UTHM
Universiti Tun Hussein Onn Malaysia

ACADEMIC PROFORMA

2021/2022

CENTRE FOR DIPLOMA STUDIES
CEDS

DIPLOMA IN CIVIL ENGINEERING

QS STARS™ RATING SYSTEM

Universiti Tun Hussein Onn Malaysia
Is Rated as a Five-Star Institution

QS STARS™ RATING SYSTEM Teaching
QS STARS™ RATING SYSTEM Employability
QS STARS™ RATING SYSTEM Innovation
QS STARS™ RATING SYSTEM Online Learning
QS STARS™ RATING SYSTEM Inclusiveness

UTHM Produces Professionals

PUSAT PENGAJIAN DIPLOMA
UTHM KAMPUS PAGOH, HAB PENDIDIKAN TINGGI PAGOH
KM 1, Jalan Panchor, 84600, Panchor, Johor.

Information contained in this proforma is true at the time of printing and the University has the right to make any amendment according to needs.

Contents

Foreword from Vice Chancellor

Assalammualaikum Warahmatullahi Wabarakatuh and greetings.

I would like to congratulate and welcome all students who will embark on the next important chapter of your life here at UTHM. We appreciate your trust for choosing to be with UTHM in continuing your endeavor for success in your life.

The Coronavirus Disease 2019 (Covid-19) has continue to deny new and current students the opportunity to experience higher education environment one would dream. The innovation of vaccines has given us the ray of hope that would eventually allow us to do what we do best, i.e. educating the young and bright Malaysians like you.

I would like to highlight that UTHM has set four main pillars in order become a global technoprenuer university. They are Edu-Train, Technopreneur, UTHM Prihatin and Governance. At the heart of these pillars are the students and staffs who will be the driving force for success. As a new student to this university, it is my hope that you will participate and contribute to the mission of the university.

Nevertheless, UTHM will continue to strive in providing the best learning experience available. Academic programmes are continuously reviewed to ensure that the most recent educational initiatives are implemented. This is in line with the aspirations of the Ministry of Higher Education Malaysia in transforming learning and teaching process to be more flexible, organic, dynamic and effective. Additionally, initiatives such as High Impact Educational Practices (HIEPs), Future Ready Curriculum (FRC), Entrepreneurship Integrated Education (EIE) will take centre stage and shape the academic curriculum, which will increase the Graduate Employability (GE). These initiatives, coupled with dedicated academics and world class facilities will produce holistic graduates and later professionals, as promised in our tagline, ‘UTHM Produces Professional”.

On a final note, I would like to again welcome all students to our big family. I believe that you will become successful university graduates and will continue the university tradition of academic excellence. I am also confident that you will be able to apply knowledge and skills gained for the benefit of the society.

Best wishes.

Y. BHG. PROFESSOR DATUK TS. DR. WAHID BIN RAZZALY
Vice Chancellor
Universiti Tun Hussein Onn Malaysia

Foreword from Deputy Vice Chancellor (Academic and International)

Assalammualaikum Warahmatullahi Wabarakatuh and greetings.

I would like to take this opportunity to congratulate and welcome all new students of the academic session 2021/2022 to Universiti Tun Hussein Onn Malaysia (UTHM). Similarly, my congratulations to the Centre for Academic Development and Training for successfully publishing this proforma in which can become a guide for the students to plan their learning journey at the university.

As everyone is aware, the Covid-19 pandemic has continued to change Malaysia's higher education landscape. All universities must adjust to the new norm which affects the learning and teaching process. Students and lecturers are left with no other options than to continue with online classes. Thus, UTHM will continue to ensure quality education through innovative delivery and world class facilities so that no student will be left behind.

Apart from the above, the higher education in Malaysia has evolved from teacher-centered to student-centered learning. In addition, much initiatives have been rolled out towards the development of holistic and balanced graduates in terms of ethic, moral, knowledge, and skills. In order to improve the quality of learning and teaching, Industry Revolution 4.0 and work-based learning elements are embedded into the curriculum to ensure that academic programmes offered by UTHM continue to be relevant to the needs of current industry and market. Apart from that, knowledge and experience sharing between the key players of local and foreign industries in relation to industries and students as well as local community are delivered through CEO@Faculty programs.

UTHM with much effort and dedication will strive to become the champion of TVET. The existing academic programmes are aligned towards producing excellent TVET graduates. New programmes are developed to cater for new areas in TVET, which are seen to be the dominant workforce in Malaysia. It is hoped that all these efforts will further accelerate UTHM in becoming a global technopreneur university.

I do hope that all the initiatives which have been and will be rolled out by UTHM will give you valuable experiences in exploring knowledge and skills at UTHM. I would like to call out on you to take the opportunity to explore your own potential through various co-curricular activities and programmes prepared by UTHM. To achieve these aspirations, early preparations guided by this proforma will help you plan for your journey throughout your studies at UTHM. I hope you will be able to achieve excellent academic results and outstanding success.

