating to management, particularly, planning, organizing, leading, and control. Included are topics such as managerial competencies, trends that affect the management of organizations, human resource management, motivation, and innovation. At the end of the course, students should be able to highlight the importance of communication with managers and the elements required for an effective presentation.

DSPG 1323: Business Law
This course is designed to expose students to the business laws that are available in Malaysia. As a basis, it shall briefly focus on the definition of law, roles, and functions, types of laws, the process of law-making by the legislative bodies of Malaysia, its procedures, and the roles of the Malay Rulers before a law could be implemented. The course shall concentrate on contract law, the elements of the contract, terms of the contract, types of contracts, discharge of contract, legal remedies for breach of contract, Islamic contractual transaction, and types of commercial transaction laws that are available namely the insurance law, sale of goods law, hire purchase law. At the end of the course, students should be able to present solutions to the relevant business legal problems.

DSPG 1413: Principles of Microeconomics
This course is designed to expose students to the basic concept of economics which consist of both theories and concepts in microeconomics. It will emphasize the basic human problems as well as basic economic problems. It will discuss the theory of demand, the theory of demand, the elasticity of demand and supply, and market equilibrium. In addition, the course outlines a theory of consumer behavior, a theory of production and cost of production, and market structures. At the end of the course, students should be able to differentiate the pricing strategies of perfect competition, monopoly market, monopolistic market, and oligopoly market.

DSPG 1513: Principles of Marketing
This course provides an overview of an introductory course in marketing. The definition of marketing, key marketing concepts, the marketing process, and factors that influence marketing strategies will be explained. Students need to understand major environmental forces that affect marketing and elements of the marketing mix. Students will compare the buying behaviors of final consumers and business customers. They will also look at issues related to a marketing channel, integrated marketing communication as well as product and promotion strategies. At the end of this course, students will be able to develop a set of marketing plan.

DSPP 1113: Financial Accounting and Reporting 1
This course is designed to introduce accounting concepts and assumptions to students such as accounting equations, double entry system, ledgers and journals, types of assets, liabilities, and capital. It also includes the accounting treatment and reporting of year-end adjustments for accruals and prepayments, bad debts and allowance for doubtful debts, and depreciation and accumulated depreciation of non-current assets. At the end of the course, students should be able to demonstrate and apply knowledge by preparing all common accounts in business, trading, and profit and loss reports, statement of profit or loss, and statement of financial position.

DSPS 1213: Business Mathematics
This course introduces fundamental mathematical concepts, techniques and their applications in business, economics, finance, and accounting. It aims to enhance students' mathematical proficiency in managing personal financial activities and business operations. Topics covered include coordinate geometry, elementary functions and graphs, equations, ratio, percentage and basic calculus concepts. Additionally, students will explore various methods for calculating interest, annuities, installment purchases, mark-up, and mark-down. The course is delivered through interactive lectures, structured tutorials, and guided problem-solving activities, with emphasis on real-world applications. At the end of the course, students should be able to apply these mathematical concepts effectively in both personal financial decisions and business activities, where proper decision-making is essential.

DSPG 1333: Partnership & Company Law
The course is designed to generally introduce students to types of business organizations that could be formed as business generating profit tools that are available in Malaysia. Students shall study the nature of a partnership, how to form a partnership, the limitations in numbers of partners, relationships between partners in a partnership and with the firm, rights of a partner, liabilities of partners in a partnership, dissolution of a partnership. The second part of this course shall discuss focus on company law, differences between a company and a partnership, cooperation, foundation, and subsidiary. Students shall be exposed to the advantages of setting up a company, the nature of a company, and its rights and liabilities. At the end of the course, students should be able to present solutions to the relevant partnership and company legal problems.

DSPG 1423: Principles of Macroeconomics
(Pre-requisite DSPG1413)
This course is designed to expose students to the basic economics level that consists of concepts and theories in macroeconomics. These concepts involve national income accounting, uses and limitations of national income statistics, consumption theory, investment theory, the determination of national income equilibrium, money, and banking, monetary policy, fiscal policy, national budget and debt, inflation, unemployment, international trade, the balance of payment and exchange rate. At the end of the course, students should be able to apply the concepts in addressing basic macroeconomic issues.

DSPP 1123: Financial Accounting and Reporting 2
(Pre-requisite DSPP 1113)
This course serves as a continuation of Financial Accounting and Reporting 1. Topics covered are accounting for internal control and check–bank reconciliation, inventory valuation, control accounts, correction of errors, and incomplete records. It also includes the introduction to a financial reporting entity in various types of business organizations, emphasizing the financial statement for clubs, manufacturing entities, branch accounts, partnerships - revaluation of partnership assets, and partnership dissolution. At the end of the course, students should be able to prepare financial statements for both non-profit-oriented organizations and profit-oriented organizations.

DSPP 1314: Computer Application in Accounting
(Pre-requisite DSPP 1113)
This course is designed to introduce students to basic skills in computer usage. Students will be taught computer concepts and the uses of general applications such as Microsoft word, excel, access, and power points in accounting work. At the end of the course, students should be able to apply computer applications in accounting.

DSPG 1153: Business Communication
This course introduces students to the knowledge and skills required to become a competent communicator. The focus will be given to the basic theory and principles of effective communication and its application in today's business environment. Students will be exposed to different forms of communication that exist between individuals, groups, and organizations. They will also learn how to use verbal and non-verbal communication effectively in various business situations such as in meetings, interviews, and presentations.

DSPP 1213: Islamic Financial System
This course covers economic and financial systems, market, function, and Islamic economic and financial system structure, riba', comparison between interest and riba', classifications of riba', the concept of riba in bay' contract and qard, justification for the existence of riba', history of riba', riba' in the Quran and Sunnah, analysis of the forbiddance of riba', controversial issues regarding riba', Islamic banking, Islamic financial instruments, Islamic equity market, equity and loan financing, Islamic financial institutions such as Tabung Haji, Bank Islam, Interest-free Banking System, Takaful, and Al-Rahn Scheme. At the end of the course, students should be able to apply Islamic financial products to the accounting treatment emphasizing Zakat.

DSPS 2223: Business Statistics
This course is designed to expose students to the basic knowledge of statistics in the field of business. It consists of two main parts: descriptive statistics, which focuses on handling and summarizing data, and inferential statistics, where conclusions are drawn from sample data using tests such as hypothesis testing, analysis of variance, chi-square, correlation and regression. Basic probability, probability distribution, and sampling distributions serve as the foundation for inferential statistics. The course is delivered through a combination of lectures and practical sessions, emphasizing problem-solving and real-world application of statistical tools. At the end of the course, students should be able to solve problems related to business statistics.

DSPP 2133: Financial Accounting and Reporting 3
(Pre-requisite DSPP 1123)
This course serves as a continuation of Financial Accounting and Reporting 2. This course is designed to provide in-depth knowledge about the accounting and financial reports especially on current assets, non-current assets and revenue recognition. At the end of the course, students should be able to produce recognized figure for assets and revenue.

DSPP 2143: Management Accounting 1
(Pre-requisite DSPP 1113)
This course is designed to provide basic knowledge about management accounting. It will cover various topics including cost terms, concepts, cost behavior, and cost analysis. The analysis includes variance analysis, BEP, product costing, product pricing, profit planning, budgeting, and performance evaluation. At the end of the course, students should be able to identify the relevant and irrelevant costs and benefits to make a decision.

DSPP 2223: Financial Management
This course consists of an introduction to the financial environment such as firms, investors, and markets, and the fundamental concepts of finance including interest rates, understanding financial statements, cash flows and their analysis, the time value of money, the meaning and measurement of risk and return and working capital management. At the end of this course, students should be able to apply these fundamentals in the valuation of securities for bonds and stocks, determining the cost of capital, and performing capital budgeting.

DSPP 2513: Taxation 1
(Pre-requisite DSPP 1113)
This course is designed to expose the student to every detailed aspect of personal taxation in Malaysia. It will focus on types of taxable income such as business income, employment income, unearned revenue, types of relief and rebate, and status of residents. Besides that, this course also introduces some theories on the administration of taxation in Malaysia. This course will also emphasize topics on business income and business expenses for sole proprietors. At the end of the course, students should be able to apply the theory and prepare personal taxation to arrive at the tax payable for each related year of assessment.

DSPP 2613: Audit 1
(Pre-requisite DSPP 1113)
This course introduces students to theories, procedures, and the application of auditing in an organization. Topics covered are an introduction to auditing, appointment, powers, and responsibilities of auditors, ethical conduct of work, audit planning, audit evidence, audit procedures, and working papers, determination of materiality and risk and assessing internal control of an organization, audit sampling methods, verification of assets and liabilities, reviewing subsequent events, preparation of audit report and effect of information technology on auditing. At the end of the course, students should be able to apply concepts and processes of auditing in making decisions.

DSPG 2713: Technology Entrepreneurship
This course introduces students the basic concepts of technology entrepreneurship as well as the process of creating new technology-based ventures. Specifically, the coverage includes the opportunity recognition process, legal forms of businesses, options in setting up technology-based ventures, planning and arranging for resources to set up new ventures, and financing options for new ventures. At the end of this course, student will be able to develop viable business plan for their chosen business idea.

DSPP 2153: Financial Accounting and Reporting 4
(Pre-requisite DSPP 2133)
This course serves as a continuation of Financial Accounting and Reporting 3. This course is designed to provide in-depth knowledge about the accounting and financial reports especially on current liabilities, long term liabilities and equities. At the end of the course, students should be able to produce recognized figure for liabilities and equities.

DSPP 2163: Management Accounting 2
(Pre-requisite DSPP 2143)
This course is designed as a continuation of Management Accounting 1 to equip the student's further knowledge and skills in Management Accounting 1. Topics covered includes variable costing, CVP analysis, profit planning and budgeting, flexible budget and performance evaluation, standard costs and variance analysis and relevant costs in decision making.

DSPP 2324: Accounting Information System
(Pre-requisite DSPP 1113 & DSPP 1313)
This course is designed to introduce students to the environment of accounting information systems (AIS). Students will be taught about threats and controls, reliable systems, computer fraud, and system development in AIS. This course will focus on two cycles, the revenue cycle, and expenditure cycle as examples of AIS applications. At the end of the course, students should be able to apply AIS knowledge and skills using accounting software.

DSPP 2523: Taxation 2
(Pre-requisite DSPP 2513)
In this course, students will be exposed to the taxation of partnerships and companies in Malaysia. They will learn how to calculate tax for partnerships and also the company's taxation structure. The structure of the company's taxation included topics such as industrial building allowance, basis period and change of accounting date, and tax administration for the company in Malaysia. Besides that, the students will be exposed to other topics namely controlled sales, dividend and tax imputation systems, sales tax and service tax, and real property gains tax. At the end of the course, students should be able to perform computations on partnership and company tax.

DSPP 2623: Audit 2
(Pre-requisite DSPP 2613)
This course is a continuation of Audit I. It intends to strengthen and enhance the students' understanding of auditing. Among the topics that will be discussed are the code of ethics, auditors' liability and in-depth explanations of analytical procedures, computer-assisted audit techniques (CAATs), audit sampling, materiality and audit risk, group audit, and current issues facing the auditing profession. At the end of the course, students should be able to justify other' activities that financial statement audit can be performed by a public accountant like operational audit, compliance audit, and internal audit.

DSPP 2173: Financial Accounting and Reporting 5
(Pre-requisite DSPP 2153)
This course serves as a continuation of Financial Accounting and Reporting 4 This course is designed to enable students to acquire basic skills of company accounting. Topics covered include the application of accounting entries for business combination (by amalgamation or absorption), business conversion (to a company) and business reconstruction (internal or external). At the end of the course, student should be able to prepare and present basic consolidated financial statements of a holding company.

DSPP 2713: Community Financial Awareness
(Pre-requisite DSPP 1123, DSPP 1213, DSPP 2513)
This course is designed to help students integrate the knowledge acquired in relevant courses throughout their diploma program. Students will develop skills in formal written and oral presentations and gain a sense of responsibility in organizing.

DIPLOMA IN

ISLAMIC STUDIES EDUCATION

PROGRAM SPECIFICATION

1. Programme Name	Diploma in Islamic Studies Education
2. Final Award	Diploma in Islamic Studies Education
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DDWI
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full-time / Part Time
11. Study Duration	Minimum : 6 semester (3 Years) Maximum : 9 semester (4 ½ Years) Part Time: Minimum : 7 semester (3 ½ Years) Maximum : 18 semester (9 Years)

Type of Semester	**No. of Semesters**		**No. of weeks per semester**	
	Full Time	Part Time	Full Time	Part time
Normal	6	8	14	14
Short	0	4	0	9

| 12. Entry Requirement | **A) GENERAL UNIVERSITY REQUIREMENTS**
Obtained a pass in Sijil Pelajaran Malaysia (SPM)/ equivalent, with a minimum of **FIVE (5)** credits **(GRADE C)** inclusive of Bahasa Melayu / Bahasa Malaysia and a pass in History at the SPM level.

B) SPECIFIC PROGRAMME REQUIREMENTS
Fulfilled the General University Requirements and passed with credits **(Grade C)** in any **FOUR (4)** other subjects.

*Candidate without a minimum credit in Arabic Language or who does not take Arabic Language subject at SPM level, is required to undergo the Arabic Language enhancement course offered by UTM and **PASS** the course. |
| | **OR**
Obtain a certificate from Polytechnic/equivalent that is relevant to the Diploma programme offered by obtaining a minimum cumulative grade point average (CGPA) of 2.00.

OR
Obtain a pass in Sijil Tinggi Agama Malaysia (STAM) by obtaining a minimum Maqbul.

OR
Obtain a pass in Sijil Tinggi Pelajaran Malaysia (STPM) with at a minimum a PASS in Syariah / Usuluddin.

OR
For a candidate with work experience relevant to the Diploma programme offered, admission through APEL (A) may be considered. |

13. **Programme Educational Objectives:**

Diploma in Islamic Studies Education shall produce graduates who are:

a. Competent, creative and innovative in applying relevant Islamic education knowledge, practical skills, appropriate numerical techniques, and digital technologies to solve problems in diverse educational settings.

b. Communicate effectively with self-confidence and demonstrate leadership in engaging with stakeholders, while continuously enhancing personal and professional growth through lifelong learning.

c. Uphold ethical values and professionalism, and demonstrate positive attitudes, an entrepreneurial mindset, and sustainable practices in contributing to the development of the ummah, society, and personal career advancement.

14. Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies			
Programme Learning Outcomes(LPO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO1 **Knowledge and Understanding (KW)**	Demonstrate the knowledge in the field of Islamic Studies as an educator or in other related professions.	Lectures, online forum discussion, cybergogy, authentic, blended, active, and cooperative learning.	Quizzes, tests, assignments, presentations, examinations, lesson plans, and practicum.
PLO2 **Cognitive Skills (CG)**	Apply knowledge in the field of Islamic studies education to solve related problems.	Lectures, online forum discussion, cybergogy, mini-scale research	Tests, assignments, projects, examinations, and practicum.
PLO3 **Practical Skills (PS)**	Apply practical skills in the field of education in Islamic studies.	Laboratory work, cybergogy, tutorials, active and cooperative learning, case studies, and project-based learning.	Laboratory report, debate simulation, presentations, projects, and practicum.

(b) Generic Skills			
Programme Learning Outcomes(LPO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO4 Interpersonal Skills (IPS)	Interact effectively and collaboratively in managing relationships in teams and within the organizations.	Assignments, group discussion, and group projects.	Project/assignment reports and presentations.
PLO5 Communication Skills (CS)	Communicate effectively in oral or written with various stakeholders and all levels of society.	Mini project, collaboration assignment, active and cooperative learning, presentations, and project-based learning.	Project/assignment reports, presentations, writing tests, self-reflections.
PLO6 Digital Skills (DS)	Apply a range of digital applications to seek and process data related to work and studies.	Cybergogy, laboratory works, and task-based learning.	Project and assignment reports.
PLO7 Numeracy Skills (NS)	Use a combination of numerical and graphical data in completing relevant tasks.	Problem-solving assignments.	Tutorials and assignment reports.
PLO8 Leadership, Autonomy & Responsibility (LAR)	Demonstrate leadership qualities and be able to act as a responsible member of the group towards achieving a common goal.	Active and cooperative learning.	Project /assignment reports, and peer review report.
PLO9 Personal Skills (PRS)	Identify self-improvement initiatives and possibilities for career development or further education.	Case study, cooperative learning, mini scale study.	Presentations, literature review, report writing.
PLO10 Entrepreneurial Skills (ENT)	Demonstrate the ability to identify new opportunities in dealing with issues related to Islamic studies with an entrepreneurial mindset.	Service learning, field-work, active and cooperative learning.	Business model
PLO11 Ethics and Professional Skills (ETS)	Demonstrate the ability to perform tasks and make decisions ethically, professionally and with integrity.	Case study, collaborative-based project, reports.	Reflection, project reports, presentations, and practicum.

15. Total credit hours to graduate	**90 credit hours**

16. Programme structures and features, curriculum and award requirements

The programme is offered in full-time mode and based on a 2 Semester Academic Year with several courses being delivered and assessed in each Semester. Assessment is based on coursework, final examination and teaching practicum.

Assessment (Refer to UTM's Academic Regulations):
● Final Examination not more than 50% and coursework not more than 60%
● Passing marks for all courses is 40%.
● Skill acquisition: 100% Practicum including practicum report.

Award requirements:
● Students must achieve a total of **90** credit hours with a minimum CPA of 2.00

17. Our uniqueness

This programme blends theories and practice and covers the major areas of education and Islamic studies, commercialization, research development, and innovation. This programme produces graduates who are more skilled in the field of Islamic studies and equipped with Computer Science and Basic Multimedia Education courses that are relevant in the field of the education profession.

18. Career Prospects

Diploma in Islamic Studies Education holders' can work as an Teaching assistant in Primary/Islamic School and assistant executive (Islamic administration and finance). The candidates may also continue to further their study in various disciplines such as Bachelor of Islamic Studies / Education, Bachelor of Business Administration, and Bachelor of Muamalat Management at local or foreign universities.

19. UTM Diploma ++ Programme

● Students are given an opportunity to enroll in short courses offered by the university during studies or semester breaks such as Teaching Certificates.

20. Facilities Available

List of Laboratories:
d. Computer Laboratory
e. Language Laboratory

21. **Support for Students and Their Learning**

Personal support
    Academic
    Advisor
    Counseling
 	
Infrastructure
    support Internet
    access
    e-learning
    Digital
    library
    Health care and Recreational
 	
Financial support
    Perbadanan Tabung Pendidikan Tinggi Negara (PTPTN)
    Jabatan Perkhidmatan Awam (JPA)
    Yayasan Negeri
    Pusat Zakat Negeri

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
ULRS 1032	Integrity and Anti-Corruption Courses	2
UHLB 1032	Introductory Academic English	2
DDWI 1012	Educational Philosophy	2
DDWI 1022	Principles of Islamic Jurisprudence I	2
DDWI 1032	Arabic Grammar I	2
DDWI 1042	Jawi and Islamic Calligraphy	2
DDWI 1052	Al-Quran Memorization	2
DDWD 1003	Computer System and Applications	3
	TOTAL	**17**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
ULRS 1182*/ UHLM 1122*	Appreciation For Ethics and Civilisation / Malay Language for Communication 1	2
UHLB 1042	Intermediate Academic English	2
DDWI 1062	Educational Psychology	2
DDWI 1072	Fundamental of Pedagogy	2
DDWI 1082	Principles of Islamic Jurisprudence II	2
DDWI 1092	Fiqh Ibadah	2
DDWD 1023	Information Technologist and Communication Application	3
	TOTAL	**15**

Note: *Local students register for ULRS while international students register for UHLM.

YEAR 2 (SEMESTER 3)

Code	Course	Credit
ULRF 2XX2	Service Learning & Community Engagement Course	2
DDWI 2102	Measurement and Evaluation in Education	2
DDWI 2112	Islamic Faith	2
DDWI 2122	Fiqh Muamalat	2
DDWI 2132	Arabic Grammar II	2
DDWI 2142	Arabic Language Teaching Methods	2
DDWI 2152	Methods of Teaching Islamic Education	2
DDWD 2033	Teaching and Learning Technology	3
	TOTAL	**17**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
DDWI 2162	Educational Sociology	2
DDWI 2172	Introduction to Ulum Quran	2
DDWI 2182	Introduction to Ulum Hadis	2
DDWI 2192	Fiqh Sirah	2
DDWI 2202	Fiqh Jinayat	2
DDWI 2212	Islamic Morals	2
DDWI 2222	Maharat Al-Qur'an	2
DDWD 2043	Introduction to Multimedia	3
	TOTAL	**17**

YEAR 3 (SEMESTER 5)

Code	Course	Credit
DDWI 3232	Guidance & Counselling	2
DDWI 3242	Arabic Grammar III	2
DDWI 3252	Introduction to Islamic Da'wah	2
DDWI 3262	Verses and Hadith Related to Legislation	2
DDWI 3272	Fiqh Mirath	2
DDWI 3282	Islamic Civilizational Heritage in the Malay World	2
DDWI 3291	Micro Teaching	1
DDWD 2053	Information Management System in Education	3
	TOTAL	**16**

YEAR 3 (SEMESTER 6)

Code	Course	Credit
DDWI 3308	Practicum	8
	TOTAL	**8**
	TOTAL CREDITS:	**90**

PRE-REQUISITE
DIPLOMA IN ISLAMIC STUDIES EDUCATION

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6
DDWD 1003	DDWD 1023	DDWD 2033	DDWD 2043	DDWD 2053	
DDWI 1012	DDWI 1062	DDWI 2102	DDWI 2162	DDWI 3232	
	DDWI 1072				
DDWI 1022	DDWI 1082		DDWI 2192	DDWI 3252	
	DDWI 1092	DDWI 2122	DDWI 2202	DDWI 3272	
DDWI 1032		DDWI 2132		DDWI 3242	
DDWI 1042			DDWI 2212	DDWI 3262	
DDWI 1052		DDWI 2112	DDWI 2172	DDWI 3282	
			DDWI 2182		
			DDWI 2222		
		DDWI 2142		DDWI 3291	DDWI 3308*
		DDWI 2152			

*Note: Students must pass all courses before undergoing the DDWI3308 Practicum

SYNOPSIS OF CORE COURSES

DIPLOMA IN ISLAMIC STUDIES EDUCATION

DDWI 1012: Educational Philosophy
This course examines education from different perspectives, in order to make sense of current developments in education globally, regionally, and within the country. The course covers general concepts of education, the various philosophical schools of thought, as well as regional and global agenda affecting education, such as the ASEAN community and the Sustainable Development Goals (SDGs). By exposing students to the various dynamics affecting education, it is hoped that the students would be able to carry out their responsibilities as effective changemakers, both in the education sector as well as any professional field of their interest.

DDWI 1022: Principles of Islamic Jurisprudence I / *Usul Fiqh I*
This course will introduce students to the early chapters in the debate on Usul Fiqh. It will discuss the introduction to Usul Fiqh: its meaning, emergence, history of compilation; Islamic Law: understanding, division: taklifi and wad'i, al- Hakim, al-mahkum fihi, al-mahkum 'alayhi, al-ahliyah; Islamic evidence: The argument of the Qur'an: Qat'iyah al-thubut al-wurud, dilalah nusus al-Quran, qat'iyah and zanniyah; Hadith: argument, division from the point of view of sanad and wurud, qat'iyah and zanniyah, the function of hadith on the Quran; Ijma ': its meaning and argumentation; Qiyas: his argument; as well as on disagreements.

DDWI 1032: Arabic Grammar I / *Qawaid Lughah Arabiyyah I*
This course discusses the division of words: ism, fi'l, and harf, division of ism and fi'l: al-Mu'rabah, al-Mabniyyah and al-I'rab's address. Also discussed are Marfu'at al-Asma which includes al-Mubtada', al-Khabar, Ism Kana wa Akhawatuha, Khabar Inna wa Akhawatuha, al-Fail, Na'ib al-Fail and al-Tawabi '. Also discussed are al-Mizan al-Sarfiyy: al-Ism al-Sahih wa Ghayr al-Sahih al-Akhir, al-Nakirah wa al-Ma'rifah, al-Jamid wa al-Mutasarrif, Mufrad, Muthanna, and Jama'.

DDWI 1042: Jawi and Islamic Calligraphy
This course discusses the history and role of Jawi in Malay civilization. Students are exposed to how to spell and write Jawi correctly, the formation of loan word spelling as well as understanding of the old and new Jawi spelling system so that comparisons and adjustments can be made. The text of the classic Jawi book is used as a reference and exercise. Creativity in writing Jawi is applied according to the method of Nasakh calligraphy which is the main writing of Jawi books. Several calligraphy figures as well as traditional learning methods were introduced. Exposure to the application of calligraphy is given from the theoretical and practical aspects by making references and comparisons on calligraphy found in various media, including in the decoration of famous Islamic buildings.

DDWI 1052: Al-Quran Memorization / *Al-Quran wa Hifzuh*
This course is designed to read, memorize and apply the law of tajwid from the following surahs: al-Fatihah, al-Sajdah, Yasin, al-Waqi'ah and al-Jumu'ah.