Finally, I wish you all the best and pray that you will be successful in your studies at the university and be able to contribute to the development of the religion, race and nation.

"WITH WISDOM WE EXPLORE"

PROFESSOR DR. AZME BIN KHAMIS
Deputy Vice Chancellor (Academic and International)
Universiti Tun Hussein Onn Malaysia

Foreword from the Dean of Centre for Diploma Studies

Assalamualaikum Warahmatullahi Wabarakatuh and Warm Greetings

Congratulations and welcome to all of you that have made the right choice of taking the first step in joining Universiti Tun Hussein Onn Malaysia (UTHM) that is the 15th IPTA established in Malaysia. I wish to welcome all of you to the Centre for Diploma Studies (CeDS) which is always ready to support and train you to be a semi-professional in the field of engineering, science and technology.

As a center, we are responsible for running and operating the Diploma programmes at UTHM, CeDS has a clear vision and mission in developing and empowering all Diploma programmes offered. Currently, six (6) Diploma programmes being offered and the number of programmes will be increasing in the future in line with the country's employment needs. I believed you have chosen a suitable programme that suits your qualifications and dreams. Furthermore, the study period for all programmes is only 2 years and 9 months, the student will be completed their studies in a shorter time. In the meantime, Diploma graduates will be absorbed to continue to follow the Bachelor Degree programmes at UTHM with respect to the terms and conditions imposed.

In terms of infrastructure and teaching and learning facilities provided at UTHM have been recognized to fulfill the standard required accreditation bodies. In addition, the rapid development of the UTHM campus will now ensure the comfort of students with various facilities provided including libraries, residential colleges, cafeterias, sports activities, wireless internet connection, and various other amenities.

I hope that as a new student of the UTHM Diploma in UTHM, you will use this proforma as a guide and reference to facilitate you to plan and subsequently complete your diploma study program with excellence.

Wishing You Success.

ASSOCIATE PROFESOR DR. MOHAMAD ZAKY BIN NOH
Dean
Centre for Diploma Studies
Universiti Tun Hussein Onn Malaysia

Vision

Towards a world class university in engineering, science and technology for sustainable development.

Mission

UTHM is committed to generate and disseminate knowledge, to meet the needs of industry and community and nurturing creative and innovative human capital, based on the tauhidic paradigm.

Education Philosophy of University

The education and training practice in this university is a continuous effort to become the leader in market oriented academic programmes. These programmes are student-focused and are conducted through experiential learning in order to produce well trained human resource and professionals who are catalysts for sustainable development.

Logo of University

The logo of UTHM displays a proton, a book, a tiered mortar board (levels of learning), a book-rest and a shield.

Symbolism:

- Red — Bravery
- Blue — Collaboration
- Silver — Quality/ Prestige
- Book-rest — Knowledge
- Proton — Science and Technology
- Book — Knowledge
- Mortar board — Levels of study
- Circle — Resilient and related to global characteristics
- Shield — Confidence

The whole concept of the logo represents UTHM as a learning institution that supports knowledge expansion and development at all levels of study in science and technology.

Blue represents the close relationship among UTHM community in ensuring successful and resilient implementations of the University programmes as well as its education and research activities that are carried out for the benefit of mankind.

Red symbolises the adventurous nature of UTHM in exploring new fields to establish itself as a leader in the applications of science and technology. Thus, this reflects the spirit and self-esteem of the UTHM community

.**Chancellor**

Duli Yang Maha Mulia Sultan Ibrahim Ibni Almarhum Sultan Iskandar
Sultan Yang Dipertuan Bagi Negeri Dan Jajahan Takluk Johor Darul Ta'zim
D.K., D.K.(Pahang), SPMJ, SSIJ,S.M.N.,S.P.M.T., S.M.P.K., P.I.S.

Pro Chancellor I

Duli Yang Amat Mulia Tunku Ismail Ibni Sultan Ibrahim
Tunku Mahkota of Johor (TMJ)
D.K., SPMJ, P.I.S

Pro Chancellor II

YBhg. Tan Sri Dr. Ali Hamsa

Board of Directors of University

Chairman

YBhg. Dato' Sri Ibrahim bin Ahmad

Members

YBhg. Prof. Datuk Ts. Dr. Wahid bin Razzaly
Vice Chancellor, Universiti Tun Hussein Onn Malaysia

YB. Dato' Haji Nooh bin Gadot
Advisor, Majlis Agama Islam Johor

YBhg. Datuk Ts. Pang Chau Leong
Member, Board of Directors

YBhg. Dato' Dr. Mohd. Padzil bin Hashim
Putra Business School, Universiti Putra Malaysia

YBhg. Dato' Ir. Dr. Haji Abdul Rashid bin Maidin
Managing Director, Pusat Bertauliah Akademik Profesional Koperasi Serbaguna Anak-anak Selangor Berhad (KOSAS)

YBrs. En. Ahmad Luqman bin Mohd. Azmi
Chief Operations Officer, Malaysia Airlines Berhad