DDWD 1003: Computer System and Applications

This course will expose students to the knowledge and skills of computer systems and applications. Students will be able to handle computer hardware including input, processing, output, storage, understand the importance of the central processing unit (CPU) and cloud computing technology. Students will work together to investigate how devices interact with the operating system and other software. Besides, students learn about the factors affecting the performance of a computer system. Students will also explore different types of software such as computer application (word processing, spreadsheets, and presentations graphics), system and utility.

DDWI 1062: Educational Psychology

This course introduces students to the importance of educational psychology in providing the basis of various concepts relating to learning, cognition, motivation and classroom practice. This course is designed to facilitate students in understanding differences of students especially in terms of their cognitive, emotional and social development at schooling age through active learning activities and discussion. In addition, the course is crafted to assist students in acquiring knowledge and understanding psychological concepts, principles and theories relating to teaching practice and learning strategies. The course involves assessment that would assess students' understanding and ability to apply relevant principles and theories relating to classroom teaching through various types of assessment.

DDWI 1072: Fundamental Pedagogy

This course aims to equip students with the knowledge and skills of teaching and learning pedagogy. Topics discussed relate to teaching models, approaches, strategies, methods, and techniques, 21st Century Learning concepts (PAK21), assessment, micro-teaching, and classroom management. Class discussions and assignments focus on planning and implementation in the context of PAK21. In addition, the application of knowledge and teaching skills in micro-teaching sessions also helps practice in preparation for real situations. The course also trains students to develop self- confidence, collaboration, critical thinking, and creativity, and to communicate effectively through project-based teaching orientation.

DDWI 1082: Principles of Islamic Jurisprudence II / *Usul Fiqh II*

This course is a continuation of Usul Fiqh I (DDWI 1022). It discusses the Maqasid al-Shari'ah, al-Ijtihad, al-Taqlid, al- Talfiq, Ifta' and fiqh ikhtilaf.

DDWI 1092: Fiqh Ibadah

This course discusses the concepts and laws of the Fiqh Ibadah based on the Shafie school of thought (madhhab) in Islamic law which covers the following topics; Toharah: Impurities and purification, ablution (wudu') and bathing (ghusl); Prayers: prayer obligations, Friday prayer, the prayer of a traveller (musafir), and the congregational prayer; Zakat: zakat- obliged property, zakat distribution; Fasting: conditions, rules and role of fasting. Students will be assessed through mid-semester and final examination, blended learning involving e-learning activities and the collaboration project. This course is expected to train students to provide accurate and comprehensive views on the performance of worship. The course is also expected to contribute to a holistic and contemporary understanding of fiqh towards creating a harmonious complementary society.

DDWD 1023: Information Technologies and Communication Application

This course exposes students to computer network devices and technologies as well as data communication and telecommunication. The knowledge will help students to understand the evolution and application of network technologies in education and as preparation as a ICT literate teacher. Students are also going get to know to applications, ethical and current issues related to the usage of the Internet. At the end of the course, students are able to use various Internet applications and technologies for the purpose of teaching and learning.

DDWI 2102: Educational Measurement and Education

The course discusses the basic principles of measurement, testing and assessment in the classroom. The course outlines procedures for designing or selecting, administering and interpreting a variety of assessment measures typically used in classrooms and schools. Topics covered include concepts and types of tests, types of evaluation, principles of test construction, test scores and items analysis, and interpretation and reporting of test information. The course is designed to facilitate students acquiring knowledge and understanding of concepts, principles and techniques of educational measurement and classroom assessment. This course will adapt communication and numerical skills, hence students will be able to deliver ideas in a clear, effective and comprehensible manner and be able to define and analyse problems and make well supported solutions.

DDWI 2112: Islamic Faith

This course discusses the meaning of faith, the concept of Tauhid, the uniqueness of Islamic faith, the concept of prophecy and Sam'iyyat; factors of strengthening and destroying the faith as well as superstitious matters in the creed.

DDWI 2122: Fiqh Muamalat

This course discusses the concepts and laws of the Fiqh Muamalat based on the Shafie school of thought (madhhab) in Islamic law which covers the following topics; The concepts of property and ownership in the Islamic muamalat system: types of property, and types of ownership; contract theory: contract formation, qualifications, disability matters, and khiyar; major contracts in muamalah: sale, lease, gift, and loan. This course is expected to train students to provide accurate and comprehensive views on the Islamic law of transactions. The course is also expected to contribute to a holistic and contemporary understanding of fiqh towards creating a harmonious complementary society.

DDWI 2132: Arabic Grammar II / *Qawaid Lughah Arabiyyah II*

This course will expose students to the relationship between words in phrases, clauses and sentences; Arabic grammar and morphology in theory and practice. Discussions include al-Asma 'war: Khabar Kana wa Akhawatuha, Ism Inna wa Akhawatuha, al-Maf'ul bih, al-Maf'ul al-Mutlaq, al-Maf'ul li Ajlih, al-Maf'ul Fih, al -Maf'ul Ma'ah, al-Hal, and al-Mustathna '. This course also discusses al-Fi'l: al-Sahih wa al-Mu'tall, al-Fi'l al-Lazim wa al-Fi'l al-Muta'addi, al-Ism al-Mujarrad wa al-Mazid , al-Fi'l al-Madi, al-Mudari 'and al-Amr, al-Fi'l al-Mabni li al-Ma'lum wal-Mabni li -Majhul, al-Hamzah; and al-Ilal al-Ibdal.

DDWI 2142: Arabic Language Teaching Methods

This course discusses various methods of teaching Arabic such as grammar and translation methods, direct method, listening and speaking methods, elective methods. Students will be exposed to factors which influence effective teaching of Arabic using 21st Century Learning Methods, suitable textbooks, use of language labs, and development of language teaching tools, assessment and also Micro Teaching.

DDWI 2152: Methods of Teaching Islamic Education

This course will expose students to the Introduction to Islamic Education in terms of philosophical foundations, objectives and fields. History of the Development of Islamic Education, the Teaching Approach of Rasulullah and the Companions, the Development of Islamic Education in Malaysia, Islamic Education in the Primary School Standard Curriculum (KSSR) and the Integrated Secondary School Curriculum (KBSM) and the Secondary School Standard Curriculum (KSSM), Introduction to the J-QAF Program, Application of pure values, across the curriculum and join forces. Fardhu Ain Assessment Approach (PAFA), Testing, Measurement and Assessment of Islamic Education.

DDWD 2033: Teaching and Learning Technology

The course introduces the principles of educational technology in relation to the teaching and learning process. It explores the utilisation and integration of the technology in education with a purpose of improving education. This includes the discussions on the use of the basic concept of communication and instructional design models in designing learning materials so as to improve and meet the specific goals in teaching and learning. As learning materials today have greatly expanded because of the various technological advances, students will take a step back to learn some of the conventional technology such as the blackboard, whiteboard, televisions, VCRs and different types of projectors (overhead, slide and opaque projectors). The students will also be given opportunity to explore the use of newer technology such as the computer, various software applications, LCD projectors, camcorders, digital cameras, scanners, the Internet, satellite, interactive TV, audio & video conferencing and artificial intelligence in designing the most effective learning environment for students. With the knowledge of educational technology, the future educators must be proficient in computer literacy. Thus, at the end of this course students are taught to develop instructional materials for teaching and learning purposes through group work projects as they will become an educator later to address the digital divide in the society.

DDWI 2162: Sociology of Education

This course is designed to expose students to various concepts related to sociology of education. It discusses education from the perspectives of sociology. Students will also be exposed to the concepts of socialisation agents, social stratification, family, school and community as social institutions. This course also discusses topics on social changes and social mobility through education. Students are expected to be able to identify issues on potential service-learning projects.

DDWI 2172: Introduction to Ulum Quran

This course discusses the meaning of the Qur'an; name, nature of the Qur'an, collection of the Qur'an, revelation, the relationship of the Qur'an with other types of revelation, the difference between the Qur'an and the Hadith Qudsi. Subsequent discussions focused on; 'Ulum al-Quran; definition and scope of debate, compilation, and bookkeeping of 'Ulum al-Quran. Nuzul al-Quran; the stages of the revelation of the Qur'an, the wisdom of the gradual revelation of the Qur'an; The earliest and last verses of the Quran; Asbab al-Nuzul, the importance of understanding Asbab al-Nuzul in rejecting ambiguity in the text of the Qur'an. Tafsir; definition, conditions and manners of Mufassir, growth and development of tafsir, types of tafsir and misinterpretation of tafsir.

DDWI 2182: Introduction to Ulum Hadis

This course discusses the introduction of hadith: distribution, collection of hadith, the role of hadith towards al-Quran, position of hadith in Islamic jurisprudence, methods of accepting and delivering hadith, Quranic differences, qudsi and Nabawi, Jarh and ta'dil, history of hadith writing, mawdu' (fabricated) hadith and its innovation, as well as the study of several mawdu' hadith, factors that guarantee the hadith survival, the position of the hadith: sahih, hasan, da'if, official form of hadith, doubt among orientalist around Bukhari and Muslim authentic hadith.

DDWI 2192: Fiqh Sirah

This course exposes students to the importance and privilege of knowing Sirah Nabawiyyah as an element to understand Islam. Students are exposed to knowledge about the Arabian Peninsula background, the events of the birth of the Prophet SAW, his life, the preparation of the apostles, the stage and form of receiving revelation, his da'wah struggle, migration, and war. The discussion also focuses on the aspect of Rasulullah SAW as the best follower in various areas of life as well as teaching and example from every event that occurs.

DDWI 2202: Fiqh Jinayat

This course discusses the concepts and laws of Fiqh Jinayat based on Shafie schools of thought (madhhab) in Islamic law. The topics discussed are the philosophy of punishment in Islam; the crimes of hudud and its punishments, such as zina, qazaf, sariqah, qat' al-tariq, shirb al-khamr, riddah, and hirabah; the crimes of qisas and diyat and its punishment; and the crime of ta'zir and its punishment. Formative and summative assessments are used to assess students. Methods of blended learning through e-learning activities and collaborative projects are applied in teaching and learning. This course is expected to train students to present their perspectives in addressing current issues in Fiqh Jinayat in accordance with the four madzhabs.

DDWI 2212: Islamic Morals

This course discusses the concept of akhlak, resources of akhlak, differences among akhlak, moral and ethics, the position and importance of akhlak as well as the characteristics of akhlak al-karimah. The formation of akhlak, and akhlak mahmudah and mazmumah. Lastly, it discusses the role of akhlak and its relationship to contemporary issues; in politics, economics and social.

DDWI 2222: Maharat Al-Qur'an

This course discusses the introduction to the basics of tajwid, makhraj and the nature of letters, the law of nun sakinah and tanwin, the law of mim sakinah, the law of mad, waqaf and ibtida 'and Rasm Uthmani. Ilmu Qira'at; introduction to the science of qiraat; Qira'at Sab'ah, manhaj Qira't Sab'ah, Mabadi " ilm Qira'at, pillars of authentic qira'at, types of qiraat, differences between al-Qurra ', alriwayah, al-Tariq and wajh, the introduction of Imam Nafi' al-Madani and his narrator and his manhaj qira'at, the introduction of Imam Qalun and Imam Warsh and their manhaj qira'at, the introduction of Imam Ibn Kathir al-Makki, his narrator and his manhaj qira'at. Applying the practice of qira'at surah al- Fatihah.

DDWD 2043: Introduction to Multimedia

This course gives exposure to students about theory and basic concepts of digital graphic, animation, audio and video. Students will learn about the main concept for each element and how to use it appropriately in developing multimedia applications and websites. Students will be guided on how to use various techniques to create high quality multimedia elements using current digital graphic, animation, audio and video software. This course also stresses on the combination of multimedia elements in creating effective and high-quality teaching materials.

DDWI 3232: Guidance and Counselling

This course will expose students to the history, background, definition and concept, significance and aims of the guidance and counselling service. Students will be looking at the techniques and approaches in coping with problems at school. Students will also cover the different types of counselling services available and the duties and ethics of a counsellor. Comparisons between several aspects of western and Islamic counselling will also be discussed. At the end of the course, students will be able to conduct face to face or online counselling session and demonstrate the ability to communicate effectively using appropriate tools and good interventions in guidance and counselling session. Students can show the ability to develop an inquisitive mind about counselling issues and ability to act ethically in making decision and interacting with the community.

DDWI 3242: Arabic Grammar III / *Qawaid Lughah Arabiyyah III*

This course will expose students to the relationship between words in phrases, clauses, and sentences; Arabic grammar and morphology in theory and practice. The discussion focused on several topics on Mansubat al-Asma ', namely al-Munada and al-Tamyiz (including al-Tawabi' lil Mansubat: al-na'at, al-'atf, al-tawkid, and al-badal). Also discussed are the al-Asma Surahs': al-Majrur bi Harf Jar and al-Majrur bil-Idafah (including al-Tawabi'lil Majrurat). Types of al-Asalib: Uslub al-Shart, Uslub al-Qasam, Uslub al-Madh wa al-Zamm, Uslub al-Ta'ajjub, Uslub al-Ikhtisas, Uslub al-Ighra 'wa al-Tahdhir, Uslub al -Istighathah, and Uslub al-Istifham. The discussion in the Sarf (Arabic Morphology) involved topics related to al-Tasghir and al-Nasab.

DDWI 3252: Introduction to Islamic Da'wah

This course discusses the meaning, concept and history of da'wah. It also describes the importance of da'wah as a discipline of modern knowledge and its pillars, namely Maudhu, Da'i, Mad'u and Manhaj of da'wah. Next, it explains the concept of da'wah to Muslims and non-Muslims which focuses on the analysis of its challenges and approaches.

DDWI 3262: Verses and Hadith Related to Legislation

This course will expose students to information on selected verses of the Qur'an and the Prophet's hadith in the field of Islamic law such as ibadah (worship), munakahat (marriage), muamalat, jinayat (criminal law), education, family, society, morals and information technology. Students will be able to understand the methodology of ayat wa hadith ahkam, comparison of dalil and arguments in Islamic law construction as well as identify misunderstandings and misapplication of the dalil in electronic and social media.

DDWI 3272: Fiqh Mirath

This course exposes students to methods of faraid calculation for legal heirs in Islamic inheritance management. The students can also understand Islamic estate planning contracts (Islamic inter vivos, will and Matrimonial Property) which must be in line with Shariah and community needs. Through case study, the students will be able to demonstrate the current issues related to Islamic inheritance management and planning such as charged property, conditional inter vivos (umra and ruqba), succession management under Land Act (Group Settlement Areas) 1960, Baitulmal and Adat Perpateh. The students also discuss the recent development of Islamic inheritance management and planning industry which involves various government and private agencies. This course involves problem-based learning, case study and online discussion to enhance student's thinking skills.

DDWI 3282: Islamic Civilisational Heritage in the Malay World

This course introduces students to the Islamic Malay civilisation, the role of Islamization in radically and holistically transforming the Malays and their worldview. Students are also exposed to the importance of Malay language as a medium of communication and knowledge transfer, the complementary role of the Malay rulers and scholars and the dissemination of Islamic education in the institution of pondok and pesantren. The heritage in the forms of arts, culture, local genius and Malay Manuscripts depict the intact worldview grounded on the religion of Islam and the Malay tradition. Finally, students will carry out a project on prominent Malay scholars and their contribution to the Islamic Malay civilisation. Throughout the course, different teaching and learning strategies such as collaborative learning, active learning as well as blended learning are adopted. The course also enables students to develop scholarship skills.

DDWI 3291: Microteaching

This course is designed to prepare students to undergo practical teaching in schools. It will emphasise mainly in the hands-on experience in which students are required to prepare lesson plan (for theory and practical class) and actively involved in practicing teaching skills. Students are exposed to teaching activities which consist of verbal and non-verbal teaching skills such as class control, questioning, explaining, rewarding, smiling, nodding, gestures, movements, etc. Finally, students will be given the opportunity to practice their skills in microteaching session which include introduction, induction set, development and closing. Group discussion will be conducted in order to rectify and remedy the strengths and the weaknesses of the teaching. Student will be guided to make self-reflection and writing reflective practice.

DDWD 2053: Information Management System in Education

Students acquire the basic knowledge and skills needed to effectively utilize information systems in support of school's organizational strategy. In this course, students will be introduced to the fundamentals of information management system and the skills necessary to design and deploy a computer-based application. They will create a database driven user-centric application that is designed specifically for managing information related to the field of education.

DDWI 3308: Teaching Practicum

This practicum requires students to undergo teaching practice in designated secondary schools. For the first week of the practicum, the students are required to familiarize themselves with the school environment (school orientation). In this orientation, they need to produce a portfolio pertaining to the school's administration and teachers' responsibilities. Students are required to engage in a classroom teaching practicum in accordance with their specialized area of teaching. They are expected to apply all the teaching skills that they have learned in the related courses to the classroom context. They will be jointly supervised by faculty lecturers (Guiding Lecturers) and school teachers (Guiding Teachers) with a ratio of marks 70:30.

DIPLOMA IN

—

LAND SURVEYING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Land Surveying
2. Final Award	Diploma in Land Surveying
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DSPL
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-governing
10. Study Scheme (Full Time/Part Time)	Full Time and Part Time
11. Study Duration	Full Time Minimum : 6 semester (3 Years) Maximum : 9 semester (4 ½ Years) Part Time Minimum : 4 semester (4 Years) Maximum : 18 semester (9 Years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	Part Time	Full Time	Part time
Normal	6	8	14	15
Short	0	3	0	9

12. Entry Requirement	A. **GENERAL REQUIREMENTS**
	1. **Sijil Pelajaran Malaysia (SPM) / Matriculation / Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) / Sijil Politeknik / Sijil Kolej Komuniti (SKK) / equivalent qualification (Level 3 MQF)** Obtain Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits inclusive of Bahasa Melayu and pass in History subject in SPM exam. 2. **Equivalent Qualification (Sijil Vokasional Malaysia (SVM))** Possess Sijil Vokasional Malaysia (SVM) with at least credits in Bahasa Melayu (Code 1104). 3. **Equivalent Qualification (O Level)** Possess Sijil Pelajaran Malaysia (SPM) with at least credits in Bahasa Melayu / Bahasa Melayu July Paper. 4. **Equivalent Quaification (APEL-A)** Pass APEL-A MQA assessment. B. **SPECIFIC REQUIREMENTS** 1. **Sijil Pelajaran Malaysia (SPM) / Matriculation** ● Fulfill the University's General Requirements; ● Specific Programme Requirement Obtained at least Grade C in TWO (2) of the following subjects: ● Mathematics at SPM level ● ONE (1) from other subjects **AND** Passed in English subject at SPM level.

	2. **Sijil Tinggi Pelajaran Malaysia (STPM)** ● Fulfill the University's General Requirements; ● Specific Programme Requirement Possess Sijil Tinggi Pelajaran Malaysia (STPM) with at least Grade C (GP 2.0) in any subjects; **AND** Obtained at least Grade C in Mathematics at SPM level; **AND** Passed in English subject at SPM level. 3. **Sijil Tinggi Agama Malaysia (STAM)** ● Fulfill the University's General Requirements; ● Specific Programme Requirement Possess Sijil Tinggi Agama Malaysia (STAM) with at least Maqbul (pass); **AND** Obtained at least Grade C in Mathematics at SPM level; **AND** Passed in English subject at SPM level. 4. **Sijil Politeknik** ● Fulfill the University's General Requirements; ● Specific Programme Requirement Possess Sijil Politeknik in Level 3 MQF and related to the Diploma program applied for with at least a CGPA of 2.00;

AND

Obtained at least Grade C in Mathematics at SPM level;

AND

Passed in English subject at SPM level.

5. **Kolej Komuniti (SKK)/ equivalent qualification (Level 3 MQF)**
   ● Fulfill the University's General Requirements;
   ● Specific Programme Requirement

Possess Sijil Kolej Komuniti (SKK) / Certificate recognized as equivalent to it in Level 3 MQF and related to the Diploma program applied for with at least a CGPA of 2.00;

AND

Obtained at least Grade C in Mathematics at SPM level;

AND

Passed in English subject at SPM level.

6. **Equivalent Qualification (Sijil Vokasional Malaysia (SVM))**
   ● Fulfill the University's General Requirements;
   ● Specific Programme Requirement

Possess Sijil Vokasional Malaysia (SVM) in related to the Diploma program applied for with at least Grade C in Mathematics;

AND

Obtained Academic CGPA ≥ 3.33;

	AND Obtained Vocational CGPA ≥ 3.67; **AND** Passed in English subject. **7. Equivalent Qualification (APEL-A)** • Fulfill the University's General Requirements;and • Specific Programme Requirement Pass the APEL – A MQA assessment by meeting the requirements of the applied program area; *Note:* • *Candidates for Diploma in Land Surveying programme must not have colour blindness or any disabilities which may hinder practical work.*

13. Programme objectives:

Graduate of Diploma in Land Surveying, will achieve the followings objectives:

i.   Competent, creative, critical and innovative in problem solving related in the field of land surveying.
ii. Communicate effectively with leadership skill and self-confidence while striving for career development through life-long learning.
iii. Uphold ethical values and contribute to the needs of the organization and society by participating in various related activities.

14. Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 Knowledge and Understanding (KW)	Acquire knowledge of science in the field of land surveying	Active learning, lectures, tutorials, fieldwork, lab work, assignment, Project Based Learning, Multidisciplinary Course, industrial training, individual study, demonstration, project based learning.	Examinations, field and laboratory reports, seminar presentations, assignments, quiz, group project reports.
PLO2 Cognitive Skills (CG)	Apply and analyze information using appropriate land surveying techniques and tools.	Active learning, lectures, tutorials, fieldwork, lab work, assignment, Project Based Learning, Multidisciplinary Course, industrial training, individual study, demonstration, project based learning.	Examinations, laboratory reports, presentations, discussions, skills demonstration, problem based exercises, group projects.

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO3 **Practical Skills** **(PS)**	Execute and manage land surveying tasks using available resources.	Active learning, lectures, tutorials, fieldwork, lab work, assignment, Project Based Learning, Multidisciplinary Course, industrial training, individual study, demonstration, project based learning.	Laboratory reports, presentations, discussions, skills demonstration, problem based exercises, group projects.

(b) Generic Skills

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO4 **Interpersonal Skills** **(IPS)**	Interact effectively and collaboratively in managing relationships in teams and within the organisations.	Fieldwork, Assignment, Industrial Training	Project, Peer Assessment, Logbook, Practical Evaluation Form.
PLO5 **Communication Skills** **(CS)**	Effectively and convincingly communicate with rationales ideas, and propositions through written, visual and oral presentations to different audiences	Active learning, Lab, Project Based Learning, Multidisciplinary Course, Industrial Training, Multidisciplinary Course.	Project, written assignments, field and laboratory reports, oral presentations and Internal Panel, External Panel.
PLO6 **Digital Skills** **(DS)**	Apply a range of digital applications as well as to seek and process data related to work and studies in the field of land surveying.	Active learning, Lab	Project, written assignments, presentations, laboratory reports.
PLO7 **Numeracy Skills (NS)**	Use and interpret routine and complex numerical and graphical / visual data in the field of land surveying.	Active learning, lecture, fieldwork, lab	Project, written assignments, homework.
PLO8 **Leadership, Autonomy and Responsibility** **(LAR)**	Demonstrate leadership qualities and be able to act as a responsible member of the group towards achieving common goal.	Fieldwork, lab, project, Project Based Learning, Multidisciplinary Course, Industrial Training.	Project, Peer Assessment, report, assignments, logbook, Internal Panel, External Panel.

PLO9 **Personal Skills (PRS)**	Identify self-improvement initiatives and possibilities for career development or further education.	Multidisciplinary Course, Industrial Training, Project Based Learning, lab	Peer Assessment, report, logbook, Internal Panel, External Panel, lab work, presentations
PLO10 **Entrepreneurial Skills (ENT)**	Demonstrate the ability to identify new opportunities in dealing with issues related to land surveying with entrepreneurial mindset.	Project Based Learning, Multidisciplinary Course, discussions.	Written assignments.
PLO11 **Ethics and Professionalism Skills (ETS)**	Demonstrate the ability to perform tasks and make decisions in the field of land surveying ethically, professionally and with integrity.	Project, fieldwork, Multidisciplinary Course, Industrial Training.	Project, presentations, assignments, logbook, Internal Panel, External Panel.

15. Total credit hours to graduate	**90 credit hours**

16. Programme Structures and features, curriculum and award requirement

The programme is offered in full time and part time mode and based on a 2 Semester Academic Session with several subjects being delivered and assessed in each Semester.

Assessment (Refer to academic regulation):
a) Final examination not more than 50 % and course work not more than 60%
b) Skill acquisition:
    100% Industrial Training including industrial report and course work.

Award requirements:
•   Achieve a total of **90** credit hours with minimum Cumulative Point Average (CPA) of 2.00

Pass industrial training.

17. Our Uniqueness

•   This program is designed to equip students with engineering skills through hands-on laboratory and field works.
•   Practical training for one week known as Survey Camp programme (DSPL 3512).
•   Accreditation by the Board of Land Surveyors Peninsular Malaysia.

18. Career Prospects and Career Paths

Graduates of the program can work as:
a) Technical assistant for both government sector and private sector.
b) Continue for degree and professional courses to qualify as a Licensed Land Surveyor.

19. UTM Diploma ++ Programme

Students are given an opportunity to enroll in a non-credited short courses offered by university during semester break.

20. Facilities available

List of laboratories:
- Plan Drawing Studio.
- Data Processing Laboratory
- Photogrammetry and Cartography Laboratory.
- Surveying Laboratory.

List of other special facilities/equipments:
- Total Station
- Optical Theodolite
- Automatic Level
- Digital Level
- GNNS or Global Positioning System (GPS)
- Ground Penetrating Radar (GPR)
- Electromagnetic Locator (EML/PCL)
- Telescope
- QGIS
- Arc GIS
- SDRMAP
- CDS
- ERDAS
- AutoCAD

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
ULRS 1032	Integrity and Anti-Corruption	2
UHLB 1032	Introductory Academic English	2
DSPS 1132	Mathematic for Surveyor 1	2
DSPS 1733	Physics For Surveyors	3
DSPL 1103	Basic Surveying	3
DSPL 1203	Introduction to Geomatics	3
DSPL 1613	Computer Aided Design for Surveyors	3
	Total	**18**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
ULRS 1182* / UHLM 1122*	Appreciation for Ethics and Civilisation / Malay Language for Communication 1	2
UHLB 1042	Intermediate Academic English	2
DSPS 1142	Mathematic for Surveyor 2	2
DSPL 1424	Geodesy	4
DSPL 1133	Engineering Survey	3
DSPL 1413	Field Astronomy	3
	Total	**16**

Note:*Local students register for UHMS while International students register for UHLM.

YEAR 2 (SEMESTER 3)

Code	Course	Credit
DSPS 2043	Mathematic for Surveyor 3	3
DSPL 2233	Land Administration	3
DSPL 2154	Engineering Survey Technology	4
DSPL 2214	Cadastral Survey	4
DSPL 2623	Computer Programming	3
	Total	**17**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
ULRF 2XX2	Service Learning & Community Engagement Courses	2
DSPL 2323	Geographical Information System	3
DSPL 2633	Survey Adjustment	3
DSPL 2453	Satellite Positioning	3
DSPL 2333	Photogrammetry	3
	Total	**14**

YEAR 3 (SEMESTER 5)
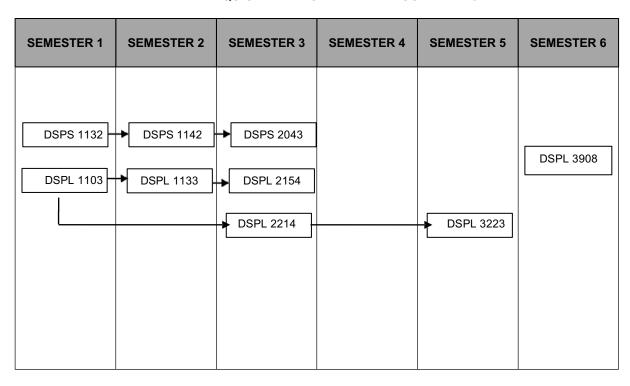
Code	Course	Credit
DSPL 3223	Cadastral Practice	3
DSPL 3143	Hydrographic Surveying	3
DSPL 3313	Cartography	3
DSPL 3363	Underground Utility Surveying	3
DSPL 3343	Remote Sensing	3
DSPL 3512	Survey Camp	2
	Total	**17**

YEAR 3 (SEMESTER 6)

Code	Course	Credit
DSPL 3908	Industrial Training	8
	Total	**8**
	Total Credits	**90**

PRE-REQUISITE DIPLOMA IN LAND SURVEYING

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6
DSPS 1132 →	DSPS 1142 →	DSPS 2043			DSPL 3908
DSPL 1103 →	DSPL 1133 →	DSPL 2154			
		DSPL 2214 →		DSPL 3223	

Student must pass all courses for Semester 1,2,3,4 & 5 before proceed to Semester 6.

SYNOPSIS OF CORE COURSES

DIPLOMA IN LAND SURVEYING

DSPL 1103: Basic Surveying

This course presents the principles of surveying and mapping. In particular, it emphasis on fundamental aspects which include surveying and mapping techniques, basic instruments, procedures, reference system and mapping, measurements of distance, bearing and angle and calculations of area and volume. The course features extensive use of process simulation tools through group as well as individual project works. At the end of this course students should execute traverse and levelling survey as well as the computation.

DSPL 1203: Introduction to Geomatics

This course covers the fundamental knowledge of land surveying and equips students with both theoretical for wider exposure and better understanding of the subject matters. Basic introductions to digital disciplines of photogrammetry and remote sensing, land and engineering surveying, geographic information systems, cartography, geodesy, hydrography, cadastral surveying, land information management and satellite surveying are delivered in this course. At the end of this course, students can get a widen imagination and view of the activities in land surveying fields that include integrating the acquisition, processing, analysis, display and management of spatial information.

DSPL 1133: Engineering Surveying (Prerequisite DSPL 1103)

This course presents the principles of engineering surveys. In particular, it emphasises on fundamental aspects which include theodolite traversing, levelling, detail surveys, horizontal curve, transition curve, vertical curve, mass-haul diagram and setting-out. With this, students should describe all the principles of engineering surveying at the end of this semester. The course features extensive use of process simulation tools through group as well as individual project works.

DSPL 1413: Field Astronomy

This course introduces students to the basic concept of astronomy and its application in surveying. It will expose to the concept of universe such as galaxy and solar system. The course will also emphasize the concept of the celestial sphere, its geometry, astronomical triangle and basic equations of the sphere triangle. The student also will expose to the types of instrument and the coordinates system, time: solar and sidereal day, mean solar time, apparent solar time, solar and star observation: azimuth, latitude, longitude of control stations used in cadastre surveying, geodesy and Falak Syarie (Islamic astronomy).

DSPL 1424: Geodesy

This course deals with basic concept and knowledge of geodesy. This will include history on determination of size and shape of the earth, fundamental principle of the geoid, sphere, ellipsoidal geometry, curves of the ellipsoid's surface, computation of geodetic coordinates, direct and inverse geodetic problems, geodetic datum (local and global datum), deflections of vertical. The coordinate systems and datum transformation. Coordinate systems used in Malaysia. Geodetic practice in Malaysia to improve student knowledge and skills on geodesy for positioning, mapping and other geomatics related applications. At the end of this course, students will be able to identify the surveying parameters (position, distance and angle) in a problem and be able to create the relationships between these parameters while correctly referencing it to the appropriate model of the shape of the earth. The student will gain an appreciation of the central role played geodesy in determination of the shape of the earth and mapping purposes.

DSPL 1613: Computer Aided Design for Surveyors

This course presents the principles of constructing surveying plan by using computer as an aided tool. In particular, it emphasises on developing drawing skills through exposure of computer aided drafting, 2D CAD, constructing survey plan, data merging, establishing working parameters, file management, data input and data presentation. The course features extensive use of process simulation tools through individual project works. At the end of this course, student should display basic drafting skill to produce land survey plan.

DSPL 2154: Engineering Surveying Technology
(Pre-requisite DSPL 1133)

This course presents the surveying technology instruments which include precise levels, high- precision theodolites, and electronic distance and angle measurement instruments. It emphasis on EDM principles, basic features of instruments, testing, adjustment and calibration, procedures and accuracies, Field to Finish, Digital Terrain Model and computer assisted on road design and earthworks. At the end of this course, student should be able to understand the EDM working principle and demonstrate proficiency in procedures of creating and processing data.

DSPL 2214: Cadastral Survey
(Pre-requisite DSPL 1103)

Introduction to the course of cadastral survey. The explanation on the cadastral survey and the importance of the survey to outside world. Cadastral survey includes the initial processes such as computing baseline, doing refixation, types of "batu ukur", demarcation, CRM system as well as the F2F process. The overall courses were based on the Buku Pekeliling that were distributed by JUPEM. At the end of this course, student will be able to apply cadastral surveying procedure by following the KPUP circulars.

DSPL 2233: Land Administration

Introduction to Land Administration in Malaysia, Land Resources Concept, State and Federal Land Management, Land Registration and Title, National Land Code, Cadastral Concept and Torrens System. In addition, students also will introduce to Cadastre System History, Land Administration Related Institutions and Agencies, Land Administration in Peninsular Malaysia, Sabah and Sarawak, computerised Land Registration System, Land Administration issues and Future Trends. At the end of this course student should understand various of laws related to land administration in Malaysia.

DSPL 2323: Geographical Information System

The course is designed to give the student a basic understanding of Geographic Information System or Land Information System. All related philosophies, theories and methodologies of GIS/LIS will be explained. Terminology, history of GIS/LIS, basic concepts, components of GIS/LIS, database, application and recent issues will be covered. At the end of this course students should be able to select and analyse contents of geographical data.

DSPL 2333: Photogrammetry

This course introduces students to the basic principles and elements of photogrammetry. Topics covered are: Aerial cameras and aerial photographs, Control points for photogrammetric mapping, flight planning. Stereoscopic view and stereo plotter. Orientation. Rectification. Orthophotographs. Introduction to digital photogrammetry. At the end of this course, students will be able to explain the basic principles of photogrammetry and relate the photogrammetry project.

DSPL 2453: Satellite Positioning

This course is designed to provide an understanding of theory and principles of Global Navigation Satellite System (GNSS), Global positioning system (GPS) together with their operation, application and differential GPS technology. The topics covered include: Overview on GNSS; GPS Application, Mission and Planning; GPS Post- Processing (Static and Fast Static) and Differential Mode; Real time Kinematic (RTK) and Virtual Reference Station; GPS Data Capture and Collection; Field and Office Procedures; Field Practice using Static, RTK and Differential Techniques. This course also covers the design and planning of static network and preparing for a GPS Field Survey. At the end of this course, students should be able know to operate the GPS equipment and apply the principles of GNSS.

DSPL 2623: Computer Programming

This course introduces the students to some basic theories and method of computer programming. It will emphasize on the general concepts and basic programming, data entry, data processing, data printing, subprogram such as keyboard, the use of loop, and print on the screen of file shape. The course will also provided problem solving exercises such as problem identification, designing of solution, translate the solution to programming language. At the end of this course, student should be able to use knowledge of computer programming to solve the land survey problems.

DSPL 2633: Survey Adjustment

This course introduces students to the principles, methodology and implementation of least square estimation (LSE) in land surveying. It will emphasize on the general concepts of LSE such as non-linear LSE, statistical analysis that include min, median, mode, residual, expectation, variance, covariance, coloration, quality of LSE, LSE and adjustment software, traverse adjustment, combined model, pre-analysis, solution of normal equation and sequential LSE. The course features extensive use of programming software as computational tool through group as well as individual project works. At the end of this course, student should be able to apply basic LSE methods in related land survey field.

DSPL 3223: Cadastral Practice
(Pre-requisite DSPL 2214)

Land Survey according to National land Code, title ownership, survey for reservation, party wall survey, subdivision, partition and amalgamation. In addition, students also will introduce to Surrender and realienation, Land acquisition. Strata survey, Stratum survey, coordinated cadastral system, Marine cadastre, Field to finish, Digital cadastral database, Cadastral data management system, multipurpose cadastral, issues and future trend in cadastral survey.

DSPL 3143: Hydrographic Surveying

This course presents the principles of hydrographic surveying. In particular, it emphasises on fundamental aspects which includes new technologies, measurements, preparation, system configuration, specification, procedures, data acquisition, data processing and data presentation. The course features extensive use of process simulation tools through group as well as individual project works. At the end of this course, students should be able to explain the knowledge of hydrographic survey and working process.

DSPL 3313: Cartography

This course will elaborate on the concept of map digitizing, what is the cartography all about. The importance of maps to people. The data and information uses to create and digitize the maps. There is generalisation, the principle, procedures, and data transformation. In this subject, they will also explain the types of map, map element, topographical and thematic maps, charts, plans, large and small scale maps. At the end of this course, student should be able to explain and apply some basic cartography theory to produce a map.

DSPL 3343: Remote Sensing

This course presents the principles of remote sensing emphasizing physical principles of the visible, infrared and microwave section of the electromagnetic spectrum, remote sensing platforms and sensors, data acquisition, storage and processing, image processing, image analysis, and remote sensing applications. The course features extensive use of process simulation tools through group as well as individual project works.

DSPL 3363: Underground Utility Surveying

This course introduces the utility mapping activities which includes the definition of utility mapping, geomatic roles in utility mapping, instruments, electrical and magnetic properties, antennas, signal measurement, survey methodology, modelling, data analysis and interpretation and database management. At the end of this course, students should be able to do a underground utility detection and analyze the radar image.

DSPL 3512: Survey Camp

The objective of this survey camp is to train student in the main aspect of land survey profession. This includes Engineering Surveying, Cadastral Surveying and Hydrographic Surveying. Engineering survey covers EDM traversing, ordinary levelling, precise levelling and detail surveys. Students are required to fulfil the standard procedures and regulations as applied by the private survey firms. Cadastral surveys involves close traverse, Survey datum. Measurement and booking for bearing and distance. Traverse survey and techniques to extend the line. Short lines measurement. Border demarcation. Hydrographic survey activities involve the establishment of sounding datum (LSD/CHART Datum), establishment of horizontal control point for DGPS positioning and bathymetric surveys. Total Station and DGPS positioning system are used for positioning and water depth is measured using single beam echo sounder. At the end of this course, student should be able to explain and organize survey and mapping work project.

DSPL 3908: Industrial Training
(Pre-requisite - all courses in Semester 1 - 5)

The student will undergo an industrial training for duration of 16 weeks. During that time the students will be attached to the government or private firm that are related to geomatic jobs and works.

DIPLOMA IN

—

URBAN AND REGIONAL PLANNING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Urban and Regional Planning
2. Final Award	Diploma in Urban and Regional Planning
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DSPN
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full Time and Part Time
11. Study Duration	Full Time: Minimum : 5 semester (2½ Years) Maximum : 8 semester (4 Years) Part Time: Minimum : 8 semester (4 Years) Maximum : 18 semester (9 years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	Part Time	Full Time	Part time
Normal	5	8	14	15
Short	2	3	8	9

12. Entry Requirement	**A) GENERAL REQUIREMENTS**
	For Sijil Pelajaran Malaysia (SPM) / Matriculation / Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) / Polytechnic Certificate / Sijil Kemahiran Malaysia (SKM) / Community College Certificate (SKK) / Equivalent Qualifications (MQF Level 3) Graduates
	Possess Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits including Bahasa Melayu and a pass in History in the SPM examination.
	For Equivalent Qualification Graduates (Malaysian Vocational Certificate (SVM)
	Possess the Malaysian Vocational Certificate (SVM) with at least a credit in Bahasa Melayu (Code 1104).
	For Equivalent Qualification Graduates (O Level)
	Possess Sijil Pelajaran Malaysia (SPM) with at least a credit in Bahasa Melayu / Bahasa Melayu July Paper.
	For Equivalent Qualification Graduates (APEL-A)
	Pass the APEL-A MQA assessment.
	B) SPECIFIC REQUIREMENTS
	Sijil Pelajaran Malaysia (SPM) / Matriculation Graduates
	Fulfil the General University Requirements; and **Specific Program Requirements**
	Obtain at least a **GRADE C** in **TWO (2)** subjects that are not yet counted for a credit AND **PASS** in English.

	OR
	For Sijil Tinggi Pelajaran Malaysia (STPM) Graduates
	● **Fulfil the General University Requirements; and**
	● **Specific Program Requirements**
	Possess the Sijil Tinggi Pelajaran Malaysia (STPM) with at least a Grade C **(GP 2.0)** in **TWO (2)** subjects.
	OR
	For Sijil Tinggi Agama Malaysia (STAM) Graduates
	● **Fulfil the General University Requirements; and**
	● **Specific Program Requirements**
	Possess the Sijil Tinggi Agama Malaysia (STAM) with at least a *Maqbul* **GRADE.**
	OR
	For Polytechnic Certificate Graduates
	● **Fulfil the General University Requirements; and**
	● **Specific Program Requirements**
	Possess a Polytechnic Certificate at MQF Level 3 related to the applied Diploma program with at least a CGPA of 2.00.
	OR
	For Sijil Kemahiran Malaysia (SKM) / Community College Certificate (SKK) / Equivalent Qualification (MQF Level 3) Graduates
	● **Fulfil the General University Requirements; and**
	● **Specific Program Requirements**

	Possess the Sijil Kemahiran Malaysia / Community College Certificate at MQF Level 3 related to the applied Diploma program with at least a CGPA of 2.00. **OR** **For Equivalent Qualification Graduates (Malaysian Vocational Certificate (SVM)** ● **Fulfil the General University Requirements; and** ● **Specific Program Requirements** Possess the Malaysian Vocational Certificate with an Academic CGPA ≥ 3.33; **AND** Vocational CGPA ≥ 3.67; **AND** Pass in English. **OR** **For Equivalent Qualification Graduates (O Level)** ● **Fulfil the General University Requirements; and** ● **Specific Program Requirements** Possess a GCE O Level qualification with at least a **GRADE C** in any **TWO (2)** subjects. **OR**

	For Equivalent Qualification Graduates (APEL – A)
	
	● **Fulfil the General University Requirements; and**
	● **Specific Program Requirements**
	
	Pass the APEL-A MQA assessment by meeting the requirements of the applied program field.
	
	### C) FOR INTERNATIONAL STUDENT
	
	1. **General Requirement**
	
	   Admission requirements for international students by country are based on MQA regulations.
	
	2. **Specific Program Requirement**
	
	   Minimum qualification with THREE (3) credits (Grade C) includes credit in any subject.
	
	3. **English Competency Requirement**
	
	   Must obtain: -
	   · A band score of 5.0 and above in IELTS; OR
	   · A score of 40 and above in TOEFL; OR equivalent.

13. Programme Educational Objectives:

A graduate of this programme should be able to:
- Competent, creative, critical and innovative in problems solving related to the field of urban and regional planning.
- Communicate effectively with leadership skills and self-confidence while striving for career development through life-long learning related to the field of urban and regional planning.
- Uphold ethical values and contribute to the needs of the organisation as well as society by participating in various related activities in the field of urban and regional planning.

14. Programme Learning Outcomes

(a) Technical Knowledge and Competencies

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 Knowledge (KW)	Articulate and discuss theories, concepts and principles in urban and regional planning field.	Lectures, active and cooperative, learning, project based learning, fieldwork, mini project, critique session, presentation, kahoot, studio projects, directed reading, project and problem based learning and industrial training	Tests, quizzes, examinations, individual and group assignments, presentations, individual and group studio projects, seminar paper and industrial training report
PLO2 Cognitive Skills (CG)	Apply knowledge and skills appropriately towards addressing urban and regional planning issues in diverse contexts.	Lectures, studio projects, critique sessions, mini project, fieldwork, problem based learning and industrial training, active learning, presentation, precedents study,	Tests, quizzes, examinations, individual and group assignments, presentations, individual and group studio projects and industrial training report

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO3 **Practical Skills (PS)**	Deftly conduct field works, analyses and evaluate issues in urban and regional planning using appropriate techniques, tools and technologies in sync with current institutional and professional practices.	Lectures, active learning, and cooperative learning, studio projects, critique sessions, fieldwork, project and problem based learning presentation, mini project, industrial training	Tests, quizzes, examinations, individual and group assignments, presentations, individual and group studio projects and industrial training report

(b) UTM Graduate Attributes

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO4 **Interpersonal Skills (IPS)**	Interact effectively and collaboratively in managing relationships among teams and within the organisations.	Individual and group studio projects and assignments, project and problem based learning, fieldwork, mini scale research, active learning industrial training	Industrial training report, studio projects, assignments, presentations and seminar paper
PLO5 **Communication Skills (CS)**	Demonstrate the ability to communicate effectively and confidently through written, visual and oral presentations to different audiences in urban and regional planning field.	Project based learning, active and cooperative learning, problem based learning, fieldwork, presentation, critique sessions and studio projects	Studio project, verbal presentations, individual and group studio projects, individual and group assignments
PLO6 **Digital Skills (DS)**	Apply a range of digital applications as well as to seek and process data related to work and studies in urban and regional planning field.	Studio projects, project and problem based learning directed reading, cooperative learning, fieldwork, assignments and discussions	Assignments and studio projects

PLO7 **Numeracy Skills** **(NS)**	Use and interpret routine and complex numerical and graphical or visual data in urban and regional planning field.	Lectures, active learning and mini project	Group studio projects and group assignments
PLO8 **Leadership, Autonomy &** **Responsibility** **(LAR)**	Demonstrate leadership criteria and be able to act as a responsible member of the group towards achieving common goals in urban and regional planning field.	Studio projects, assignments, projects, critique sessions, project based learning, fieldwork directed reading, mini project, and industrial training	Studio projects, industrial training report, seminar paper, learning log/diaries and group and individual assignments
PLO9 **Personal Skills** **(PRS)**	Identify self-improvement initiatives and possibilities for career development or further education.	Studio projects and assignments, fieldwork, active and cooperative learning, mini project, presentation, precedents study, project based learning, directed reading	Group studio projects and group assignments
PLO10 **Entrepreneurial Skills** **(ENT)**	Demonstrate the ability to identify new opportunities in dealing with issues related to the urban and regional planning field with an entrepreneurial mindset.	Lecture, Studio projects, assignments, active and cooperative learning, fieldwork, directed reading, lectures,	Projects and assignments
PLO11 **Ethics and** **Professionalism** **(ETS)**	Demonstrate the ability to perform tasks and make decisions ethically, professionally with integrity.	Studio projects, assignments, fieldwork, directed reading, lectures, active and cooperative learning, project based learning, mini scale research, group discussion, directed reading	Projects and assignments
15. Total Credit Hours to Graduate		**90 credit hours**	

16. Programme structures and features, curriculum and award requirements

This programme is offered on full-time mode and is based on a 3 Semester Academic Session with several courses being delivered and assessed in each semester. Assessment is based on final examination, coursework, project and practical training.

Assessment (Refer to UTM Academic Regulations):

a. **Lecture-based Courses** : Final examination is not less than 40% and coursework is not more than 60%.

b. **Skill-based Courses** : 100% coursework.

c. **Studio Courses** : 100% projects.
As a pre-requisite to the next level of studio courses, students should obtain a minimum **grade of D+** in studio courses.

d. **Skill Acquisition** : 100% Industrial Training including industrial report.

e. **Passing marks** : 40% for all courses.

Award requirements:
Students should achieve a total of 90 credit hours with minimum CPA of 2.00

17. Our Uniqueness

Students will go through for one (1) semester during Semester 7 of Industrial Training with established town planning firms around Malaysia in order to expose them to real working experience as an Assistant Town Planner.

18. Career Prospects and Career Paths
Graduates of the program can work as an Assistant Town Planner in government and private sector and in any related jobs in the urban and regional planning industry. The graduates may also further their studies for a Bachelor of Urban and Regional Planning or in the related fields at local or foreign universities

19. UTM Diploma++ Programme
Students are given an opportunity to enrol in short courses offered by the university during semester break such as Oral Communication, Third Language-Japanese, Mandarin and Arabic; Professional Talk, Career and Guidance Talks.

20. Facilities Available
List of laboratories: ● Computer Laboratory (Ms Excel, Access, SPSS, AutoCAD, Sketchup, Enscape, Adobe Illustrator, MapInfo, QGis, Global Mapper etc.) ● Language Laboratory ● Studio ● Gallery ● Resource Centre

21. Support for Students and Their Learning
Personal Support ● Academic Advisor ● Counselling **Infrastructure Support** ● Internet Access ● e-Learning ● Digital Library ● Health Care and Recreational **Financial Support** ● Perbadanan Tabung Pendidikan Tinggi Negara (PTPTN) ● Jabatan Perkhidmatan Awam (JPA) ● Yayasan Negeri Pusat Zakat Negeri ● Pusat Zakat Universiti

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
DSPN 1113	Introduction to Planning	3
DSPN 1123	Site Planning	3
DSPN 1133#	Information and Communications Technology in Planning	3
DSPN 1116	Studio 1: Basic Planning Design	6
	Total	**17**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
ULRS 1182*/ UHLM 1122*	Appreciation for Ethnics and Civilisation / Malay Language for Communication	2
UHLB 1042	Intermediate Academic English	2
ULRF 2XX2	Service Learning and Community Engagement Courses	2
DSPN 1213#	Planning Survey Techniques	3
DSPN 1223	Land Use Planning	3
DSPN 1226	Studio 2: Layout 1 (Housing)	6
	Total	**18**

Notes:*Local students register for ULRS while International students register for UHLM.

YEAR 1 (SEMESTER 3)

Code	Course	Credit
ULRS 1032	Integrity and Anti- Corruption Course	2
DSPN 1313	Urban Planning Topical Study 1	3
DSPN 1323	Planning and Environment	3
	Total	**8**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
DSPN 2113	Community Planning and Housing	3
DSPN 2123	Urban Design	3
DSPN 2133	Urban Engineering	3
DSPN 2143	Rural Planning and Development	3
DSPN 2116	Studio 3: Layout 2 (Mixed Development and Development Proposal Report)	6
	Total	**18**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPN 2213	Transportation Planning	3
DSPN 2223	Urban Economics	3
DSPN 2233#	Geo-Spatial Information In Planning	3
DSPN 2243	Planning Law and Practice	3
DSPN 2226	Studio 4: Urban Area Improvement Study	6
	Total	**18**

YEAR 2 (SEMESTER 6)

Code	Course	Credit
DSPN 2313	Urban Planning Topical Study 2	3
	Total	**3**

YEAR 3 (SEMESTER 7)

Code	Course	Credit
DSPN 3908	Industrial Training	8
	Total	**8**

Notes:# Laboratory Course.

PRE-REQUISITE
DIPLOMA IN URBAN AND REGIONAL PLANNING

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7
DSPN1116	DSPN1226		DSPN 2116	DSPN 2226		DSPN3908

*Notes: * Students must pass all studio courses in Semester 5 before proceed to Semester 7.*

SYNOPSIS OF CORE COURSE

DIPLOMA IN URBAN AND REGIONAL PLANNING

DSPN 1113: Introduction to Planning

This course provides students with a basic understanding about urban planning, with a focus on the definition of urban planning and the ability to practise good ethical values. Students are exposed to urban civilization from the beginning of the valley civilization to the era of Industrial Revolution. Planning theories and approaches are discussed by means of specific examples. History of the formation of the planning discipline is also discussed in this course. At the end of this course, students will be able to explain the evolution of town planning philosophy, rationale from the past to the present times, approaches and the future of sustainable urban planning including its challenges.

DSPN 1123: Site Planning

Site planning is an art in managing the physical environment which includes the expertise from other professions such as architect, engineer, urban planner and landscape architect. This course provides students with the knowledge of site planning theories with focus on sustainable development as a main holistic vision. In order to achieve sustainable development through physical form, students will learn on site planning process, site inventory, data collection methods, site analysis, SWOT analysis, sieve mapping technique, development suitability, development concept, concept plan making process, formulate ideas and design principles into spatial, detail design process and technical requirement. At the end of this course, students should be able to explain the fundamentals of site planning and demonstrate planning techniques in site analysis exercises (slope analysis and suitability analysis) and apply what was learned in this course into the studio work.

DSPN 1133: Information and Communications Technology in Planning

This course is designed to familiarise students with all aspects of the basic software of AutoCAD, Sketch up and Adobe Photoshop, with an emphasis on graphic applications to be used in urban and regional planning areas. Through this course, students will be able to create and present layout and compelling 2D and 3D models, and be competent in both software. Basic introduction to Adobe Photoshop also will be introduced to the students in order to help them use the medium to produce a master plan and good graphic presentation. By the end of this course, students will be able to operate the software proficiently to produce a clear and well CAD drawing, 2D and 3D modelling and apply it in urban and regional planning exercises and projects.

DSPN 1116: Studio 1 - Basic Planning Design
(Pre-requisite for DSPN 1226)
In this course, students will learn basic planning design and graphic communication techniques. For basic planning design, students will be introduced to various kinds of plans relevant to urban planning, including learning to prepare some of the plans, different types of planning guidelines and standards, and layout and master plan design. Students will be exposed to the site to enhance and develop a sense of appreciation and awareness of the environment. For graphic communication techniques, students will be introduced to technical letter writing/drawings and composition techniques. Students will be learning how to deliver information and ideas properly and interestingly. At the end of the course, students will be able to understand and apply appropriate basic planning design following the project's purpose. Students also will be able to grasp basic graphic communication techniques used in urban planning. By now, students will be confident to pursue this program and adapt to the studio learning environment.

DSPN 1213: Planning Survey Techniques
In this course, students will learn various planning survey techniques, such as physical and socio-economic surveys. The surveys are land use survey, building survey, housing survey, commercial survey, industrial survey, traffic survey, parking survey, socio-economics survey, and community planning survey. Students will be performing surveys at the site using appropriate planning survey forms to collect relevant data. After the surveys, students will analyse and interpret the data from the planning survey and relate it to urban and regional planning. At the end of this course, students will be able to explain different planning surveys in urban and regional planning and conduct planning surveys using appropriate planning survey forms.

DSPN 1223: Land Use Planning
In this course, students will learn the dynamics of land use and its interlinkages, land use planning theories and concepts, principles and processes, land use control mechanisms, and current and future land use planning concepts concerning climate change effect reduction and disaster risk reduction. At the end of the course, students will understand current and future land use planning and how it can contribute to sustainable development.

DSPN 1226: Studio 2: Layout 1 (Housing)
(Pre-requisite for DSPN 2116)
Students will be learning the basic principles of site planning, basic skills in designing a residential/housing layout, how to use the planning standards in designing a residential/housing layout and to do a master plan using appropriate software such as AutoCAD or Sketchup. At the end of the semester, each student will acquire knowledge and skills on how to produce a good residential/housing layout plan and how to make a good verbal and non-verbal presentation.

DSPN 1313: Urban Planning Topical Study 1
In this course students will be taught how to conduct research. This course is divided into two separate parts. Part 1, this course covered finding issues, literature search, designing questionnaire form and pilot survey. Students will be exposed to the process of doing research starting with identifying issues and problems, identifying problem statements along with literature review. Students need to incorporate the knowledge learned in the program to further sharpen their understanding. Theories and techniques in planning need to be practised in conducting research. At the end of this course, students are able to conduct research systematically according to the discipline of knowledge as well as prepare students to become a scholar.

DSPN 2113: Community Planning and Housing

In this course, students will learn community planning theories, principles, methods, community engagement initiatives, sustainable community planning, housing characteristics, home ownership, housing need, supply and demand, housing finance, and sustainable housing. At the end of this course, students will be able to explain the dynamic of community planning and housing concerning individual and community well- being.

DSPN 2123: Urban Design

The course offers students with a basic understanding of concepts, elements, principles, techniques, and approaches of urban design. The course also includes a field trip as an approach for enabling students to further understand the aspects of urban design. Exercises on acquiring suitability and designing urban areas are also provided.

DSPN 2133: Urban Engineering

In this course, students will learn the fundamentals of infrastructure and utility planning, namely road and highway, drainage systems, water supply systems, sewerage systems, electrical supply systems, natural gas systems, solid waste management systems, ICT, and telecommunication systems. Students will be introduced to green and smart infrastructures and utility practices worldwide. Students will be exposed to the knowledge and technical terms used by town planners and engineers in urban engineering. At the end of the course, students will understand the engineering aspects of urban planning and be able to apply the knowledge in planning a neighbourhood and a city

DSPN 2143: Rural Planning and Development

This course introduces the students with the conceptual basis of rural planning and development. The overview of rural planning and development in Malaysia and issues in rural areas namely rural poverty and rural-urban migration will be exposed to the student. The concepts, theory and development practice of rural settlement centres in Malaysia particularly the characteristics of traditional villages, new village (Chinese), FELDA and FELCRA will be emphasised. At the end of this course students will acquire knowledge and see the difference between rural planning and development in developing countries and developed countries.

DSPN 2116: Studio 3: Layout 2 (Mixed Development and Development Proposal Report)
(Pre-requisite for DSPN 2226)

The course exposes students to the preparation of a development proposal report (DPR) and layout plan as technical requirements in planning permission. The course content comprises data gathering, literature review, field survey, site analysis and preparation of concept plan with the consideration of development control elements such as zoning, use class order, plot ratio, density and other basic planning principles. It is also designed to develop the students' skills and creativity in layout design preparation by referring to the related and existing planning guidelines and standards in order to achieve an ideal and sustainable layout design. By the end of this course, students should be able to produce a standard layout plan and write a comprehensive development proposal report (DPR) according to the submission requirement.

DSPN 2213: Transportation Planning

This course aims to provide students with knowledge and skills to perform transportation data collection and traffic analysis. The course covers transportation models (trip generation, trip production, modal split and trip assignment), traffic studies, intersection analysis, level of service, parking study, origin-destination, transit planning, access management and traffic calming. At the end of this course students will be aware of the transportation planning elements in designing a layout plan in future.

DSPN 2223: Urban Economics

Economics plays an important part in policy planning and decision making at the highest level and at the local level. This course is adapted and applied directly to the planning and development of urban land use. Students will acquire the knowledge on the rationale of locational determinants of economic activity, the property investments and the development process. At the end of this course, students will be exposed to the real situation in urban economics with the emphasis on housing and commercial areas since these areas are the main land being used in the urban area.

DSPN 2233#: Geo-Spatial Information In Planning

The course offered the students with exposure to the fundamental concepts of spatial location that is tied with information as a tool in order to handle geographically-referenced data in urban and regional planning process. Through this course, students will learn, do research or acquire several techniques and approaches in Geographic Information System (GIS) for collecting, storing, retrieving, transforming and displaying spatial data from the current situations in urban and regional planning context for a particular set of purposes. Students will be involved in the basic GIS data development, using a hands-on approach by learning MapInfo software. By the end of the course, students will possess the basic GIS skills required by industry and able to operate the software proficiently to produce variety of plan.

DSPN 2243: Planning Law and Practice

In this course, students will learn basic planning laws and practices in urban and regional planning in Malaysia. The content covers the historical background of the Malaysian town and country planning system, the organisation of planning administrative authorities, the legal regulatory framework in town and country planning in Malaysia, the development plan system in Malaysia, development control, planning standards, guidelines, and manuals, application and processing of planning permission, One Stop Centre, dispute resolution, and professional planning bodies in Malaysia. At the end of the course, students can relate urban planning laws to urban planning practices in Malaysia

DSPN 2226: Studio 4: Urban Area Improvement Study
(Pre-requisite for DSPN 3908)

In this course, students will plan and redesign the urban land use activities and environment to make it more physically, economically, socially vibrant, and sustainable. Students will use theories and knowledge from site planning, urban design, urban engineering, traffic engineering, land use planning, urban economics, and planning survey techniques to accomplish the project given. At the end of the course, students will be able to explain critically the process and urban development elements related to the urban area improvement study and planning survey needed in this study. Students also will be able to propose solutions to improve urban area conditions.

DSPN 2313: Urban Planning Topical Study 2

In this course students will be taught how to conduct research. This course is part 2. In part 2, this course covered fieldwork, collecting data as long as key in the data, doing the analysis and combining the report from part 1. Students need to submit in the final report all from part 1 and part 2. Students need to incorporate the knowledge learned in the program to further sharpen their understanding. Theories and techniques in planning need to be practised in conducting research. At the end of this course, students are able to conduct research systematically according to the discipline of knowledge as well as prepare students to become a scholar.

DSPN 3908: Industrial Training
This course exposes the students to urban and regional planning practices and procedures. The objective is to strengthen the understanding of the theoretical principles, technical and design skills through practical experience. Students will be attached to urban planning firms or government departments for a period of 20 weeks. They should be able to function effectively in a team, seek information, and acquire contemporary knowledge, present information, and express ideas clearly, effectively and confidently. Students also have to explain in detail their daily task in the log book. The log book will cover tasks undertaken and experiences gained by the students during their period of training at the respective firms or departments. Student performance will be assessed by the agency supervisor and a visiting supervisor. At the end of industrial training, students should be able to demonstrate the application of techniques, skills and tools in urban and regional planning practices professionally and ethical

DIPLOMA IN

QUANTITY SURVEYING

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Quantity Surveying
2. Final Award	Diploma in Quantity Surveying
3. Awarding Institution	Universiti Teknologi Malaysia
4. Teaching Institution	Universiti Teknologi Malaysia
5. Professional or Statutory Body of Accreditation	Board of Quantity Surveyors Malaysia (BQSM)
6. Code of Programme	DSPQ
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full-time and Part Time
11. Study Duration	Full time: Minimum : 5 semester (2½ Years) Maximum : 8 semester (4 Years) Part time: Minimum : 8 semester (4 years) Maximum : 18 semester (9 years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	Part Time	Full Time	Part time
Normal	5	8	14	15
Short	2	3	8	9

12. Entry Requirement	A) GENERAL REQUIREMENTS
	1. Sijil Pelajaran Malaysia (SPM) / Matriculation / Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) / Sijil Politeknik / Sijil Kolej Komuniti (SKK) / equivalent qualification (Level 3 MQF) Obtain Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits inclusive of Bahasa Melayu and pass in History subject in SPM exam. **2. Equivalent Qualification (Sijil Vokasional Malaysia (SVM))** Possess Sijil Vokasional Malaysia (SVM) with at least credits in Bahasa Melayu (Code 1104) **3. Equivalent Qualification (O Level)** Possess Sijil Pelajaran Malaysia (SPM) with at least credits in Bahasa Melayu / Bahasa Melayu July Paper. **B) SPECIFIC REQUIREMENTS** **1. Sijil Pelajaran Malaysia (SPM) / Matriculation** • **Fulfill the University's General Requirements;** • **Specific Programme Requirement** Obtained at least **Grade C** in TWO (2) of the following subjects: • Mathematics at SPM level • ONE (1) from other subjects **AND** Passed in English subject at SPM level. **2. Sijil Tinggi Pelajaran Malaysia (STPM)** • **Fulfill the University's General Requirements;** • **Specific Programme Requirement**

Possess Sijil Tinggi Pelajaran Malaysia (STPM) with at least **Grade C** (GP 2.0) in TWO (2) in any subjects;
AND
Obtained at least **Grade C** in Mathematics at SPM level;
AND
Passed in English subject at SPM level.

3. **Sijil Tinggi Agama Malaysia (STAM)**
   - **Fulfill the University's General Requirements;**
   - **Specific Programme Requirement**

Possess Sijil Tinggi Agama Malaysia (STAM) with at least Maqbul (pass);
AND
Obtained at least **Grade C** in Mathematics at SPM level;
AND
Passed in English subject at SPM level.

4. **Sijil Politeknik**
   - **Fulfill the University's General Requirements;**
   - **Specific Programme Requirement**

Possess Sijil Politeknik in Level 3 MQF and related to the Diploma program applied for with at least a CGPA of 2.00;
AND
Obtained at least **Grade C** in Mathematics at SPM level;
AND
Passed in English subject at SPM level.

5. **Kolej Komuniti (SKK)/ equivalent qualification (Level 3 MQF)**
   - **Fulfill the University's General Requirements;**
   - **Specific Programme Requirement**

Possess Sijil Kolej Komuniti (SKK) / Certificate recognized as equivalent to it in Level 3 MQF and related to the Diploma program applied for with at least a CGPA of 2.00;
AND
Obtained at least **Grade C** in Mathematics at SPM level;
AND
Passed in English subject at SPM level.

6. **Equivalent Qualification (Sijil Vokasional Malaysia (SVM))**
   - **Fulfill the University's General Requirements;**
   - **Specific Programme Requirement**

Possess Sijil Vokasional Malaysia (SVM) in the field of Construction Technology and obtained at least **Grade C** in Mathematics;
AND
Obtained Academic CGPA ≥ 3.33;
AND
Obtained Vocational CGPA ≥ 3.67;
AND
Passed in English subject.

7. **Equivalent Qualification (O Level)**
   - **Fulfill the University's General Requirements;**
   - **Specific Programme Requirement**

Possess GCE O Level Qualification with at least obtained **Grade C** in any TWO (2) of the following subjects:
   - Mathematics at SPM level
   - ONE (1) from other subject

13. Programme Educational Objectives:

Educational Objectives for Diploma in Quantity Surveying programme are designed to ensure graduates are:

- Competent, creative and innovative in solving various problems in quantity surveying fields
- Communicate effectively with leadership skills and self-confidence while striving for career advancement through lifelong learning
- Uphold ethical values and contribute to the needs of organisation and society by participating in various related activities

14. Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 Knowledge (KW)	Articulate and discuss in a coherent manner on theories, concepts and principles of quantity surveying field	Lecture, Active learning, Problem-based learning	Test, Quiz, Tutorial Work, Studio Work, Academic Visit Report, Project, Homework, Final Exam, Industrial Training Report, Tender Table Document
PLO2 Cognitive skills (CG)	Apply knowledge and skills in the field of law, economics, contract administration, construction technology and measurement to solve issues related to quantity surveying field	Lecture, Active learning, Problem-based learning, Scenario-based learning, Project-based learning, Industrial Training	Test, Quiz, Tutorial Work, Studio Work, Academic Visit Report, Assignment, Project, Laboratory, Homework, Final exam, Industrial Training Report, Practical Evaluation Form, Work Programme, Preliminary Cost Estimate, Bills of Quantities

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO3 **Practical skills** **(PS)**	Demonstrate the skill in analysing and evaluating the issues in the field of quantity surveying and construction by using the techniques, tools and latest technology in line with institutional and professional practices	Lecture, Active learning, Cooperative learning, Project-based learning, Fieldwork, Industrial Training	Tutorial Work, Studio Work, Project, Homework, Practical Evaluation Form

(b) UTM Graduate Attributes

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO4 **Interpersonal Skills** **(IPS)**	Interact effectively and collaboratively in managing relationships in teams and within the organisations	Project-based learning, Industrial Training	Project, Logbook, Practical Evaluation Form
PLO5 **Communication Skills** **(CS)**	Demonstrate the ability to communicate effectively and confidently through written, visual, and oral presentations to various target groups	Presentation	Project, Presentation, Academic Visit Presentation
PLO6 **Digital Skills (DS)**	Use a range of digital applications to support study/work as well as to seek and process data related to the quantity surveying field	Lecture, Active learning, Presentation	Project, Presentation
PLO7 **Numeracy Skills (NS)**	Demonstrate skills to use and interpret routine and complex numerical as well as graphical / visual data in quantity surveying or related field	Project-based learning, Industrial Training	Tutorial Work, Assignment, Final Exam, Topical Study Report, Presentation
PLO8 **Leadership, Autonomy and Responsibility (LAR)**	Demonstrate leadership criteria and able to act as a responsible member of the group in achieving common goal	Problem based learning, Cooperative learning, Fieldwork, Industrial training	Project, Studio Work, Practical Evaluation Form, Presentation, Peer Assessment

PLO9 **Personal Skills** **(PRS)**	Identify self-improvement initiatives and possibilities for career development or further education	Active learning, Problem-based learning, Presentation, Industrial training	Presentation, Practical Evaluation Form, Logbook, Supervision, Topical Study Report, Tender Table Document
PLO10 **Entrepreneurial Skills** **(ENT)**	Demonstrate the ability to identify new opportunities in dealing with issues related to quantity surveying and construction field with entrepreneurial mindset	Problem-based learning, Project-based learning, Presentation	Project, Presentation, Company Profile
PLO11 **Ethics and Professionalism** **Skills** **(ETS)**	Demonstrate the ability to perform tasks and make decisions ethically, professionally and with integrity	Lecture, Active learning, Presentation, Industrial training	Test, Quiz, Tutorial work, Project, Final Exam, Academic Visit Report, Presentation, Practical Evaluation Form, Logbook
15. Total credit hours to graduate		**90 credit hours**	

16. Programme structures and features, curriculum and award requirements

This programme is offered on full-time mode and is based on a 3 Semester Academic year with several courses being delivered and assessed in each semester. Assessment is based on coursework and final examination.

Assessment (Refer to academic regulation):
a) Final examination not more than 50% and course work not more than 60%
b) Passing marks for all courses is 40%.
c) Skill acquisition:
    100% Industrial Training including industrial report

Award requirements:
Students should achieve a total of **90** credit hours with minimum CPA of 2.00

17. Our Uniqueness

a) Industrial Training for one (1) semester during Semester 7.
b) Accreditation by the Board of Quantity Surveyors Malaysia and Royal Institution of Surveyors Malaysia.

18. Career Prospects and Career Paths

Graduates of the programme
a) Can work as Technical Assistant / Assistant Quantity Surveyor both government sector and private sector.
b) May also continue to further their study in various disciplines related to Quantity Surveying such as Bachelor of Quantity Surveying, Bachelor of Construction, Bachelor of Building Surveying, Bachelor of Project Management etc in both local and overseas.

19. UTM DIPLOMA++ Programme

Students are given an opportunity to enroll in short courses offered by university during semester break such as Oral Communication, Third Language – Japanese, Mandarin and Arabic, Professional Talk and Career and Guidance Talk.

20. Facilities Available

List of laboratories:
a. Computer Laboratory (Buildspace Global Estimate, AutoCAD)
b. Language Laboratory
c. Civil Engineering Workshop
d. Studio

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
ULRS 1182*/ UHLM 1122	Appreciation for Ethics and Civilizations / Malay Language for Communication 1	2
DSPQ 1113	Construction Technology 1	3
DSPQ 1122	Construction Drawing	2
DSPQ 1133	Construction Materials	3
DSPQ 1213	Construction Measurement 1	3
DSPQ 1713	Construction Information Technology	3
	Total	**18**

Note:*Local students register for ULRS while International students register for UHLM.

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
DSPQ 1143	Construction Technology 2	3
DSPQ 1152	Building Services 1	2
DSPQ 1223	Construction Measurement 2	3
DSPQ 1312	Principles of Economics	2
DSPQ 1323	Building Economics	3
DSPQ 1722	Data Analysis	2
	Total	**17**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
ULRS 1032	Integrity and Anti-Corruption Courses	2
DSPQ 1162	Building Services 2	3
DSPQ 1233	Construction Measurement 3	2
	Total	**7**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
DSPQ 2173	Construction Technology 3	3
DSPQ 2243	Construction Measurement 4	3
DSPQ 2333	Cost Planning and Cost Control	3
DSPQ 2342	Cost Estimating 1	2
DSPQ 2413	Principles of Law, Contract and Tort	3
DSPQ 2513	Professional Practice 1	3
	Total	**17**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPQ 2253	Civil Engineering Measurement	3
DSPQ 2352	Cost Estimating 2	2
DSPQ 2424	Construction Law and Contract	4
DSPQ 2523	Professional Practice 2	3
DSPQ 2734	Final Year Project	4
ULRF 2XX2	Service Learning & Community Engagement Courses	2
	Total	**18**

YEAR 2 (SEMESTER 6)

Code	Course	Credit
DSPQ 2613	Project Management in Construction	3
DSPQ 2742	Structure and Survey	2
	Total	**5**

YEAR 3 (SEMESTER 7)

Code	Course	Credit
DSPQ 3908	Industrial Training	8
	Total	**8**
	Total Credits	**90**

PRE-REQUISITE

DIPLOMA IN QUANTITY SURVEYING

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7*
DSPQ 1113	DSPQ 1143	DSPQ 1162	DSPQ 2173		DSPQ 2613	DSPQ 3908
DSPQ 1122	DSPQ 1152		DSPQ 2333		DSPQ 2742	
DSPQ 1133			DSPQ 2413	DSPQ 2352		
DSPQ 1213 →	DSPQ 1223 →	DSPQ1233 →	DSPQ 2243 →	DSPQ 2253		
	DSPQ 1312			→ DSPQ 2734		
	DSPQ 1323		DSPQ 2342	DSPQ 2424		
DSPQ 1713	DSPQ 1722		DSPQ 2513	DSPQ 2523		

*Notes: * Student must pass all courses in Semester 1, 2, 3, 4, 5 and 6 before proceed to Semester 7.*

SYNOPSIS OF CORE COURSES

DIPLOMA IN QUANTITY SURVEYING

DSPQ 1113: Construction Technology 1

This course is to develop an understanding of knowledge in construction technology. Students will become familiar with common construction components and processes. This course covers site preparation, excavation work, foundation, frame, floor and wall. At the end of this course, students will be able to use the diagram produced and relate it with the construction process. This course also provides the platform to develop students' communication skills.

DSPQ 1122: Construction Drawing

This course will cover the theoretical and practical aspects of technology drawing practices including the process and tools of the production of the construction drawing manually . Then the student also must be able to recognise and read all types of construction drawing. At the end of this course, students also have to create a simple model using construction drawing software.

DSPQ 1133: Construction Materials

The aim of this course is to develop an understanding of construction materials. It is intended to enable students to be conversant with the building materials. This course will cover the details on construction materials including classification, sources, manufacturing process, test involved and evaluation on appropriateness of construction materials. The course will also provide a platform to implement hands-on applications through workshop activities and to develop students' communication skills.

DSPQ 1213: Construction Measurement 1

The aim of this course is to equip the students with the knowledge and skills of measurement and quantification of building works to complement the needs of the profession. This course introduces the concept and principles of measurement and the quantification of building works using simple mathematics and its relationship with the preparation of tender documents and costing. The course will focus on the application of the principles of measurement and the introduction to Malaysian Standard Method of Measurement (SMM). At the end of the course, students will be able to apply the principles of measurement using current SMM.

DSPQ 1713: Construction Information Technology

This course is designed to provide an introduction to computers, basic programming, and applications software. Areas of study include computer components, problem solving like macro and basic programming. It also provides students with experience in using a range of computer software packages and helps them develop skills in the choice and use of computing tools for various tasks. The course also enables students to seek information from a variety of sources. This course also provides the platform to develop student's entrepreneurial skills.

DSPQ 1143: Construction Technology 2

This course is to develop an understanding of knowledge in construction technology. Students will become familiar with common construction components and processes. This course covers staircase, roof including roof cover, door and window, finishes, built-in fitment, temporary works and demolition and alteration works. At the end of this course, students will be able to use the diagram produced and relate it with an explanation of the construction process. This course also provides the platform to develop students' communication skills.

DSPQ 1152: Building Services 1

This course will include the study and analysis on factors affecting the building environment, in terms of heat, moisture, sound and lighting and also discuss the utility services installed inside of building which comprises of water supply installation, soil and waste disposal system, electrical and lighting installation, gas supply installation, lightning protection system and communication system. At the end of this course, students will be able to use the diagram to produce and relate it with the building services process. This course also provides the platform to develop students' communication skills.

DSPQ 1223: Construction Measurement 2
(Pre-requisite DSPQ 1213)

The aim of the course is to equip the students with the knowledge and skills of measurement and quantification of building especially for substructure works to complement the needs of the profession. This course will further develop the knowledge, understanding and the skill of measurement of construction works according to the current SMM for Building Works for the purpose of preparation of bills of quantities and estimating. At the end of the course, students will be able to apply the principles of measurement and quantification of low-rise building works by using measurement software.

DSPQ 1312: Principles of Economics

This subject will include the study and discussion on general principles of economics; micro and macroeconomics, including its application in the local and global construction industry. Students will be able to apply the principles in microeconomic regarding market supply and demand as well as understanding the macroeconomic situation and behaviour surrounding the nation like national income and economic control procedures implemented by the government. Students also can adapt the economic knowledge to construction industry.

DSPQ 1323: Building Economics

The aim of this course is to develop students' knowledge and understanding of the philosophy and concept of building economics in relation to design economics and building morphology, cost implications of site and construction methods as well as other influencing factors. The course also covers the identification and application of different types of cost information such as cost data and cost index including the introduction to development economics. At the end of this semester, student should be able to demonstrate the relationship between different design economics and explain it's influence on building and construction costs.

DSPQ 1722: Data Analysis

This course provides the knowledge and skills for students which cover the process and techniques of data analysis such as sampling, data collection and data presentation.

DSPQ 1162: Building Services 2

This course will cover various advanced building services systems in buildings which include fire prevention and fighting systems, mechanical conveyors, ventilation and air conditioning, building automation: and also, services systems at community level including sewage disposal system, water supply and reticulation system, electricity generation and supply system. At the end of this course, students will be able to use the diagram produced and relate it with the building services process. This course also provides the platform to develop students' communication skills.

DSPQ 1233: Construction Measurement 3
(Pre-requisite DSPQ 1223)

The aim of the course is to equip the students with the knowledge and skills of measurement and quantification of building works especially for superstructure works to complement the needs of the profession. This course will further develop the knowledge, understanding and the skill of measurement of construction works according to the current SMM for Building Works for the purpose of preparation of bills of quantities and estimating. The course will focus on the application of the principles of measurement and quantification of low-rise building works. At the end of the course, students should be able to apply principles of measurement and quantification of low-rise building works by using measurement software.

DSPQ 2173: Construction Technology 3

This course is to develop an understanding of knowledge in construction technology. Students will become familiar with common construction components and processes. This course covers the aspects of design principles, the process of construction, fixing, assembling of the various elements and components of external works. In addition, this course also covers industrialize building system, green building and rail track construction. At the end of this course, students will become familiar with common construction components and processes. The students also will be able to use the diagram produced and relate it during explaining the construction process of external works.

DSPQ 2243: Construction Measurement 4
(Pre-requisite DSPQ 1233)

The aim of the course is to equip the students with the knowledge and skills of measurement and quantification of building works especially for architectural, external works, preliminaries, provisional and prime cost sum to complement the needs of the profession. This course will further develop the knowledge, understanding and the skill of measurement of construction works according to the current SMM for Building Works for the purpose of preparation of bills of quantities and estimating. The course will focus on the application of the principles of measurement and quantification of low-rise building works. At the end of the course, students should be able to apply principles of measurement and quantification of low-rise building works by using measurement software.

DSPQ 2333: Cost Planning and Cost Control

The aim of this course is to develop students' knowledge and understanding of the philosophy and concept of building economics in relation to costing and price analysis. This course also provides the students with the knowledge and skills in preparing cost estimates for simple buildings based on the various methods and techniques. By identifying the factors that influence the cost, the students will be able to determine the appropriate cost data and its sources to be applied in the estimates. This course covers all aspects of cost management during pre-construction and construction stages of project development including project cash flow, whole life cycle cost and earned value management.

DSPQ 2342: Cost Estimating 1

The aim of this course is to develop students' knowledge and understanding on the principles, techniques, and systematic procedures of building up rates. This course is designed to provide students with the knowledge and skills in building up rates and prices of various items for structural building works. By identifying the factors that influence the cost, the students will be able to determine the appropriate cost data and its sources to be applied in pricing of works.

DSPQ 2413: Principles of Law, Contract and Tort

The aim of this course is to provide students with the basic principles of law. The objectives are to introduce the principles of the Malaysian Legal System, to elucidate certain specified principles of the Law of Tort and to instill a good understanding of the principles of the Law of Contract. This course is divided into three (3) parts namely: The Malaysian Legal System, Law of Tort and Law of Contract. The course also relates these principles to relevant construction situations.

DSPQ 2513: Professional Practice 1

This course introduces the overall quantity surveying program and the program outcomes, the nature of the construction industry, and the roles and responsibilities of the various professionals involved in the construction team. The course also highlights the relevant professional boards and institutions relating to the construction industry and quantity surveying practice. Topics covered also include project development process, the building team, financial institutions, contractors and suppliers' organisations; professional boards and institutions; roles of quantity surveyors at pre and post contract stages, and professional ethics.

DSPQ 2253: Civil Engineering Measurement
(Pre-requisite DSPQ 2243)

The aim of the course is to equip the students with the knowledge and skills of measurement and quantification of external works to complement the needs of the profession. This course will further develop the knowledge, understanding and the skill of measurement of construction works according to the current SMM for Building Works and civil engineering works using current CESMM for the purpose of preparation of bills of quantities. The course will focus on the application of the principles of measurement and quantification of infrastructure and high rise and more complex construction works .At the end of the course, students should be able to apply principles of measurement and quantification external and civil works by using measurement software.

DSPQ 2352: Cost Estimating 2

The aim of this course is to develop students' knowledge and understanding on the principles, techniques, and systematic procedures of building up rates. This course is designed to provide students with the knowledge and skills in building up rates and prices of various items for architectural building works, services, and external works.

DSPQ 2424: Construction Law and Contract

The aim of this course is to introduce the students to the important clauses in construction contracts specifically for PWD 203A and PAM 2018 Standard Form of Contract. The objectives are: (i) to explain to the students the principles and the implications of the main terms of construction contract, (ii); to highlight the roles, duties and liabilities of the parties involved in the construction contracts. The main standard forms of contract referred to in this course are those currently used locally and internationally. At the end of this course, the students are expected to be able to analyse legal and ethical issues that arise in construction contracts.

DSPQ 2523: Professional Practice 2

This course introduces the process and procedures at pre and post contract stage. This course also aims to develop knowledge and understanding of the terms and conditions in standard forms of construction contract. It further enhances students' skills, competencies, and ethical and professional values in interpreting the terms and conditions into administrative process and procedures. The course consists of two main parts: part one relates to pre-contract processes that include tendering, documentation and contract documents; part two covers works related to post contract administration. This course covers quantity surveying practices based on currently applicable Malaysian construction.

DSPQ 2734: Final Year Project
(Pre-requisite DSPQ 2243)

The aim of the course is to expose the students to the real practice of preparation of tender table document. This course will further provide the students the exposure and experience in the process of preparation of a complete Tender Document for a specified construction project based on the current practice together with the priced tender document. The course will focus on the application of the principles of measurement and quantification of construction works in the preparation of a complete tender document for residential and/or medium rise commercial buildings. The course also provides the platform to develop students' communication and leadership skills, and the ability to work effectively as a team member to achieve mutual objective.

DSPQ 2613: Project Management in Construction

This course provides knowledge and develops understanding of project management in construction including the current changes and developments. It emphasises the elements of organisation, decision making, planning and control in construction project management. It also serves as a platform to develop students' skills and competencies in management. The course also provides the environment to develop student's ability to create good relationship, interaction with colleague and work effectively with other people to achieve mutual objective.

DSPQ 2742: Structure and Survey

This course presents the basic knowledge of structure and land surveying. It emphasises types of structure, basic principle of structure for single beams, trusses, and columns. This course also introduces the concept and practical skills of land surveying in building construction projects. It will emphasise on the layout and control of buildings, use and care of surveying instruments such as tape, total station or theodolite and levelling instrument, linear measurement, trigonometry, directions, angles in surveying calculations, errors and computations of coordinate, levelling, areas and volumes. Students will expose to set out building structures, earthworks, and contour

DSPQ 3908: Industrial Training
(Pre-requisite - all courses in Semester 1 - 6)
This course exposes the students to pre-contract and post-contract practice and procedures of quantity surveying practices. Pre-contract practices will cover the tendering process, cost analysis. While post-contract practices will cover the payment and claim. Students will be attached to quantity surveying firms or government departments for sixteen (16) weeks. At the end of the industrial training, students should be able to demonstrate the application of techniques, skills and tools in quantity surveying practices professionally and ethically and identify quantity surveying working procedures. They should also be able to function effectively in a team, seek information and acquire contemporary knowledge, present information and express ideas clearly, effectively and confidently.

DIPLOMA IN

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ARCHITECTURE

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Architecture
2. Final Award	Diploma in Architecture
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DSPR
7. Language(s) of Instructional	Bahasa Melayu and English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-govern
10. Study Scheme (Full Time/Part Time)	Full time and Part time
11. Study Duration	Full time: Minimum : 5 semester (2 ½ years) Maximum : 8 semester (4 years) Part time: Minimum : 8 semester (4 years) Maximum : 18 semester (9 years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	**Part Time**	**Full Time**	**Part time**
Normal	5	8	18	19
Short	0	4	0	9

12. Entry Requirement	**A. GENERAL REQUIREMENTS**
	1. Obtain a pass in Sijil Pelajaran Malaysia (SPM) / Matriculation / Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) / Sijil Politeknik / Sijil Kolej Komuniti (SKK) / equivalent qualification (Level 3 MQF) Obtain Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits inclusive of Bahasa Melayu and pass in History subject in SPM exam. 2. Equivalent Qualification (Sijil Vokasional Malaysia (SVM)) Possess Sijil Vokasional Malaysia (SVM) with at least credits in Bahasa Melayu (Code 1104). 3. Equivalent Qualification (O Level) Possess Sijil Pelajaran Malaysia (SPM) with at least credits in Bahasa Melayu / Bahasa Melayu July Paper. 4. Equivalent Qualification (APEL-A) Pass APEL-A MQA assessment **B. SPECIFIC REQUIREMENTS** **1. Sijil Pelajaran Malaysia (SPM) / Matriculation** • **Fulfill the University's General Requirements; and** • **Specific Programme Requirement** Obtained at least **Grade C** in any **TWO (2)** subjects **AND** Passed in English subject at SPM level. **AND** Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university. **2. Sijil Tinggi Pelajaran Malaysia (STPM)** • **Fulfill the University's General Requirements; and** • **Specific Programme Requirement**

Possess Sijil Tinggi Pelajaran Malaysia (STPM) with at least **Grade C** (GP 2.0) in any subjects;

AND
Passed in English subject at SPM level.

AND
Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university.

3. Sijil Tinggi Agama Malaysia (STAM)

- **Fulfill the University's General Requirements; and**
- **Specific Programme Requirement**

Possess Sijil Tinggi Agama Malaysia (STAM) with at least Maqbul (pass);

AND
Passed in English subject at SPM level.

AND
Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university.

4. Sijil Politeknik

- **Fulfill the University's General Requirements; and**
- **Specific Programme Requirement**

Possess Sijil Politeknik in Level 3 MQF and related to the Diploma program applied for with at least a CGPA of 2.00;

AND
Passed in English subject at SPM level.

AND
Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university.

5. Kolej Komuniti (SKK)/ equivalent qualification (Level 3 MQF)

 • **Fulfill the University's General Requirements;and**
 • **Specific Programme Requirement**

Possess Sijil Kolej Komuniti (SKK) / Certificate recognized as equivalent to it in Level 3 MQF and related to the Diploma program applied for with at least a CGPA of 2.00;

AND
Passed in English subject at SPM level.

AND
Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university.

6. Equivalent Qualification (Sijil Vokasional Malaysia (SVM))

 • **Fulfill the University's General Requirements;and**
 • **Specific Programme Requirement**

Possess Sijil Vokasional Malaysia (SVM) in the field related to the Diploma program applied;

AND
Obtained Academic CGPA ≥ 3.33;

AND
Obtained Vocational CGPA ≥ 3.67;

AND
Pass in English subject

AND
Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university.

	7. **Equivalent Qualification (O Level)**
	• **Fulfill the University's General Requirements;and** • **Specific Programme Requirement** Possess GCE O Level Qualification with at least obtained **Grade C** in any **TWO (2)** subjects; **AND** Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university.
	8. **Equivalent Qualification (APEL-A)**
	• **Fulfill the University's General Requirements;and** • **Specific Programme Requirement** Pass the APEL – A MQA assessment by meeting the requirements of the applied program area; **AND** Candidates for Diploma in Architecture programme need to pass a test and an interview carried out by the university.

13. Programme Educational objectives:

A graduate of this programme should be able to:
- Be competent, creative, critical and innovative in problem solving in the field of architectural fields.
- Communicate effectively with leadership skills and self-confidence while striving for career development through life-long learning related to the architecture field.
- Uphold ethical values and contribute to the needs of the organization and society by participating in various related activities in the architecture field.

14. Programme Learning Outcomes (PO)

(a)**Technical Knowledge and Competencies**			
Programme Learning Outcomes (PO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO1 Knowledge and Understanding (KW)	Articulate and discuss knowledge, principles and theory in relation to culture, environment, technology and practice in architecture and other related field.	Studios, critical discussion sessions, lectures, tutorials, seminars, site visits, visits to agencies and architectural firms, workshop, directed reading and independent research.	Examination, test, quiz, assignment, drawings, oral and visual presentations, report, seminar presentations, discussions, problem-based exercise, group works, independent projects, examinations portfolio review.
PLO2 Cognitive Skills (CG)	Apply architecture or related knowledge, skills, principles and theory for identifying, analyzing, composing, creating, designing, developing, formulating, integrating, synthesizing, solving and visualizing.	Studios, critical discussion sessions, lectures, tutorials, seminars, site visits, laboratory works, assignments, projects and problem-based learning.	Examination, test, quiz, assignment, drawings, oral and visual presentations, report, seminar presentations, discussions, problem-based exercise, group works, independent projects, examinations portfolio review.
PLO3 Practical Skills (PS)	Conduct field works and using architectural or related skills in design, communication, technical as well as construction using the techniques, tools, and latest technology in line with institutional and professional practices.	Studios, critical discussion sessions, workshop, cooperative and problem-based learning.	Design projects (research process and drawings), visual and oral presentations, seminar presentations, problem-based exercise, workshops, fieldworks, reports, practical training reports, discussions, design tasks, quizzes, examinations portfolio review, internal and external examinations.

(b) UTM Graduates Attributes			
Programme Learning Outcomes (PLO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO4 **Interpersonal Skills (IPS)**	Interact effectively and collaboratively in managing relationships in teams and within the organizations in architecture and related field.	Studio projects, individual projects, group projects, field work, critical discussion sessions, independent research, tutorial, seminar research and presentations, lectures, laboratory works, cooperative and problem-based learning.	Design projects (research process and drawings), visual and oral presentations, seminar presentations, problem-based exercise, workshops, fieldworks, reports, practical training reports, discussions, design tasks, examinations, portfolio review, peer assessment.
PLO5 **Communication Skills (CS)**	Demonstrate ability to communicate effectively and confidently through written, visual, and oral presentations to different audiences in architecture field.	Studio projects, individual projects, group projects, independent research, tutorial, seminar research and presentations, critical discussion sessions, lectures, laboratory works, cooperative and problem-based learning.	Graphical, multimedia and oral presentations, multimedia simulation, architectural drawings, technical drawing, design project presentation, assessment crits, portfolio review, design workshops and seminar presentations.
PLO6 **Digital Skills (DS)**	Use a range of digital applications to support study/work as well as to seek and process data related to architecture field.	Lectures, critical discussion sessions, project supervision, lectures, tutorials, seminars, design workshops, site visits, case studies, laboratory works, directed reading, simulation exercise, computer aided exercise, individual research, problem-based learning.	Design project, design reports, audio visual and oral presentations, peer assessment, design tasks, laboratory report, independent project report, group assignments, group projects.

PLO7 **Numeracy Skills (NS)**	Demonstrate skills to use and interpret routine and complex numerical as well as graphical / visual data in architecture or related field.	Lectures, tutorials, seminars, independent research projects, group research projects, laboratory works, problem-based learning, design workshops, innovative design projects and architectural case studies.	Independent project report, group assignments, group projects, test, examination, participation observation.
PLO8 **Leadership, Autonomy and Responsibility (LAR)**	Demonstrate leadership criteria and be able to act as a responsible member of the group towards achieving common goal.	Design projects, lectures, independent research projects, group research projects, site visits, case studies, architectural forums, design workshops and design studio.	Independent project report, group assignments, group projects, test, examination, participation observation.
PLO9 **Personal Skills (PRS)**	Identify self-improvement initiatives and possibilities for career development or further education.	Studio works, seminars, discussions, lectures, tutorials, seminars, independent research projects, group research projects, laboratory works, problem-based learning.	Independent project report, group assignments, group projects, test, examination, participation observation.
PLO10 **Entrepreneurial Skills (ENT)**	Demonstrate the ability to identify new opportunities in dealing with issues related to architecture and related field with entrepreneurial mindset.	CPD (continuous professional development) projects, GSD (generic skill development) projects, management project, design studio, competition, independent research project, group research projects, developing case studies, design and design workshop, architectural forum and seminars.	Attitude observation, report, design assignment, CPD/GSD point scheme, design solutions, assignments, test, examinations, presentation and interviews.

PLO11 **Ethics and** **Professionalism** **(ETS)**	Demonstrate the ability to perform tasks and make decisions in architecture field ethically, professionally and with integrity.	Design projects, independent research projects, group research projects, site visits, case studies, architectural forums, design workshops and design studio.	Design assignment, CPD/GSD point scheme, project report and presentations, test, examinations, effectiveness observation, participation observation, role play observation, peer assessment, votes, awards and recognition.

15. Total credit hours to graduate	**90 credit hours**

16. Programme structures and features, curriculum and award requirements

The programme is offered in a full time mode and based on a 2 Semesters Academic Year with several subjects being delivered and assessed in each semester.

Assessment (Refer to UTM's academic regulation)
i. Lecture-based Courses: Final Examination (not less than 40%) Course work
ii. Skill-based Courses: 100% Course work
iii. Studio Courses: 100% Projects
As a pre-requisite to the next level of studio courses, students should obtain a minimum grade of D+ in Studio courses.

Award requirements:

To graduate, a student should obtain a total of 90 credit hours with minimum CPA of 2.00

17. Our Uniqueness

a. A strategic location in Kuala Lumpur adds value to the programme in terms of accessibility to expertise and references.
b. Programmes and courses offered in UTM KL promote interaction across the multi-disciplined students.
c. Emphasizing on character building other than the creative design ability (teamwork, leadership, confidence, oratory skills).

18. Career Prospects and Career Paths

Graduates of the programme:
a. Are eligible to work as Assistant Architect, Architectural Technician and Designer in public and private sectors, or
b. May further their studies to degree and professional courses to qualify as an architect locally and abroad.

19. UTM Diploma++ Programme

Students are given an opportunity to enroll in short courses offered by university during semester break such as Oral Communication, Third Language – Japanese, Mandarin and Arabic, Professional Talk and Career and Guidance Talk.

20. Facilities Available

a. Studio
b. Computer and CAD Laboratory
c. Workshops (Concrete, Timber and Steel)
d. Gallery
e. Resource Center

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
ULRS 1182*/ UHLM 1122*	Appreciation for Ethics & Civilisation/ Malay Language for Communication 1	2
DSPR 1116	Fundamental Design 1	6
DSPR 1212	Architectural Communication	2
DSPR 1313	Architecture History & Theory	3
DSPR 1413	Structure & Construction 1	3
	Total	**18**

Note:*Local students register for ULRS while International students register for UHLM.

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
ULRS1032	Integrity and Anti-Corruption Course	2
DSPR 1126	Fundamental Design 2	6
DSPR 1222	Graphic & Digital Communication	2
DSPR 1323	Theory of Design	3
DSPR 1423	Construction Practice	3
	Total	**18**

YEAR 2 (SEMESTER 3)

Code	Course	Credit
DSPR 2138	Design 1	8
DSPR 2232	Working Drawing 1	2
DSPR 2333	Building Services 1	3
DSPR 2433	Architectural Heritage of Malaysia	3
DSPR 2532	Basic Architectural Computing	2
	Total	**18**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
ULRF 2XX2	Service Learning & Community Engagement Courses	2
DSPR 2148	Design 2	8
DSPR 2242	Working Drawing 2	2
DSPR 2343	Environmental Science & Sustainability	3
DSPR 2443	Structure & Construction 2	3
	Total	**18**

YEAR 3 (SEMESTER 5)

Code	Course	Credit
DSPR 3158	Design 3	8
DSPR 3253	Working Drawing 3	3
DSPR 3353	Building Services 2	3
DSPR 3452	Architectural Leadership & Entrepreneurship	2
DSPR 3552**	Design Competition	2
DSPR 3652**	Design Portfolio	
	Total	**18**
	Total Credits	**90**

Note:
*Local students will enroll for ULRS while international students will enroll for UHLM.
** Elective course options

PRE-REQUISITE DIPLOMA IN ARCHITECTURE

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5
DSPR 1116 →	DSPR 1126 →	DSPR 2138 →	DSPR 2148 →	DSPR 3158
DSPR 1212		DSPR 2232	DSPR 2242	DSPR 3253
DSPR 1313	DSPR 1222		DSPR 2343	DSPR 3353
DSPR 1413	DSPR 1323	DSPR 2333		DSPR 3452
	DSPR1423	DSPR 2433	DSPR 2443	DSPR 3552
		DSPR 2532		DSPR 3652

SYNOPSIS OF CORE COURSES

DIPLOMA IN ARCHITECTURE

DSPR 1116: Fundamental Design 1
Fundamental Design 1 is an introduction to the architectural primary design elements and principles, basic research, idea development, form making, and crafting skill. The studio program provides theoretical information, knowledge and practices of architectural design process. Throughout the semester, students will have to go through several projects, along with exercises. The first project includes introductory exercise on the design basic element; points, lines, plane, volume, through the hands-on exercises in the form of drawings and model making. Other than that, the projects would involve ideation, inspiration and conceptual development as well as introduction of basic design structure. Exercises and task will be given to the students to develop the student's skill in manipulating, demonstrating and articulate the basic design knowledge. The learning methods include crit session, design process, precedent study, architectural illustration and academic trip. This course emphasizes on the
conventional free-hand skills in technical presentation as well as creative visual images.

DSPR 1126: Fundamental Design 2
(Pre-requisite DSPR 1116 Fundamental Design 1)
The Fundamentals 2 design is to strengthen students' understanding of design elements and principles, theory of design, environment, technology, and introduction to site inventory and analysis, landscape design, construction materials, indoor and outdoor design. Throughout the semester, students need to perform architectural or related skills in designing and developing design. Students need to show ideas verbally and visually clearly, listen actively and respond accordingly, as well as use a variety of media in board and model presentations. This exercise also looks to develop students' thinking for alternative ideas and creative solutions. There are 3 stages of the learning process. First, introductory exercise on site inventory and analysis. Second, indoor structure design and materials and third, landscape and outdoor structure design and materials. These exercises and tasks are to develop the students skill in manipulating, demonstrating and articulating the basic design knowledge. Learning includes workshop, seminar, trip, visit, material experiment; structural, form expression, design process, design documentation and architectural illustration. This course emphasizes on the conventional free-hand skills in technical presentation as well as creative visual images and model making.

DSPR 2138: Design 1
(Pre-requisite DSPR 1126 Fundamental Design 2)
This Design 1 is a continuation from Fundamental Design 2 studio where the students will undergo several groups and individual exercises including site inventory, case study analysis and end up with dwelling design as well as understanding of public, semi-public, semi-private and private spaces. This exercise is to enhance the students' skills to identify and explore their architecture knowledge and ability to explain various basic designs to more complex designs that emphasize ergonomics and anthropometrics. Learning includes workshop, seminar, trip, visit, construction & materiality, material experiment; customer response, structural, form expression, design process, design documentation and architectural illustration. This course emphasizes on the transition from manual to digital skills in technical presentation as well as creative visual images and laser cut model making which all of these are able to display during critique sessions and develop their ideas throughout the semester.

DSPR 2148: Design 2
(Pre-requisite DSPR 2138 Design 1)
This course is the continuation from DDWR 2137 Design 1. In this course, students are to be introduced to a small commercial building design in an urban/suburban setting (Maximum 2 storeys). Students need to show sensitivity to social, environmental and contextual issues responding to the site. Students will undergo several groups and individual exercises including site inventory, 2 to 3 intermediate to corner shop houses/offices lot façade design and end up with medium small commercial building design as well as understanding of public, semi-public, semi-private and private spaces. This exercise is also look to enhance the students' skills to explore their architecture and ability to synthesize various basic designs to more complex designs that emphasize ergonomics and anthropometrics. Learning includes workshop, seminar, trip, visit, construction & materiality, material experiment; customer response, structural, form expression, design process, design documentation and architectural illustration. This course emphasizes on the digital skills in technical presentation as well as creative visual images and model making.

DSPR 3158: Design 3
(Pre-requisite DSPR 2148 Design 2)
This Design 3 is a continuation from Design 2 studio where the students will undergo group and individual exercises including site inventory, case study analysis and finish up with medium size mid-span community building design. This exercise is also look to enhance the students' skills to explore their architecture and ability to synthesize various basic designs to more complex designs that emphasize site planning, space planning, complex form making as well as interpret public, semi-public, semi-private and private spaces Learning includes workshop, seminar, trip, visit, construction & materiality, material experiment; customer response, structural, form expression, design process, design documentation and architectural illustration. This course emphasizes on the digital skills in technical presentation as well as creative visual images and model making.

DSPR 1413: Structure & Construction 1
This course is an introduction of a basic understanding of basic structural design and conventional construction techniques. The course provides a theoretical knowledge of current construction techniques as well as the related technologies and its application on a simple building design. Throughout the semester, the course covers various topics of basic structural understanding and basic conventional construction types such as a construction of a brick, timber, concrete and steel. It does also allow the students to explore the construction approaches and use of structural materials in the current construction industry especially in Malaysia.

DSPR 1313: Architectural History & Theory
The course provides an overview of history, theory and language of the architectural world from the classical to present; with some understanding and awareness of the social and cultural values, political traditions, technological advancement, economic achievements as well as the environment that influences the buildings and landscapes.

DSPR 1212: Architectural Communication
The course is to introduce the students to the use of communication and its role in the architecture. These will be the basic concepts of manual drawing skills, architectural graphic skills, verbal presentation and model making. The goal of this series is to provide students knowledge in relation to culture, environment, technology and practice in the architecture field. Students need to explain the design and develop architecture design and adapt it in practice. Develop architectural communication with base general skills framed in a structured delivery system. Students need to discover knowledge, design and provide solutions clearly in appropriate form.

DSPR 1423: Construction Practice
The programme for this independence course exposes students to practices in the workshop and the real life of construction on site (students are required to observe and record what they have seen in the form of daily activities logbook and a final comprehensive construction report). The exposure on these hands-on practices provides awareness to students on various trades and difficulties in preparing construction work on site (construction field operations) and workshop (exposure to the equipment used). This course deals with the principles and the fundamental knowledge of construction practices that include the construction-related problems and data management. Learning through self-experience and teamwork (peer learning) are as well included. Students also will embark themselves in simple hands-on tasks related to the brick and concrete construction such as bricklaying, cement fero, concrete mixture and others.

DSPR 1323: Theory of Design
The "Design" is viewed as the core discipline of architectural practice. The course is an introduction to various essential knowledge and methods of design within the architectural context. It will cover the process and related parameters such as design thinking, processes, methods and knowledge on design creativity, research and writing that needs to be understood in order to produce a substantial design product that is inspiring in relation to man and environment.

DSPR 1222: Graphic & Digital Communication
This course introduces students to a practice-based, hands-on approach to digital technology communication. It is mainly an advanced continuation of Architectural Communication in the previous first semester which is basically to develop the skills of introduction to the use of graphics software; basic digital architectural drawings;representation of building elements and materials in digital and projection techniques for shades and shadow casting. Emphasis is on visual representation through a range of digital-making techniques, architectural digital composition and rendering techniques using computer graphics mediums. This course is 100% coursework and no final examination.

DSPR 2433: Architectural Heritage of Malaysia
The course is conducted based on research and documentation activities by the students. The measured drawing exercise is important for analysing and recording the architectural heritage of Malaysia for future reference. The case study building selected normally has its own unique characteristics that need to be documented. The course is a combination of field work and studio work where for the first few weeks of the semester, the students will be doing the measuring exercise on site in groups and later they will be working together spending time in the studio to produce a complete documentation.

DSPR 2343: Environmental Science & Sustainability
The course focuses on presenting awareness of climate and weather in the built environment as well as elaborating the fundamentals of environmental physics and its application related to climatic responsive building design. Climatic elements such as sun-path, solar heat gain, relative humidity, airflow, natural lighting and sound in the built environment will be elaborated. Exploring and learning from the primitive solutions towards understanding the basic passive climatic design principles and developing contemporary sustainable architectural solutions will be demonstrated to achieve thermal comfort and energy efficient building design.

DSPR 2532: Basic Architectural Computing
The aim of the course is to enable students to apply a variety of basic architecture software which introduces scenarios for students to deal with in relation to producing more effective usage of the software and an introduction towards basic 3D and BIM presentation techniques.

DSPR 2443: Structure & Construction 2
This course is an introduction of a basic understanding of basic structural design and conventional construction techniques. The course provides a theoretical knowledge of current construction techniques as well as the related technologies and its application on a simple building design. Throughout the semester, the course covers a various topic of basic structural understanding and basic conventional construction types such as a construction of a brick, timber, and basic concrete. It does also allow the students to explore the construction approaches and use of structural materials in current construction industry especially in Malaysia.

DSPR 2333: Building Services 1
This course provides a fundamental knowledge of Building Services Systems while investigating various buildings to be part of the case study. During this course, students will be able to relate the knowledge in the design part by analysing the technical part in schematic drawing with existing buildings around. The course has been designed to train and equip students with sound technical knowledge and practical skills pertaining to the field. Thus, it gives an opportunity to students to understand the basic principles and techniques of building services. It covers the basic functions and purpose of building services components. This subject covers basic concepts of water supply and sewerage system, including drainage, sanitation, and disposal system. It also includes the basic concepts of electrical supply system, air conditioning system and ventilation in designing a building. Compliance with Uniform Building By-Law (UBBL) is emphasized.

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DSPR 2232: Working Drawing 1
Working Drawing consists of two-dimensional orthogonal projections of the building or component such as plans, sections and elevations. A course that enables students to understand architectural drawings, structural drawings, civil drawings, mechanical drawings, electrical drawings etc. Students need to demonstrate techniques, skills and theories of design into architectural
design work. The projects need students to produce systematic work progress clearly, effectively and comprehensively.

DSPR 2242: Working Drawing 2
Working drawing consist of two-dimensional orthogonal projections of the building or component such as plans, sections and elevations. A course that enables students to understand architectural drawings, structural drawings, civil drawings, mechanical drawings, electrical drawings etc. Students need to demonstrate techniques, skills and theories of design into architectural design work. The projects need students to produce systematic work progress clearly, effectively and comprehensively.

DSPR 3253: Working Drawing 3
Working drawing consist of two-dimensional orthogonal projections of the building or component such as plans, sections and elevations. A course that enables students to understand architectural drawings, structural drawings, civil drawings, mechanical drawings, electrical drawings etc. Students need to demonstrate techniques, skills and theories of design into architectural design work. The projects need students to produce systematic work progress clearly, effectively and comprehensive.

DSPR 3353: Building Services 2
This course is more elaborate than the introductory subject as taught in Building Services 1 (DSPR 2333) which deals with services for domestic scale buildings. Building Services 2 (DSPR3353) emphasises on building services for the larger size buildings. The subject matters include air conditioning systems, firefighting systems, security systems, telecommunication systems, and mechanical transport systems (lifts and escalators). These technical aspects should be related to the design subjects where appropriate.

DSPR 3452: Architectural Leadership & Entrepreneurship
This is a non-lecture-based subject that addresses the need for a non-academic way of teaching and learning. It provides the opportunity for students to learn and develop their leadership skill throughout task given by the lecturer as well as the entrepreneurship value (marketing). It provides a means of measuring the quality of self-confident, leader-to-be and enterprising skill. This course also will shape the students to be able to generate incomes through market design products and services.

DSPR 3552: Design Competition
This course is to introduce students to the important elements of the architectural design competition. In this course, students will learn the composition of the presentation boards, the appropriate font style and sizes, the suitable content to compliment the design works etc. Students need to create a presentation board (convert the manual Semester 2 design studio works) in digital format. (If there is any suitable competition that can be matched with the academic calendar, students will be able to join the competition.)

DSPR 3652: Design Portfolio
This is a non-lecture-based subject that addresses the need for a non-academic way of teaching and learning. It enhances students to produce portfolios in order to market themselves. This course will help students to prepare, organise, strategies and manage their curriculum vitae and works portfolio. It provides a means of measuring the quality of academic excellence. The culture of competing and marketing themselves in the real world would boost students' competitiveness and elevate their sense of confidence.

DIPLOMA IN

—

PROPERTY MANAGEMENT

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Property Management
2. Final Award	Diploma in Property Management
3. Awarding Institution	UTM
4. Teaching Institution	UTM
5. Professional or Statutory Body of Accreditation	Board of Valuers, Appraisers, Estate Agents and Property Managers (BOVAEP)
6. Code of Programme	DSPF
7. Language(s) of Instruction	Bahasa Melayu and English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-governing
10. Study Scheme (Full Time/Part Time)	Full Time and Part Time
11. Study Duration	Full-time Minimum: 5 semesters (2.5 Years) Maximum: 8 semesters (4 Years) Part-time Minimum: 8 semesters (4 Years) Maximum: 18 semesters (9 Years)

Type of Semester	No. of Semesters		No. of Week Per Semester	
	Full Time	Part Time	Full Time	Part time
Normal	5	8	14	15
Short	2	3	8	9

12. Entry Requirement	A) GENERAL UNIVERSITY REQUIREMENTS
	1. **Sijil Pelajaran Malaysia (SPM) / Matriculation / Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) / Polytechnic Certificate / Sijil Kemahiran Malaysia (SKM) / Sijil Kolej Komuniti (SKK) / Sijil Institut Penilai Negara (INSPEN) / Equivalent Qualifications (MQF Level 3) Graduates** Possess Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits including Bahasa Melayu and a pass in History in the SPM examination. 1. **Equivalent Qualification Graduates (Malaysian Vocational Certificate (SVM))** Possess the Malaysian Vocational Certificate (SVM) with at least THREE (3) credits including Bahasa Melayu (Code 1104). 2. **Sijil Tinggi Pelajaran Malaysia (STPM) / Sijil Tinggi Agama Malaysia (STAM) Graduates** Possess Sijil Pelajaran Malaysia (SPM) with at least THREE (3) credits including Bahasa Melayu and a pass in History in the SPM examination. 3. **Equivalent Qualification Graduates (O Level)** Possess Sijil Pelajaran Malaysia (SPM) with at least a credit in Bahasa Melayu / Bahasa Melayu Kertas Julai. 4. **Equivalent Qualification Graduates (APEL-A)** Pass the APEL-A MQA assessment. B) **SPECIFIC PROGRAMME REQUIREMENTS** 1. **Sijil Pelajaran Malaysia (SPM) / Matriculation Graduates** ● **Fulfil the General University Requirements; and** ● **Specific Program Requirements** Obtain at least a **GRADE C** in **TWO (2)** subjects that are not yet counted for a credit

	AND
	
	Passed in English subject
	
	2. **Sijil Tinggi Pelajaran Malaysia (STPM) Graduates**
	   ● **Fulfil the General University Requirements; and**
	   ● **Specific Program Requirements**
	Possess the Sijil Tinggi Pelajaran Malaysia (STPM) with at least a **Grade C (GP 2.0)** in any **TWO (2)** subjects.
	
	3. **Sijil Tinggi Agama Malaysia (STAM) Graduates**
	   ● **Fulfil the General University Requirements; and**
	   ● **Specific Program Requirements**
	
	Possess the Sijil Tinggi Agama Malaysia (STAM) with at least a *Maqbul* **GRADE**.
	
	4. **Polytechnic Certificate Graduates**
	   ● **Fulfil the General University Requirements; and**
	   ● **Specific Program Requirements**
	Possess a Polytechnic Certificate at MQF Level 3 related to the applied Diploma program with at least a CGPA of 2.00.
	
	5. **Sijil Kemahiran Malaysia (SKM) / Sijil Kolej Komuniti (SKK) / Equivalent Qualification (MQF Level 3) Graduates**
	   ● **Fulfil the General University Requirements; and**
	   ● **Specific Program Requirements**
	
	Possess the Sijil Kemahiran Malaysia / Sijil Kolej Komuniti at MQF Level 3 related to the applied Diploma program with at least a CGPA of 2.00.
	
	6. **Equivalent Qualification Graduates (Malaysian Vocational Certificate (SVM))**
	   ● **Fulfil the General University Requirements; and**
	   ● **Specific Program Requirements**

Possess the Malaysian Vocational Certificate with an Academic CGPA ≥ 3.33;

AND

Vocational CGPA ≥ 3.67;

AND

Passed in English subject

7. **Equivalent Qualification Graduates (O Level)**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

Possess a GCE O Level qualification with at least a GRADE C in any TWO (2) subjects.

8. **Sijil Institut Penilai Negara (INSPEN) Graduates**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

Pass Sijil Penilaian Harta Tanah (SPHT) and Sijil Pengurusan Harta Tanah (SPGT) with an Academic **CGPA 3.00**

9. **Equivalent Qualification Graduates (APEL – A)**
   - **Fulfil the General University Requirements; and**
   - **Specific Program Requirements**

Pass the APEL-A MQA assessment by meeting the requirements of the applied program field.

C) FOR INTERNATIONAL STUDENT

1. **General Requirement**
   Admission requirements for international students by country are based on MQA regulations.

2. **Specific Program Requirement**
   Minimum qualification with **THREE (3)** credits **(Grade C)** includes credit in any subject.

| | 3. **English Competency Requirement**
Must obtain: -
● A band score of 5.0 and above in IELTS; OR
● A score of 40 and above in TOEFL or equivalent. |

13.   Programme Educational Objectives:

Diploma in Property Management is designed to produce graduates who:

i.   Competent, creative and innovative in solving various problems in the field of property valuation, property management, and real estate agency.

ii.   Communicate effectively with leadership skills and self-confidence while striving for career advancement through lifelong learning

iii.   Uphold ethical values and contribute to the needs of organizations and communities by participating in various related activities

14.   Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies

Programme Learning Outcomes(PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 **Knowledge (KW)**	Demonstrate and apply property management knowledge, property valuation, real estate and property law in development as semi- professional property manager, valuation assistant, real estate agent or real estate entrepreneur	Lecture, Tutorial, Active Learning, Scenarios Based, Learning, Weekly Take Home Task, Learning Discussion, Case study on preventive maintenance practice, Industrial Training	Quiz,Tests, Assignment, Final Exam, UTM Supervisor Evaluation Form, Industrial Supervisor Evaluation Form, Log Book

Programme Learning Outcomes(PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO2 **Application (CG)**	Apply theories and principles of real estate management, real estate valuation and real estate agency, in problem solving, analyse and interpreting real estate related data and write reports.	Lecture, Tutorial, Active Learning, Learning Discussion, Mini Scale Research, Mini Project, Scenarios Based Learning, Problem Based Learning, Project, Industrial Training	Test, Final Exam, Assignment, Project, Industrial Supervisor Evaluation Form
PLO3 **Practical Skills (PS)**	Demonstrate practical skills in using software and related equipment, skills and techniques related to property valuation, property management and real estate agent.	Lecture, Tutorial, Active Learning, Weekly Take Home Task, Project Based Learning, Mini Project, Fieldwork, Industrial Training	Assignment, Project, Report, Presentation, Final Exam, Seminar, Industrial Supervisor Evaluation Form
(b) Generic Skills			
Programme Learning Outcomes(PLO)	**Intended Learning Outcomes**	**Teaching and Learning Methods**	**Assessment**
PLO4 **Interpersonal Skills (IPS)**	Interact effectively and collaboratively in managing relationships in teams and within the organizations.	Industrial Training	Presentation, Project, UTM Supervisor Evaluation Form, Industrial Supervisor Evaluation Form

PLO5 **Communication Skills (CS)**	Communicate effectively in oral or written with various stakeholders and all levels of society.	Project Report, Project Problem Based Learning, Seminar, Assignment, Peer Assessment, Presentation, Industrial Training	Presentation
PLO6 **Digital Skills** **(DS)**	Apply various digital applications as well as seek and process data related to the field of studies	Project, Mini Project	Presentation, Project
PLO7 **Numeracy Skills (NS)**	Use and interpret routine and complex numerical data in the property management field	Active Learning, Project Based Learning	Project
PLO8 **Leadership, Autonomy &** **Responsibility** **(LAR)**	Demonstrate leadership qualities and be able to act as a responsible member of the group towards achieving common goal.	Scenarios Based Learning, Active-Learning, Project Based Learning, Peer Valuation	Peer Assessment, Assignment, Project, Presentation
PLO9 **Personal Skills (PRS)**	Identify self-improvement initiatives and possibilities for career development or further education	Active learning, Project Based Learning, Project, Industrial Training	Assignment, Project, Industrial Supervisor Evaluation Form
PLO10 **Entrepreneurial Skills (ENT)**	Demonstrate the ability to identify new opportunities in dealing with issues relaed to the real estate field with an entrepreneurial mindset	Project Based Learning	Project
PLO11 **Ethics and Professional** **Skills (ETS)**	Demonstrate the ability to perform tasks and make decisions ethically, professionally and with integrity	Problem Based Learning, Industrial Training	Project, Report
15. Total credit hours to graduate			**90 credit hours***
* Based on requirements from the Board of Valuers, Appraiser, Estate Agents and Property Managers(BOVAEP).			

16. Programme structures and features, curriculum and award requirements

This programme is offered on full-time based on a 3 Semester Academic Session with several courses being delivered and assessed in each semester.
Assessment:
  i. Courses:
     50% - Coursework
     50% - Final examinations
  ii. Skill Acquisition (Acquired during Industrial Training)
  iii. Passing marks for all **CORE COURSES** must have at least 50%. (Refer to MANUAL ACCREDITATION GUIDELINES FOR REAL ESTATE PROGRAMMES)
 	
Award requirements:
Students should achieve a total of 90 credit hours with minimum CPA of 2.00 inclusive of industrial training (8 credit hours). Course code: DSPF 3908.

17. Our Uniqueness
The programme is designed to provide the students with relevant theories and practice of real estate practice which covers the major area of property valuations, property management, and real estate agency and marketing. The relevance of the programme is strengthened through continuous relationship with the practitioners from different area of specialization within the real estate industry. The programme also emphasized on the systematic development of innovative thinking and creative problem solving skills, especially that related to the industry. Students will be trained not only in the specified areas, but also in self-discipline, communication skills and entrepreneurship. Students will gain valuable industry exposure and keep abreast with industry practices via industrial training. This programme obtained **full accreditation** from Board of Valuers, Appraisers, Estate Agents and Property Managers (BOVAEP)

18. Career Prospects and Career Paths

Graduates of the program can work:
a. Government agencies such as Valuation and Property Services, Ministry of Finance Malaysia, Local Authorities, Land Office and other government agencies.
b. Private companies which are involved in real estate; Valuation Companies, Estate Agencies, Facilities / Property Management
c. Property Developers
d. Financial Institutions and Banks
e. Corporate Real Estate Companies or Organizations such as UDA, PETRONAS, TH Property and others
f. May also further their study in various disciplines related to property such as Bachelor of Property/Estate Management and Bachelor of Land Administration and Development, both local and overseas.

19. Facilities available

List of laboratories:
a. Computer Laboratory
b. Language Laboratory

20. Support for Students and Their Learning

Personal support
Academic Advisor
Counselling
Infrastructure support
Internet access
e-learning
Digital library
Health care and Recreational
Financial support
National Higher Education Fund Corporation (PTPTN)
Public Services Department (JPA)
Yayasan Negeri
Pusat Zakat Negeri
Corporate Bodies
Tabung Dermasiswa UTMSPACE
Kumpulan Wang Simpanan Pekerja (KWSP)

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
UHLB 1032	Introductory Academic English	2
DSPF 1413	Valuation Principles	3
DSPF 1513	Building Technology	3
DSPF 1613	Malaysian Legal System	3
DSPF 1313	Valuation Mathematics	3
DSPF 1013	Principles of Economics	3
	Total	**17**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
UHLB 1042	Intermediate Academic English	2
ULRS 1182*/ UHLM 1122*	Appreciation for Ethics and Civilisation / Malay Language for Communication 1	2
DSPF 1523	Building Services	3
DSPF 1423	Valuation Methodology	3
DSPF 1623	Law of Contract, Agency and Torts	3
DSPF 1123	Introduction to Accounting and Finance	3
	Total	**16**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
ULRS 1032	Integrity and Anti-Corruption	2
DSPF 1733	Real Estate Marketing Practice	3
DSPF 1433	Investment Valuation	3
	Total	**8**

YEAR 2 (SEMESTER 4)

Code	Course	Credit
DSPF 2743	Surveying and Computation	3
DSPF 2543	Building Maintenance	3
DSPF 2843	Urban Planning & Development Control	3
DSPF 2343	Property Management	3
DSPF 2443	Applied Valuation	3
DSPF 2643	Real Estate Law	3
	Total	**18**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPF 2753	Introduction to Land Development	3
DSPF 2653	Real Estate Development Law	3
DSPF 2253#	Computer Application in Real Estate	3
DSPF 2453	Statutory Valuation	3
DSPF 2053	Real Estate Economics	3
	Total	**15**

YEAR 2 (SEMESTER 6

Code	Course	Credit
ULRF 2XX2	Service Learning & Community Engagement Courses	2
DSPF 2363	Real Estate Agency Practice	3
DSPF 2663	Professional Practice	3
	Total	**8**

YEAR 3 (SEMESTER 7)

Code	Course	Credit
DSPF 3908	Industrial Training	8
	Total	**8**
	Total Credits	**90**

Note:
2) *Local students will enroll for ULRS while international students will enroll for UHLM.
3) # Courses are conducted as lectures and computer labs
4) All courses offered are graded.
5) The duration of industrial training is 16 weeks

PRE-REQUISITE
DIPLOMA IN PROPERTY MANAGEMENT

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7
DSPF 1413	DSPF 1523	DSPF1733	DSPF 2743	DSPF 2753	DSPF 2363	DSPF 3908
DSPF 1513	DSPF 1423	DSPF 1433	DSPF 2543	DSPF 2653	DSPF 2663	
DSPF 1613	DSPF 1623		DSPF 2843	DSPF 2253		
DSPF 1313	DSPF 1123		DSPF 2343	DSPF 2453		
DSPF 1013			DSPF 2443	DSPF 2053		
			DSPF 2643			

Notes: Students must pass all courses before proceed to Semester 7.

SYNOPSIS OF CORE COURSES

DIPLOMA IN PROPERTY MANAGEMENT

DSPF 1413: Valuation Principles
This course introduces students to some major views and theories of real estate profession in Malaysia. It will emphasize on the general concepts of introduction to the real estate, real estate business, real estate fundamentals, and real estate valuation. At the end of this course, students should be able to appreciate the real estate environment in Malaysia.

DSPF 1513: Building Technology
This course introduces students to some major views, the process, the elements and the theories of building environment development in Malaysia, under the Uniform Building Act 1984. It will emphasize on the general concepts of introduction to the building development process, building structure, bond working, building services, concrete working, wood working, building finishing, drawing and reading the floor plan and calculate the building area based on floor plan.

DSPF 1613: Malaysian Legal System
This course is designed to expose students to some major theories and concepts about the Malaysian Legal System. In this course, students need to understand the history and development of the legal system in Malaysia, the various sources of law, the judicial system and the court system etc. It acts as a legal foundation for the students before continuing with the core legal courses, for example the law of contract, agency & tort which is being offered in the following semester.

DSPF 1313: Valuation Mathematics
This course introduces students to the concept, theory and formula of mathematics in in real estate industry. The course covers topics such as simple interest, compound interest, annuity, valuation mathematic, depreciations etc. At the end of this courses, student s needs to apply the theory, concept and formula to solve the problem in real estate industry.

DSPF 1013: Principles of Economy
This course is design to expose students to basic economics level. This course will consist of both theories and concepts in microeconomics and macroeconomics at a foundation level. The course starts with basic microeconomics, demand and supply, market equilibrium, consumer behaviour, production and cost of production and market structure. The course will then proceed to the topics in macroeconomics such as introduction to macroeconomics, consumption and savings, investment and public finance, introduction to monetary system and finally, inflation. At the end of the course students will understand basic economics knowledge and able to apply the concepts for future related subjects in their daily lives.

DSPF 1523: Building Services
This course introduces students to some major views and theories in the environment of building services in Malaysia based on the Uniform Building Act 1984. It will emphasize on the general concepts of the building services, the water supply system, electricity supply system, drainage system, air system etc. At the end of this course, students should be able to appreciate the general principles of building services in Malaysia, increase their awareness on the roles of building development based on Uniform Building Act 1984, comprehend the concepts and practical aspects of building services. Besides that, students should also be able to work in a team.

DSPF 1423: Valuation Methodology
This course consists of introduction to general understanding of the valuation process and valuation methodology for valuing the real estate for any purpose of valuation, with reference to "Malaysian Valuation Standards" produced by the Board of Valuers, Appraisers, Estate Agents and Property Manager Malaysia. Valuation is the formulating of an opinion of market value of a property. This opinion is derived by three main Approaches to Valuation: Comparison Approach, Cost Approach and Income Approach. Through project work, students are led to develop numeracy skills and to communicate effectively. At the end of this couse, students will able to understand the concept and principles of the approach in determining value according to the valuation methodology.

DSPF 1623: Law of Contract, Agency and Torts
This course is designed to generally introduce the students to contract law, the elements of contract, terms of contract, types of contract, discharge of contract, legal remedies for breach of contract and Islamic contractual transaction. In continuation with the above, students shall be able to differentiate elements of contract under the civil and conventional law and Islamic law of contract too. The second part of the course will focus on law of agency, the principles that are applicable in agency and formation of an agency, together with rights and obligations of both the agent and his principles towards each other and third parties. The third part of this course shall briefly discuss the law of tort specifically on negligence to accommodate the specific needs of the course for students.

DSPF 1123: Introduction to Accounting and Finance
This course introduces students to the principles and the basics of accounting and financial in real estate valuation. It introduces students to the theory and principles of accounting. Besides that, it will emphasize on the theory and general concepts on financial management. At the end of the course, students should be able to apply the theory and concept of accounting and financial management in real estate profession especially for property management and valuation.

DSPF 1733: Real Estate Marketing Practice
This course is an overview of the marketing fundamental, consumer behaviour, market segmentation, digital marketing, positioning and targeting, marketing mix etc. The aim of this course is to relate and apply the concept of marketing in real estate practice. Through assignments and project work, students are led to develop marketing skill and able to communicate effectively

DSPF 1433: Investment Valuation
This course introduces students to theories and practices in property investment area. It will emphasize on the general concepts of investment, the usage of investment method in determining the capital value or rental of freehold or leasehold properties, rental elements, rates of returns and analyzing the investment alternatives. Students shall also be exposed to the cash flow techniques in property investment. Students shall also be introduced to REITS as an alternative in property investment. At the end of the course, students should also be able to demonstrate and apply the knowledge by producing a standard valuation report using the investment method and also able to analyze the return of investments within a given portfolio. Through assignments and project works, students are led to develop skills to communicate effectively, to lead and cooperate as team members, be highly motivated, disciplined and ethical.cept and formula to solve the problem in property management.

DSPF 2743: Surveying and Computation
This course introduces the structure of the land administration of Malaysia and describes every department's responsibilities under its administration. It focuses on the title record system kept at the Registrar and Land Office, registration of title, different types of land categories and land alienation. It also introduces the basic operation of surveying works which includes the measurement of angles, bearings and distances, traverse and heights, and the various computational aspects and problem solving commonly found in engineering surveys. It also shows the various types of survey plans and maps used.

DSPF 2543: Building Maintenance
This subject consists of introduction to building maintenance management system, cause and defects on building components and material and building defects. It also explains the maintenance approach and functions, planning and develop maintenance system, building surveys works and procedures, organization of building maintenance management and preventive maintenance.

DSPF 2843: Urban Planning and Development Control
This course introduces students to the system of physical planning or land-use planning and the urban planning process practice in Peninsular Malaysia. Students are exposed to some current environmental issues related to urban planning in the country. It covers the definitions of urban planning, urban planning machinery, urban planning legislations; Town Planning Enactments, Town and Country Planning Act, 1976, two-tier planning system of structure plans and local plans, planning permission, planning standards, development charges, and property development process. At the end of the course, students should be able to explain urban planning practice in Malaysia, relate urban planning to land matters, calculate development charges on conversion of land-uses and increase in density, and explain the different methods of development control practice in Malaysia such as zoning, density control, plot ratio, plinth area, building lines, set-backs, car parking requirements and others.

DSPF 2343: Property Management
This course introduces students to some major views, theories and practices in property management. It involves the introduction to the concept and principle of management, the duties, qualification, code of conduct and appointment of a property manager and handing over, the management of real estate from building management, maintenance, financial, administrative, insurance, health, safety and emergency, tenancy and facilities management. It also covers current issues related to the development of property management practices in Malaysia.

DSPF 2443: Applied Valuation
This course covers determining factors affecting value, data collection and data analysis, application of appropriate approachs of valuation for different types of properties, valuation for market value, fire insurance and forced sale value. At the end of this course, students should be able to use and apply their professional knowledge and skills in choosing the appropriate appraoach of valuation when carrying out property valuation according to the type of property while advocating the Malaysiab Valuation Standards (MVS). Through assignments and project work, students are lead to develop skills to communicate effectively and highly motivated for better self-improvement.

DSPF 2643: Real Estate Law
The course is designed to introduce students to applicable laws governing land matters in Malaysia and its close relationships with any type of landed property development. Students are taught the concept of land, jurisdictions and authorities of concerned parties over land matters. The importance of the Torrens System and understanding the types of commercial transactions created over land by land owners that are currently available and recognized by the National Land Code.

DSPF 2753: Introduction to Land Development
This course consists of introduction to general concepts and principles of land development process which includes the land acquisition process, preparation development master plan and land development stages.

DSPF 2653: Real Estate Development Law
The course is designed to introduce students to applicable laws governing land and property development law in Malaysia and the close relationships with the provisions of NLC and authorities of local councils. Students shall be taught the concept of land development, types of land development and other subject matters that are closely linked and affected or shall affect land development. Various laws, issues and subject matters such as Malay Reserved Land, land acquisition, strata title and land and property developers shall be discussed.

DSPF 2253: Computer Application in Real Estate
This course introduces students to the basic knowledge of computer aided valuation in real estate profession and Access applications. This course also introduced students to drawing of building plan by using Visio, and location plan and site plan, using Google Map. At the end of this course, students should be able to use and apply their knowledge and skills in Excel for property valuation, Access for property management database and real estate agency, and able to use Visio to draw building plans and use Google Map application to prepare location plan and site plan.

DSPF 2453: Statutory Valuation
This subject consists of introduction to valuation statutory; the concepts and basic needs of statutory valuation and the acts which its involve in the valuation of the property. The purpose of statutory valuation is divided into 3. Firstly, it is for the taxes purpose that involves rates, stamp duty, real property gains tax. The second purpose is for valuation for compensation of land acquisitions and lastly, it is for valuation for payment of charges and premium such as development charge, premium for alienation of land and conversion of land use. At the end of this course, students should be able to use and apply their professional knowledge and skills, in choosing the appropriate approach of valuation when carrying out property valuation according to the type of property while advocating the "Manual of Valuation Standards". Through assignments and project work, students are led to develop skills to communicate effectively, to lead and cooperate as team members, be highly motivated, disciplined and ethical.

DSPF 2053: Real Estate Economics
An introduction to the theory and concepts of land economics and urban land economics. This course consists of Part I (Land Economics) and Part II (Urban Land Economics). The subtopics in Part I are economic land characteristics, structure of property market, property investment, economic return on land, the allocation of land sources, land development, land planning, the role of government in property marketing etc. In Part II, students must understand the theory of rental and replacement, Theory of Von Thunen, Theory of Alonso; land value and land use; Urban Structure Theory; factors that affect the land use style, accessibility, complimentarily, land use marketing and replacement; housing, commercial, office and industrial.

DSPF 2363: Real Estate Agency Practice
This course is designed to enable students to acquire knowledge of the real estate agency profession. The topics include introduction to the role of a Real Estate Agent (REA); background study; definition based on the ACT 242; the REA profession; the role of the Act 242 and the Board of Valuers, Appraisers, Estate Agents & Property Managers's registration and procedure to becoming a registered agent; code of ethics and best practice of a REA; responsibilities and work scope; role and function of REA today; property listing; strategies; consultancy works; closing deals and the legalities and procedures involved with property transactions. At the end of the course, students should be able to demonstrate their understanding on the theory and practice of a real estate agent. The students also should be well versed with the current rules and property market scenario in Malaysia. Through assignments and project work, students are led to develop skills to communicate effectively, to lead and cooperate as team members, be highly motivated, disciplined and ethical.

DSPF 2663: Professional Practice
This course introduces students to the professional practice of real estate, in particular, to the requirements and characteristics of a professional. The primary aim is to expose students to the nature of professional practices relating to real estate profession in Malaysia and selected markets. The highlights of the course include differences between professional and non-professionals, qualifications and requirements to be real estate professionals, code of ethics and standards, professional negligence, setting up of professional business organization, opportunities and challenges in the field of valuation, estate agency and property management.

DSPF 3908: Industrial Training
This course consists of practical training at property management, property valuation and real estate agency firms, other related real estate fields and government sector such as JPPH Ministry of Finance, UDA, DBKL, Local Authority and others. The purpose of the course: the student will get knowledge and experience from direct industry. The major course is divided into 3 – Property valuation, property management and real estate agency. At the end of this course, students should be able to use and apply their professional knowledge and skills in property valuation, property management and estate agency in real life practice. Through this course, students are also led to develop skills to communicate effectively in written and oral forms, to lead and cooperate as team members, be highly motivated, disciplined and ethical.

DIPLOMA IN

COMPUTER SCIENCES

PROGRAMME SPECIFICATIONS

1. Programme Name	Diploma in Computer Science
2. Final Award	Diploma in Computer Science
3. Awarding Institution	University Technology Malaysia
4. Teaching Institution	University Technology Malaysia
5. Professional or Statutory Body of Accreditation	Malaysian Qualifications Agency (MQA)
6. Code of Programme	DSPD
7. Language(s) of Instruction	Bahasa Melayu and/or English
8. Mode of Study (Conventional, distance learning, etc)	Conventional
9. Mode of operation (Franchise, self-govern, etc)	Self-governing
10. Study Scheme (Full Time/Part Time)	Full Time and Part Time
11. Study Duration	Full Time : Minimum : 5 semesters (2 ½ Years) Maximum : 8 semesters (4 Years) Part Time : Minimum : 8 Semester (4 Years) Maximum : 18 Semester (9 Years)

Type of Semester	No. of Semesters		No. of weeks per semester	
	Full Time	Part Time	Full Time	Part time
Normal	5	8	18	19
Short	2	3	8	9

12. Entry Requirement	**A) GENERAL REQUIREMENTS**
	Obtain a pass in Sijil Pelajaran Malaysia (SPM) / equivalent qualification, inclusive of a credit in Bahasa Melayu and a pass in History at the SPM level
	
	B) SPECIFIC REQUIREMENTS
	
	Obtain a pass in Sijil Pelajaran Malaysia (SPM) / equivalent qualifications, with a minimum of **THREE (3)** credits **(GRADE C)** inclusive of Bahasa Melayu and the following subjects:
	  • Mathematics
	  • ONE (1) of the subjects (NOT inclusive of previously listed subjects with credits)
	AND
	Obtained a pass (GRADE E) in English Language.
	
	 OR Obtain a pass in Sijil Tinggi Pelajaran Malaysia (STPM), with a minimum of Grade C [Cumulative Grade Point Average (CGPA) of 2.00] in any subject or equivalent qualification and a credit in Mathematics at SPM level or its equivalent.
	
	 OR Obtain a pass in Sijil Tinggi Agama Malaysia (STAM), with a minimum Grade of Maqbul (Pass) and a credit in Mathematics at SPM level or its equivalent.
	
	 OR Obtained qualification from Polytechnic / Kolej Komuniti / Certificate which, relevant with the Diploma programme offered by obtaining a minimum cumulative grade point average (CGPA) of 2.00.
	
	 OR Obtained Sijil Kemahiran Malaysia (SKM) Level 3 MQF / Sijil Kolej Komuniti (SKK) Level 3 MQF / Certificate which, relevant with Diploma programme offered by obtaining a minimum cumulative grade point average (CGPA) of 2.00 and credit in

	Mathematics at the SPM level or equivalent.
	OR Possess a Malaysian Vocational Certificate (SVM) with at least a credit in Bahasa Melayu (Code 1104). Possess a Sijil Vokasional Malaysia (SVM) in a field related to the applied Diploma program and obtain at least a Grade C in Mathematics*; and achieve an Academic CGPA of ≥ 3.33; and achieve a Vokasional CGPA of ≥ 3.67; and pass the English Language subject. **OR** Possess GCE O Level qualifications with at least a Grade C in Mathematics* and ONE (1) other subject. **OR** Pass the APEL-A MQA assessment by meeting field requirements of the applied program. *Note:* ** Candidates with a pass in Mathematics at an SPM level or its equivalent may be admitted if the certificate program contains subjects that are equivalent to Mathematics at SPM level.* ** Candidates with a pass in Mathematics at SPM level and without a related certificate need to take a reinforcement Mathematics subject with appropriate topics in the discipline of Computing at the beginning of the study.* ** Candidates with a credit in a Computing-related subject at SPM level or its equivalent may be given preferential consideration.*

13. Programme Objectives

Graduates of this program should be able to:

- Competent, creative, and innovative in applying knowledge of computing, practical skills, numeracy, and appropriate digital technologies to solve problems in the field of computer science.
- Communicate effectively with self-confidence and demonstrate leadership in engaging with stakeholders, while continuously enhancing personal and professional growth through lifelong learning.

  Uphold ethical values and integrity while demonstrating a positive attitude and entrepreneurial mindset in contributing to the organization, society, and personal development within the computing profession.

14. Programme Learning Outcomes (PLO)

(a) Technical Knowledge and Competencies

Programme Learning Outcomes (PLO)	Intended Learning Outcomes	Teaching and Learning Methods	Assessment
PLO1 Knowledge and Understanding (KW)	Articulate and discuss theories, concepts and principles in the computing field.	Lectures, tutorials, laboratory work, directed reading, internet searching, active, cooperative and problem based learning, Independent and a group project.	Tests, Quizzes, Examinations, Assignments, Presentation, Industrial Training Report and supervisor evaluation.
PLO2 Cognitive Skills (CG)	Apply theoretical principles of Computer Science for analyzing, designing and developing computer system.	Laboratory work and group projects.	Assignments, Project Report, Industrial Training and Industrial Training Report.
PLO3 Practical Skills (PS)	Apply computing practical skills in computer hardware management, algorithm, programming, software design and development using current technologies.	Laboratory work and group projects.	Laboratory Reports, Assignments, In Lab Test, Project Report, Industrial Training and Industrial Training Report.

(b) Generic Skills			
Programme Learning Outcomes (PLO)	**Programme Learning Outcomes (PLO)**	**Programme Learning Outcomes (PLO)**	**Programme Learning Outcomes (PLO)**
PLO4 **Interpersonal Skills** **(IPS)**	Interact effectively and collaboratively in managing relationships in teams and within the organizations.	Group projects, service learning and supervised learning.	Project Reports, Industrial Training Report, Industrial Training Presentation, Log Book, Supervisor Evaluation.
PLO 5 **Communication Skills** **(CS)**	Communicate effectively in oral or written with various stakeholders and all levels of society.	Lecture, active learning, self-directed learning, student centred learning, group projects and supervised learning.	Project and Assignment Reports, Industrial Training Report, Industrial Training Presentation, Log Book, Supervisor Evaluation.
PLO 6 **Digital Skills** **(DS)**	Apply a range of digital applications and effectively seek and process data related to the field of computing.	Group assignment, projects, supervised learning.	Project and Assignment Reports, Industrial Training Report.
PLO 7 **Numeracy Skills** **(NS)**	Use and interpret both routine and complex numerical and graphical/visual data in the field of computing.	Individual and group projects.	Project Reports.
PLO 8 **Leadership, Autonomy &** **Responsibility** **(LAR)**	Demonstrate leadership qualities and the ability to function responsibly as a team member in working towards common goals.	Lecture, active learning, self-directed learning, student centred learning, group projects, supervised learning.	Project Reports, Peer evaluations and Industrial Training Report and Presentation.

PLO 9 **Personal Skills** **(PRS)**	Demonstrate effective personal skills including self-improvement, adaptability and ethical responsibility to support continuous professional and personal growth.	Lecture, active learning, self directed learning, student centered learning, group projects, self access and supervised learning	Project Reports, Presentation, Industrial Training Supervisor Evaluation.
PLO 10 **Entrepreneurial Skills** **(ENT)**	Demonstrate the ability to recognize new opportunities and apply an entrepreneurial mindset to challenges in the computing field.	Lecture, active learning, self directed learning, student centered learning, group projects, case study.	Project report and presentation, Case study report Assignment Reports.
PLO 11 **Ethics and Professionalism Skills** **(ETS)**	Demonstrate the ability to perform tasks and make decisions ethically and professionally.	Group projects, assignments, supervised learning.	Project and assignment report, Industrial Training presentation, Industrial Training Supervisor Evaluation
15. Total credit hours to graduate		**91 credit hours**	

16. Programme structures and features, curriculum and award requirements

This programme is offered full-time based on a 2 Semester Academic Session with several courses being delivered and assessed in each semester.

Assessment:
Courses:
    60% Coursework
    40% Final examinations

Skill Acquisition (lab embedded in the course)
Passing marks for all courses is 40%. (Refer to UTM Academic Regulations)

Award requirements:
Students should achieve a total of 91 credit hours with a minimum CPA of 2.00 inclusive of industrial training (8 credit hours). Course code: DSPD 3908.

17. Our Uniqueness

This program blends theory and practice, and real world experience, plus covers key technical knowledge in techniques of computing skills, programming, website creation, software development and all its related current technologies. The systematic development of innovative thinking and creative problem solving skills is given emphasis in the program. Students will be trained not only in the technical areas of specialization but also in self-discipline, ethics, integrity and entrepreneurship. Students will gain valuable industry exposure and keep abreast with industry practices via industrial training.

18. Career Prospects and Career Paths

Graduates of the program can work as a programmer, software developer, IT officer, web developer, technical support staff, computing entrepreneur and any related jobs in the computing industry. The graduates may also further their studies in Bachelor of Computer Science or a bachelor degree in any related field at local or foreign universities.

19. UTM Diploma ++ Program

Students are given the opportunity to enroll in non-credit short courses offered by the university during semester breaks.

20. Facilities available

List of laboratories:
a.   Linux Laboratory
b.   Information Technology Laboratory
c.   Multimedia Laboratory
d.   Computer Maintenance Laboratory
e.   Language Laboratory

21. Support for Students and Their Learning

Personal support
    Academic Advisor
    Counseling

Infrastructure support
    Internet access
    e-learning
    Digital library
    Health care and Recreational

Financial support
    Perbadanan Tabung Pendidikan Tinggi Negara (PTPTN)
    Jabatan Perkhidmatan Awam (JPA)
    Yayasan Negeri
    Pusat Zakat Negeri

CURRICULUM STRUCTURE

YEAR 1 (SEMESTER 1)

Code	Course	Credit
ULRS 1032	Integrity and Anti-Corruption Course	2
UHLB 1032	Introductory Academic English	2
DSPD 1243	Digital Logic	3
DSPD 1683	Introduction to Computer Science	3
DSPD 1573	Programming Fundamental	3
DSPS 1013	Mathematics For Computer Science	3
	Total	**16**

YEAR 1 (SEMESTER 2)

Code	Course	Credit
ULRF 2XX2	Service Learning and Community Engagement Courses	2
UHLB 1042	Intermediate Academic English	2
DSPD 1223	Computer Organization and Assembly Language	3
DSPD 1693	Discrete Mathematics	3
DSPD 1603	C++ Programming	3
DSPD 1733	Data Structures and Algorithms	3
	Total	**16**

YEAR 1 (SEMESTER 3)

Code	Course	Credit
DSPD 1483	Database	3
DSPD 1703	Web Programming	3
ULRS 1182* / UHLM 1122*	Appreciation for Ethics and Civilization / Malay Language for Communication 1	2
	Total	**8**

Note: *Local students register for ULRS while International students register for UHLM

YEAR 2 (SEMESTER 4)

Code	Course	Credit
DSPD 2673	Data Communication and Networking	3
DSPD 2453	System Analysis and Design Methods	3
DSPD 2623	Object- Oriented Programming Using Java	3
DSPD 2653	VB.NET Programming	3
DSPD 2663	Operating System	3
DSPD 2343	Computer Security	3
	Total	**18**

YEAR 2 (SEMESTER 5)

Code	Course	Credit
DSPS 2313	Statistics	3
DSPD 2783	Current Topics in Computer Science	3
DSPD 2713	Mobile Programming	3
DSPD 2353	IT Support and Maintenance	3
DSPD 2763	Human Computer Interaction	3
DSPD XXX3	Elective I	3
	Total	**18**

YEAR 2 (SEMESTER 6)

Code	Course	Credit
DSPD 2794	Project	4
DSPD 2213	Ethics in Computing	3
	Total	**7**

YEAR 3 (SEMESTER 7)
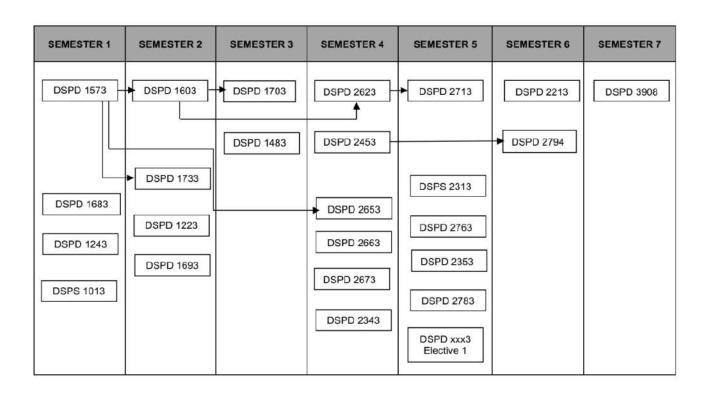
Code	Course	Credit
DSPD 3908	Industrial Training	8
	Total	**8**
	Total Credits	**91**

LIST OF ELECTIVE COURSES

Code	Course Name	Credit	Prerequisite
DSPD 2533	Computer Graphics	3	-
DSPD 2563	Computer Animation	3	-
DSPD 2543	Digital Audio Video	3	-

PREREQUISITE DIPLOMA IN COMPUTER SCIENCE

SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7
DSPD 1573	DSPD 1603	DSPD 1703	DSPD 2623	DSPD 2713	DSPD 2213	DSPD 3908
		DSPD 1483	DSPD 2453		DSPD 2794	
	DSPD 1733			DSPS 2313		
DSPD 1683			DSPD 2653			
	DSPD 1223		DSPD 2663	DSPD 2763		
DSPD 1243				DSPD 2353		
	DSPD 1693		DSPD 2673			
DSPS 1013				DSPD 2783		
			DSPD 2343			
				DSPD xxx3 Elective 1		

SYNOPSIS OF CORE COURSES

DIPLOMA IN COMPUTER SCIENCE

DSPS 1013: Mathematics for Computer Science
This course provides foundational mathematical knowledge essential for the study of computer science. It focuses on algebraic and calculus concepts that support computational thinking and problem-solving. The course covers essential topics such as set theory, number systems, functions and polynomials, as well as solving linear and quadratic equations. Additionally, students will explore vectors, matrices, differentiation, and integration of simple functions and their applications relevant to computer science. The course is delivered through interactive lectures, tutorials, think-pair-share, and group assignments. By the end of the course, students will be able to apply algebraic, matrix, and calculus techniques to model and solve fundamental problems in computational contexts.

DSPD 1683: Introduction To Computer Science
This course will introduce students to computer science technology as well as its uses in daily life both at home and at work. Various aspects of computer science encompassing hardware, software, network, communications, internet, multimedia, graphics and systems applications will be introduced. The syllabus is primarily added with the learning of selected microcomputer applications (theory and practical) such as word processor, electronic spreadsheet and others. Lastly, this course will introduce the necessary knowledge and skills required for organizing and carrying out entrepreneurial activities, to develop the ability of analyzing and understanding business situations.

DSPD 1243: Digital Logic
This course introduce student to digital and analog concept, basic logic gates, number system and code, code conversion, BCD code, Gray code, Boolean algebra, Boolean variable, truth table, Karnaugh map SOP and POS, minimization combination logic circuit, adders, comparator, decoder, encoder, code converter, multiplexers, demultiplexers, parity generators, latch, edge triggered flip-flop, clock signal, asynchronous and synchronous counter.

DSPD 1573: Programming Fundamental
This course provides the students with the basics of computer hardware, software, computer programming languages and program development methods with the emphasis on C++ language. Topics highlighted are designing algorithms using Pseudo code, Flowchart, NS-Diagram and Decision Table. The basic programming concepts of data types, variables and constant, input and output, assignment operators, types of operator, basic control structures such as selection structure, nested selection, looping, nested loop are introduced and applied using C++ language. At the end of the course, students should be able to design an algorithm and construct a C++ language program respectively for a given set of problems.

DSPD 1603: C++ Programming
(Pre-requisite DSPD 1573)
This course introduces students who have learned basic programming concepts to deepen programming by focusing on object-oriented programming concepts. It emphasizes the implementation of object-oriented programming concepts such as Objects, Data Abstraction, Data Encapsulation, Polymorphism, Inheritance and Association. This will equip students with theory and practice problem-solving techniques using an object-oriented approach. At the end of this course, students should be able to apply OOP techniques to solve the programming problem.

DSPD 1693: Discrete Mathematics

This course provides a foundational introduction to discrete structures, which play a critical role in computer science. Students will explore key topics including set theory, logic and proof techniques, relations and functions, recurrence relations, combinatorics, graph theory, trees, and finite automata. The course is delivered through lectures and structured exercises, with a focus on analytical thinking and practical problem-solving. By the end of the course, students will be able to apply discrete mathematical concepts to solve computational problems, model scenarios using recurrence relations and counting techniques, utilize graph and tree structures in relevant applications and construct basic finite automata to represent digital systems.

DSPD 1223: Computer Organization and Assembly Language
(Pre-requisite DSPD 1243)

This course introduces students the concept of computer system evolution, computer system function and component, internal memory, external memory, input/output device, central processing unit, instruction set: characteristics, function, addressing mode and format, CPU structure and function, control unit, assembly language programming, assembly language format, arithmetic operation, addressing, comparison instruction, string and loop, sub-routine, integer arithmetic, floating-point arithmetic, bit and character manipulation, macro definition, and interrupt.

DSPD 1733: Data Structures and Algorithms
(Pre-requisite DSPD 1573)

This course introduces students to the knowledge of data structure and algorithms method or technique for solving decision making problems in the computer field using C++ programming including list and linked lists, stacks, queues, recursions, trees, searching, graphs and sorting. Emphasis will be on the basic concept of data structure, operations of model development, algorithms or pseudo-code design, programming development and present the output. At the end of the course students should be able to choose the suitable data structure to solve problems.

DSPD 1483: Database

Introduction to Database, The Database Environment, Relational Model, SQL: Data Manipulation, SQL: Data Definition, Query-By-Example (QBE), Database Planning, Design and Administration, Entity relationship Modeling, Normalization, Methodology, Transaction Management and develop an application using any DBMS.

DSPD 1703: Web Programming
(Pre-requisite DSPD 1603)

The course is designed to present fundamentals, technologies and components for web application developments. Standard HTML for content creation, CSS for content presentation, JavaScript for client-side logics, PHP a server-side language for business logics and data processing and MySql for database processing.

DSPD 2673: Data Communications and Networking

This course presents the principles and applications in the area of data communications and networking. It concentrates on data communication concepts, issues, and technologies. In particular, it emphasizes the importance and need of simple, clear communication in today's world. At the end of this course the student should be able to comprehend the terminology, concepts, applications and metrics of data communications and computer networks, demonstrate knowledge of principles of computer network architectures and data communications, understand the technical aspects of data transmission in networks, demonstrate and understand network protocols and architecture, understand security issues in computer networks and recognize the present and future impact of advancements in data communications and networks.

DSPD 2453: System Analysis and Design Method
This course is designed to provide students the opportunity to understand about the systems analysis and design methods. Expanded coverage of emerging technologies, such as agile methods, cloud computing, and mobile applications, and traditional approaches to systems analysis and design. Emphasizes critical thinking and IT skills in a dynamic, business-related environment and refine the IT skills student's need for success in today's competitive business world.

DSPD 2623: Object - Oriented Programming Using Java
(Pre-requisite DSPD 1603)
This course is designed to expose the students to software development by covering object-oriented analysis design with the UML, and the fundamentals of object-oriented programming in Java. It will emphasize on the concept of object- oriented, OOAD using UML: Use Case Diagram & Class Diagram, basic of programming and object-oriented programming. For object-oriented programming, it will expand into classes and objects, strings, inheritance and polymorphism, abstract classes and interface. At the end of this course, students should be able to demonstrate and apply knowledge by analyzing, designing and implementing using an object-oriented approach. The students should also be able to acquire and manage relevant information to build Java applications from various sources to accomplish an assigned task.

DSPD 2653: VB.NET Programming
(Pre-requisite DSPD 1573)
This course is designed to provide students the opportunity to examine visual basic programming, learn how to create windows applications using the Visual Basic.Net, modify existing windows applications with VB.Net for applications, and understand the practical application of VB.Net features. Additionally, the course is concerned with programming logic, documentation, design choices, and the Systems Development Life Cycle.

DSPD 2663: Operating System
This course focuses on the fundamental concepts of the operating system and its functions. Topics include basic operating systems design and implementation such as process management, memory management, file management, secondary storage management, I/O management and file management. Students will acquire hands-on practice on UNIX operating systems, manipulating Unix File System, UNIX Shell and Text Editors, create shell scripts, and programming under UNIX.

DSPD 2343: Computer Security
This course is designed to provide students with the fundamentals of computer security. It covers material related to general computer security concepts, basics of cryptography, program security, operating system security, database security, network security, and operational/organizational security. Students will gain and acquire knowledge, theories, concepts and applications in computer security and controls and should be able to carry out a small scale project to investigate the current practices in the area of security and controls in the industries.

DSPS 2313: Statistics
This course introduces students to basic statistics and probability concepts, forming an essential base for data analysis across various disciplines. The course covers fundamental statistical principles including discrete and continuous probability distributions, sampling distributions, and simple hypothesis testing. Students will also be introduced to simple linear regression and correlation analysis, enhancing their ability to handle real-world data. The course is delivered through a combination of lectures and practical sessions, emphasizing problem-solving and real-world application of statistical tools. By the end of the course, students will be able to apply probability principles, conduct basic statistical analyses, and interpret results in meaningful, real life contexts.

DSPD 2783: Current Topics in Computer Science
This course provides students with current issues related to computer science. The key objective of this course is to equip the students with the knowledge in current issues, mainly the research done to solve related problems. Based on the given topic in current research, the students should argue and think critically about what could be other alternatives besides the current solutions.

DSPD 2713: Mobile Programming
(Pre-requisite DSPD 2623)
This course is a project-oriented course, where students will be introduced to the principles of mobile application design, programming technologies and development related to mobile applications. Topics include accessing device capabilities, industry standards, operating systems, and programming for mobile applications using an OS Software Development Kit (SDK). The course also exposes students to common user interface elements, storage strategies for persistent information, including the use of the available Data storage features, and data sharing. At the end of the course, students should be able to design and develop basic mobile apps.

DSPD 2353: IT Support and Maintenance
This course provides the students with knowledge of computer hardware, types of computer motherboard form factor, types of memory and basic installation, the computer I/O components, types of CPU and socket, assembly & disassembly of PC and basic troubleshooting/ installation. This course will also cover the fundamentals concepts in purchasing PCs, basic understanding of computer lab setup and safety purposes as well as latest technology related to the course.

DSPD 2763: Human Computer Interaction
This course is designed to present the physical and informational aspects of human computer interaction especially on the user interface. It emphasizes the process of user interface design and development including user-centered design and task analysis. The course also stresses on the user interface evaluation and experiments through group as well as individual project work.

DSPD 2794: Project
(Pre-requisite DSPD 2453)
This course requires the understanding of computer science core courses. Student will proposed an individual software development project. Students are required to analyze, design, code and integrate the different modules that make up the proposed project. Students will test the developed modules and the final fully-integrated project following software development and research testing practices. Students must meet regularly with supervisor(s) who will monitor their continuous progress. Students are required to prepare a report and present their final work.

DSPD 2213: Ethics in Computing
This course will cover the social issues related to society, issues on history, development and economics of ICT will be covered. The issues that will be discussed include the effects of the ICT application on Malaysian society, the changing nature of work, the ethical issues and computer crime. The issues covered are relevant to being a responsible computer user, professional or personal to the students as an effort to elevate the value among the students.

SYNOPSIS OF ELECTIVE COURSES

CHOOSE 1 ONLY

DSPD 2533: Computer Graphics
This course introduces the concept of graphic design, graphics design components, elements of design and principles of graphics design. Topic on typography and layout of graphic design that will be utilized across all applications. Students will be introduced to major graphic design applications such as Logo/ symbols/ pictogram, Visual Identity/Branding; Poster; Book jackets and Magazine covers and Packaging design etc. This course helps develop hands-on skills on how to design/solve graphic design applications by using the graphic design drawing software such as Adobe Illustrator CS3.

DSPD 2543: Digital Audio Video
This course introduces students to basic theoretical and applications in audio and video technology especially digital medium; the usage of digital audio editing software; process, hardware and software handling/involvement in producing digital audio and video; students are also required to produce a simple digital audio production and digital video production. The course emphasizes on audio and video technologies, applications of the technology in producing meaningful pieces of audio and video files.

DSPD 2563: Computer Animation
This course helps students to develop their skills on how to create creative animation figures based on the basic procedures, guidelines and principles. Students will become more creative and innovative in designing new animation characters. Besides, it is important to make the still pictures move to perform an animation. Practically, students will learn how to create and edit animations by using Macromedia Flash. Students will improve their sense of observation, timing and motion through the real art of animation to create strong believable animation pieces. A good understanding of motion is an important foundation for using computers and technology to their full potential for the creation of animation.

SYNOPSIS OF INDUSTRIAL TRAINING COURSES

DSPD 3908: Industrial Training
This course exposes students to real industrial environments. Students are attached to a host organization for a period of 16 weeks and undergo training relevant to the aspects of work. Students are expected to apply the computing and information technology skills learned from the classroom to a real industrial environment. The performance of each student during the periods of his/her Industrial Training is evaluated jointly by the faculty staff, and the representatives from employer organizations.

SCIENCES AND SERVICES

SCIENCE AND SERVICES

SYNOPSIS OF SCIENCE COURSES

DSPS 1023: Engineering Mathematics 1

This course provides essential mathematical concepts and techniques necessary in various engineering disciplines. Students will explore fundamental topics along with their applications, forming the basis for learning in other core engineering courses. The lessons include topics on functions, solving equations, trigonometry, polar coordinates, sequences, series, the binomial theorem, matrices, determinants, and complex numbers. The course is delivered through interactive lectures and structured tutorials, supported by guided problem-solving activities. At the end of this course, students should have a solid mathematical foundation to excel in their engineering studies and apply mathematical principles effectively in their future careers.

DSPS 1133: Engineering Mathematics 2
(Prerequisite: DSPS 1023)

This course introduces students to advanced mathematical concepts relevant to engineering, enhancing their competency in using mathematical techniques to solve engineering problems. Topics covered include differentiation and integration of elementary and transcendental functions, first and second-order linear differential equations, Laplace transforms, Fourier series, and partial derivatives. The course is delivered through interactive lectures and structured tutorials, with emphasis on real-world applications and visual understanding. By the end of this course, students will have a solid foundation in calculus, enabling them to effectively solve engineering-related problems and apply mathematical principles in their future careers.

DSPS 1003: Fundamental Mathematics for Social Science

This course provides a comprehensive introduction to fundamental mathematical concepts relevant to a range of academic and practical applications. It is designed to strengthen students' foundational understanding of mathematics through problem-solving strategies. Students will explore key topics such as algebra, polynomials, geometry coordinates, linear and quadratic equations, quadratic functions, arithmetic and geometric progressions, and basic statistics. The course is delivered through interactive lectures, tutorials, and group assignment. At the end of the course, students will acquire essential algebraic skills, as well as fundamental statistical techniques to solve basic mathematical problems and interpret real-world data.

DSPS 1213: Business Mathematics

This course introduces fundamental mathematical concepts, techniques and their applications in business, economics, finance, and accounting. It aims to enhance students' mathematical proficiency in managing personal financial activities and business operations. Topics covered include coordinate geometry, elementary functions and graphs, equations, ratio, percentage and basic calculus concepts. Additionally, students will explore various methods for calculating interest, annuities, installment purchases, mark-up, and mark-down. The course is delivered through interactive lectures, structured tutorials, and guided problem-solving activities, with emphasis on real-world applications. At the end of the course, students should be able to apply these mathematical concepts effectively in both personal financial decisions and business activities, where proper decision-making is essential.

DSPS 2223: Business Statistics

This course is designed to expose students to the basic knowledge of statistics in the field of business. It consists of two main parts: descriptive statistics, which focuses on handling and summarizing data, and inferential statistics, where conclusions are drawn from sample data using tests such as hypothesis testing, analysis of variance, chi-square, correlation and regression. Basic probability, probability distribution, and sampling distributions serve as the foundation for inferential statistics. The course is delivered through a combination of lectures and practical sessions, emphasizing problem-solving and real-world application of statistical tools. At the end of the course, students should be able to solve problems related to business statistics.

DSPS 1132: Mathematics for Surveyor 1

This course introduces basic concepts in algebra and geometry to support further learning in surveying. Topics include algebraic expressions, conic sections, trigonometry, coordinate geometry, and polar coordinates. Teaching is delivered through lectures and hands-on activities, with emphasis on real-world applications and visual understanding. By the end of the course, students will be able to use algebraic and geometric methods to analyze problems, interpret spatial models and understand geometric relationships in surveying tasks.

DSPS 1142: Mathematics for Surveyor 2
(Prerequisite: DSPS 1132)

This course introduces basic mathematical concepts essential for students in the surveying discipline. Topics include matrices, systems of linear equations, vectors and fundamental principles of differentiation and integration. Teaching is conducted through lectures and structured tutorials, supported by guided problem-solving activities. By the end of the course, students will acquire core mathematical knowledge and be able to apply relevant techniques to solve standard problems in surveying practice.

DSPS 2043: Mathematics for Surveyor 3
(Prerequisite: DSPS 1142)

This course focuses on calculus, covering both differential and integral. It emphasizes the differentiation of multivariable equations, which are also known as partial differentials. Additionally, the course includes the study of first and second-order linear differential equations, and double integrals. Lessons also cover topics in statistics, probability, normal probability distribution, hypothesis testing, and simple linear regression. The course is delivered through interactive lectures and structured tutorials, emphasizing problem-solving and visual understanding. At the end of this course, students will acquire a solid understanding of basic calculus, as well as statistical techniques for data organization, representation, description, and analysis. Students will have the ability to test hypotheses and use the least squares method to determine regression models.

DSPS 1013: Mathematics for Computer Science

This course provides foundational mathematical knowledge essential for the study of computer science. It focuses on algebraic and calculus concepts that support computational thinking and problem-solving. The course covers essential topics such as set theory, number systems, functions and polynomials, as well as solving linear and quadratic equations. Additionally, students will explore vectors, matrices, differentiation, and integration of simple functions and their applications relevant to computer science. The course is delivered through interactive lectures, tutorials, think-pair-share, and group assignments. By the end of the course, students will be able to apply algebraic, matrix, and calculus techniques to model and solve fundamental problems in computational contexts.

DSPS 2313: Statistics

This course introduces students to basic statistics and probability concepts, forming an essential base for data analysis across various disciplines. The course covers fundamental statistical principles including discrete and continuous probability distributions, sampling distributions, and simple hypothesis testing. Students will also be introduced to simple linear regression and correlation analysis, enhancing their ability to handle real-world data. The course is delivered through a combination of lectures and practical sessions, emphasizing problem-solving and real-world application of statistical tools. By the end of the course, students will be able to apply probability principles, conduct basic statistical analyses, and interpret results in meaningful, real life contexts.

DSPS 1712: Physics

This course emphasizes the application of Newton's Laws of motion and fundamental physics principles in various kinds of motions such as linear motion, free fall, projectile motion, uniform circular motion, satellite motion and rotational motion. Definition of Newton's Laws, Hooke's Law and other concepts commonly encountered in physics and engineering. The forces include friction, normal reaction, weight, tension, and components of forces. The principles to be studied are the principle of conservation of total energy, total linear momentum, work-energy theorem, impulse-momentum theorem. Other related concepts to be covered include free body diagrams, equilibrium and non-equilibrium forces, inclined planes, connected bodies for objects at rest and in motion, work done, mechanical energy, momentum, torque, moments of inertia and rotational kinetic energy. A few experiments are included in the course to enhance the theoretical aspects of the course and enable students to develop their team working, communication and report writing skills.

DSPS 1713: Physics

This course emphasizes the application of Newton's Laws of motion and fundamental physics principles in various kinds of motions such as linear motion, free fall, projectile motion, uniform circular motion, satellite motion and rotational motion. Definition of Newton's Laws, Hooke's Law, Coulomb's Law and other concepts commonly encountered in physics and engineering. The forces include friction, normal reaction, weight, tension, components of forces and electrostatic force. The principles to be studied are the principle of conservation of total energy, total linear momentum, work-energy theorem, impulse-momentum theorem. Other related concepts to be covered include free body diagrams, equilibrium and non-equilibrium forces, inclined planes, connected bodies for objects at rest and in motion, work done, mechanical energy, momentum, torque, moments of inertia, rotational kinetic energy, electrostatic charge, current, resistance, solenoid and magnetism. A few experiments are included in the course to enhance the theoretical aspects of the course and enable students to develop their team working, communication and report writing skills.

DSPS 1733: Physics for Surveyor

This course is designed to provide understanding, knowledge and exposure on the theory and concept of physics related to geomatics engineering and its associated technologies. The course covers (1) Electromagnetics of waves and sounds with its physical interaction, (2) Wave Propagation, (3) Gravity, (4) Orbital mechanics and (5) Optics. Students will be exposed to the fundamentals of physics through lectures, short computational experiments and scientific discussion in each topic. At the end of this course students should relate and apply the physics theory in land surveying field.

SYNOPSIS OF LANGUAGE COURSES

UHLB 1032: Introductory Academic English
This beginner course is designed to develop students' receptive and productive academic skills. For receptive skills, students will be guided to listen to and read academic texts as well as respond to questions based on the texts. For the productive skill of speaking, students will be given guidance on how to deliver a short speech based on topics of their choice. This course will also familiarise students with paragraph writing that describes visual/non-linear information and essay writing on problem-solution topics. It also provides enrichment activities to complement the development of both receptive and productive skills through self-accessible materials. At the end of the course, students should be able to apply these skills in current and future academic settings.

UHLB 1042: Intermediate Academic English
This course reinforces and enhances the development of students' receptive and productive skills relevant to academic contexts. The skills are integrated in various task-based activities. These include reading academic texts critically for specific information, listening for main ideas and specific information, writing essays and descriptions based on various non-linear texts, taking notes and participating in group discussions. In addition, the course fosters independent learning activities facilitated by online resources. At the end of the course, students should be able to incorporate relevant skills learned to perform tasks in academic context.

SYNOPSIS OF UNIVERSITY COURSES

ULRS 1032: Integrity and Anti-Corruption Course
This course highlights the main core of UTM which is the driving force to creative and innovative human capital to meet the country's needs for the future. The main thrust is Integrity, Synergy, Excellence and Sustainability (ISES-Integrity, Synergy, Excellence and Sustainability). The foundation that underlies this course is the value of integrity, value and self-identity that containing all forms of prevent abuses of power in everyday life as well in organizations such as corruption; and strengthen the measure of anti-corruption prevention. This course also emphasizes the importance of value systems and ethics, which includes aspects of relationships between people and managing / appreciating diversity. In addition, the course also emphasizes holistic solutions to current issues, transformation and innovation, philosophy of science and technology which is based on values, integrity and identity towards achieving goals in produce graduates who excel in terms of physical, emotional, spiritual and intellect. This effort is in line with the country's commitment in implementing the Agenda Sustainable Development (SDG) by 2030 through the Shared Prosperity Vision 2030 in providing a good standard of living for all citizens.

ULRS 1182: Appreciation of Ethics and Civilisation
This course discusses about ethical concepts from different civilisation perspectives. This course prepares students to appreciate the ethics and civilisation inherent in the diverse ethnic communities in Malaysia It aims to identify the systems, stages, development and culture of a nation in strengthening social cohesion. In addition, discussions on contemporary issues in the economic, political, social, cultural and environmental aspects from an ethical and civil perspective that can produce students who are morally and professionally. The application of appropriate high impact education practices (HIEPs) is used in the delivery of this course.

UHLM 1122: Malay Language for Communication 1
This course trains international students to communicate in Basic Malay Language which covers daily life situations. Students will be introduced to the basic spoken and written in the Malay Language. Teaching and learning will be carried out in the form of lectures, tutorials, assignments, and student experiences inside and outside the classroom. At the end of the course, students are expected to be able to communicate and write essay using simple sentences effectively.

SYNOPSIS OF SERVICE LEARNING & COMMUNITY ENGAGEMENT COURSES

ULRF 2902: Kelana Siswa / Scout
This course will expose students on leadership training, scout law and treaty, patrolling system, scout ceremony, knots- tying and scout pilot project paper, camping and learning services as set out in the Malaysian Scout Association Training Scheme.

ULRF 2142: ICT Communities Services
This course exposes students to the knowledge of ICT (Information, Communications and Technology) and its implementation in the development of a community in general.

ULRF 2092: STEM Literacy
STEM Literacy course (Science, Technology, Engineering and Mathematics) will expose students to the STEM disciplines plan activities and carry out STEM activities to reignite interest in science and mathematics in the society. Students are required to perform activities such as clinics, seminars or others related to STEM to share knowledge with the community in addition to other interaction activities with the community.

ULRF 2492: Photocreative Services
This course is conducted with a service learning project where students need to practice relevant co-curricular knowledge so that it can be utilized by the community in various forms such as by conducting workshops, talks, competitions and development in the community and others deemed appropriate by the group of students, lecturers and coaches. In addition, students have the opportunity to practice knowledge transfer activities to the community by providing feedback on local community issues. Students can also communicate with other organizations that can help make the community project a success in various forms including obtaining financial resources. Extra-curricular experiential learning is also in-cooperated in the course where students reflect on the practices of sustainability principles based on their participation in one relevant activity.

ULRF 2342: Mosque Management and Community Development
This course exposes students to group work skills, leadership skills, lifelong learning and ethical skills. All of these skills will be built through learning about mosque management and community development. Life-long learning also covers self -management and leadership in society; organization mosques and financial management. Team working skills and leadership skills applied through community service projects regarding management mosque activities.

ULRF 2262: Information Exploration
This course exposes the skills and knowledge of information seeking covering various sources of print and electronic materials. These information retrieval skills build skills students to be more effective and systematic in the search for information and materials that include printed materials and electronic materials provided in the library for the student learning process generally.

ULRF 2012: Financial Literacy
This course exposures the basic concepts and goals of personal finance, which include individual financial risk management and individual and zakat tax planning. Through various assignments individually assigned each week, students are expected to be able to formulate goals their personal finances that are useful to them in the future.

ULRF 2782: Trekking
This course exposes the concept of trekking from theoretical and technical aspects. The basics of this skill will be learned by the students practically through the prescribed exercises.

ULRF 2062: Iqra'
This course introduces the student to learn Quran easily and fast through Iqra' method and apply the official Uthmani' punctuation marks and reading signs in reading the Quran. All these skills will be built through learning the Qur'an using the Iqra Module.

ULRF 2522: Theatre
This course will expose students to the features of welfare through acting. Students will be able to organize an effective team/group through the preparation and implementation of an acting or script and able to communicate and interact effectively before and while on stage.

ULRF 2762: Tennis
This course introduces students to the basics of skills, rules, games and organizing programs related to tennis. Through the learning gained from lectures and practical, students need to practice their knowledge and skills in community based on programs such as workshops, clinics and competition organization.

ULRF 2322: Drug Prevention Education
This course introduces the basic knowledge of Drug Prevention Education which covers aspects of safety, health, social and legislation especially drug prevention education knowledge, types of drugs, effects/ consequences of taking drug on humans, law enforcement, profiling an addict and ex -addict, the process of rehabilitation/ treatment and implementation of activities. This course is conducted with a service-learning approach which students need practicing knowledge of drug prevention education by running projects community development within the appropriate scope. In addition, students need to demonstrate good communication skills and current public speaking teamwork in implementing a volunteer and service project community.

ULRF 2192: Digital Workforce
This course in particular is to build entrepreneurial skills by doing digital work through crowdsourcing methods. This course builds digital work skills group and leadership, adaptability skills, lifelong learning and ethical skills. Finally, this course as well implement experiential learning through service-learning programs. Students will transfer the knowledge learned to the community through the activities carried out.

ULRF 2112: Social Media and Branding
This course addresses the theory and practice of Social Media Branding. The primary goal of the course is to serve as a foundation for further exploration in social media and branding. Students will learn how to manage their brand either personal brand or business brand on social media and how to create a social media strategy. Students will learn various theoretical frameworks towards an optimal social media strategy in a specific industry through discussions and case studies. Main topics include the importance of branding strategy and the social media advertising, the benefits of listening to social media users as the new customer relationship platform and aligning institutional objectives and goals**.**

ULRF 2282: Sustainability Community
This Sustainability Community course is a course that involves a community service project especially related to community development sustainable. Besides, it is also involving student activities that aimed to fulfill the needs of the identified community as well to help develop their academic skills and commitment to sustain the community development. Students will work in groups and will be able to function effectively in social and professional contexts. Development soft skills will also be emphasized when managing projects such as skills to work in groups and solve problems that are particularly in environmental aspects of a community. Students will eventually be required to make reflection on the project to strengthen their learning process and make improvements in the future.

ULRF 2182: Drone Technology
Along with the development of industrial revolution 4.0 and the challenges that will be faced by our country, so this course aims to prepare UTM students with understanding and skills related to drones. Student will be technically exposed to drone technology and its use in help solve problems in society. This course is to build teamwork and leadership skills, adaptability skills, lifelong learning, and ethical skills. All these skills will be built through assignments and activities set in this course. Teamwork skills, leadership and scholarship are measured through hands-on projects where students must assemble and build a drone that can works. This course also applies experiential learning through the program service learning. Students will transfer the knowledge they have learned to community through the activities carried out. All this will be done with the guides and professional ethics that need to be practiced when handling service learning and drones to ensure safety aspects maintained.

ULRF 2402: Gamelan
This course provides basic knowledge of gamelan for university students. Students are also given exposure to basic skills of the instruments of the gamelan. This course is conducted with a service learning project where students need to practice relevant co-curricular knowledge so that it can be utilized by the community in various forms such as by conducting workshops, talks, competitions and performance of gamelan in the community and others deemed appropriate by the group of students, lecturers and coaches. In addition, students have the opportunity to practice knowledge transfer activities to the community by providing feedback on local community issues. Students can also communicate with other organizations that can help make the community project a success in various forms including obtaining financial resources. Extra-curricular experiential learning is also in-cooperated in the course where students reflect on the practices of sustainability principles based on their participation in one relevant activity.

ULRF 2742: Silat Gayung
This course provides basic knowledge of silat gayung for university students. Students are also given exposure to basic skills of the self defense. This course is conducted with a service learning project where students need to practice relevant co-curricular knowledge so that it can be utilized by the community in various forms such as by conducting clinics, campaigns, tournament of silat gayung development in the community and others deemed appropriate by the group of students, lecturers and coaches. In addition, students have the opportunity to practice knowledge transfer activities to the community by providing feedback on local community issues. Students can also communicate with other organizations that can help make the community project a success in various forms including obtaining financial resources.The course is also embedded with Extra-curricular Experiential Learning activities, where students reflect their experiences in joining one relevant activities registered in UTM.

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