YBrs. Dr. Sharifah Adlina binti Syed Abdullah
Ministry of Finance Malaysia

YBrs. Mr. Shahril Anwar Mohd Yunos
Managing Partner, Virtus Capital Partners Sdn Bhd

YBrs. Ts. Zainab binti Ahmad
Chief Director, Jabatan Pendidikan Politeknik dan Kolej Komuniti, Kementerian Pengajian Tinggi

YBrs. Prof. Dr. Yusri bin Yusof
Professor, Universiti Tun Hussein Onn Malaysia

Alternate Member

YBrs. Ts. Haji Mohamad Amin bin Hamat
Deputy Chief Director, Ministry of Higher Education

Secretary

En. Abdul Halim bin Abdul Rahman
Registrar, Universiti Tun Hussein Onn Malaysia

Members of Senate

Chairman

YBhg. Prof. Datuk Ts. Dr. Wahid bin Razzaly
Vice Chancellor

Members

Prof. Dr. Azme bin Khamis
Deputy Vice Chancellor (Academic and International)

Prof. Dr. Mohd Shahir Shamsir Bin Omar
Deputy Vice Chancellor (Research and Innovation)

Assoc. Prof. Ts. Dr. Lokman Hakim bin Ismail
Deputy Vice Chancellor (Student Affairs and Alumni)

Assoc. Prof. Dr. Mohd Kamarulzaki bin Mustafa
Provost UTHM Pagoh Campus

Prof. Dr. Ahmad Tarmizi bin Abd Karim
Assistant Vice Chancellor (Strategic Planning and Corporate Relations)

Assoc. Prof. Dr. Mas Fawzi bin Mohd Ali
Assistant Vice Chancellor (Financial Sustainability)

Prof. Dr. Shahruddin bin Mahzan @ Mohd Zin
Dean, Centre for Graduate Studies

Assoc. Prof. Ir. Ts. Dr. Mohd Irwan bin Juki
Dean, Faculty of Civil and Environmental Engineering

Assoc. Prof. Dr. Rosli bin Omar
Dean, Faculty of Electrical and Electronic Engineering

Assoc. Prof. Ir. Ts. Dr Bukhari bin Manshor
Dean, Faculty of Mechanical and Manufacturing Engineering

Prof. Dr. Wan Fauzi@Fauziah binti Wan Yusoff
Dean, Faculty of Technology Management and Business

Assoc. Prof. Ts. Dr. Abdul Rasid bin Abdul Razzaq
Dean, Faculty of Technical and Vocational Education

Ts. Dr. Azizul Azhar bin Ramli
Dean, Faculty of Computer Science and Information Technology

Prof. Dr. Hashim bin Saim
Dean, Faculty of Applied Science and Technology

Assoc. Prof. Dr. Jumadi bin Abdul Sukor
Dean, Faculty of Engineering Technology

Assoc. Prof. Dr. Mohamad Zaky bin Noh
Dean, Centre for Diploma Studies

Assoc. Prof. Dr. Khairul Azman bin Mohamad Suhaimy
Dean, Centre for General Studies and Co-curricular

Dr. Zailin Shah binti Yusoff
Dean, Centre for Language Studies

Prof. Dr. Erween bin Abdul Rahim
Director, Centre for Academic Development and Training

Assoc. Prof. Ts. Dr. Razali bin Hassan
Director, Malaysia Research Institute for Vocational Education and Training

Prof. Ts. Dr. Abd Halid bin Abdullah
Faculty of Civil and Environmental Engineering

Professor Dr. Noridah binti Mohamad
Faculty of Civil and Environmental Engineering

Prof. Dr. Mohammad Faiz Liew bin Abdullah
Faculty of Electrical and Electronic Engineering

Prof. Ir. Dr. Md Saidin bin Wahab
Faculty of Mechanical and Manufacturing Engineering

Prof. Dr. Yusri bin Yusof
Faculty of Mechanical and Manufacturing Engineering

Prof. Dr. Abdul Talib bin Bon
Faculty of Technology Management and Business

Prof. Dr. Rosziati binti Ibrahim
Faculty of Computer Science and Information Technology

Prof. Dr. Nazri bin Mohd Nawi
Faculty of Computer Science and Information Technology

Prof. Dr. Rozaini bin Roslan
Faculty of Applied Science and Technology

Assoc. Prof. Ts. Dr. Mohd. Farhan bin Md. Fudzee
Director, Information Technology Centre

Ir. Ts. Dr. Rahab inti Abdul Rahman
Industry Fellow

En. Abdul Halim bin Abdul Rahman
Registrar / Secretary of Senate

Mr Norzaimi bin Hamisan
Bursar

Mdm. Zaharah binti Abd Samad
Acting Chief Librarian

Mdm. Norliah binti Yaakub
Head of Legal Unit

Centre for Diploma Studies

Centre Vision

Excellent in providing multi disciplinary education in science and technology

Centre Mission

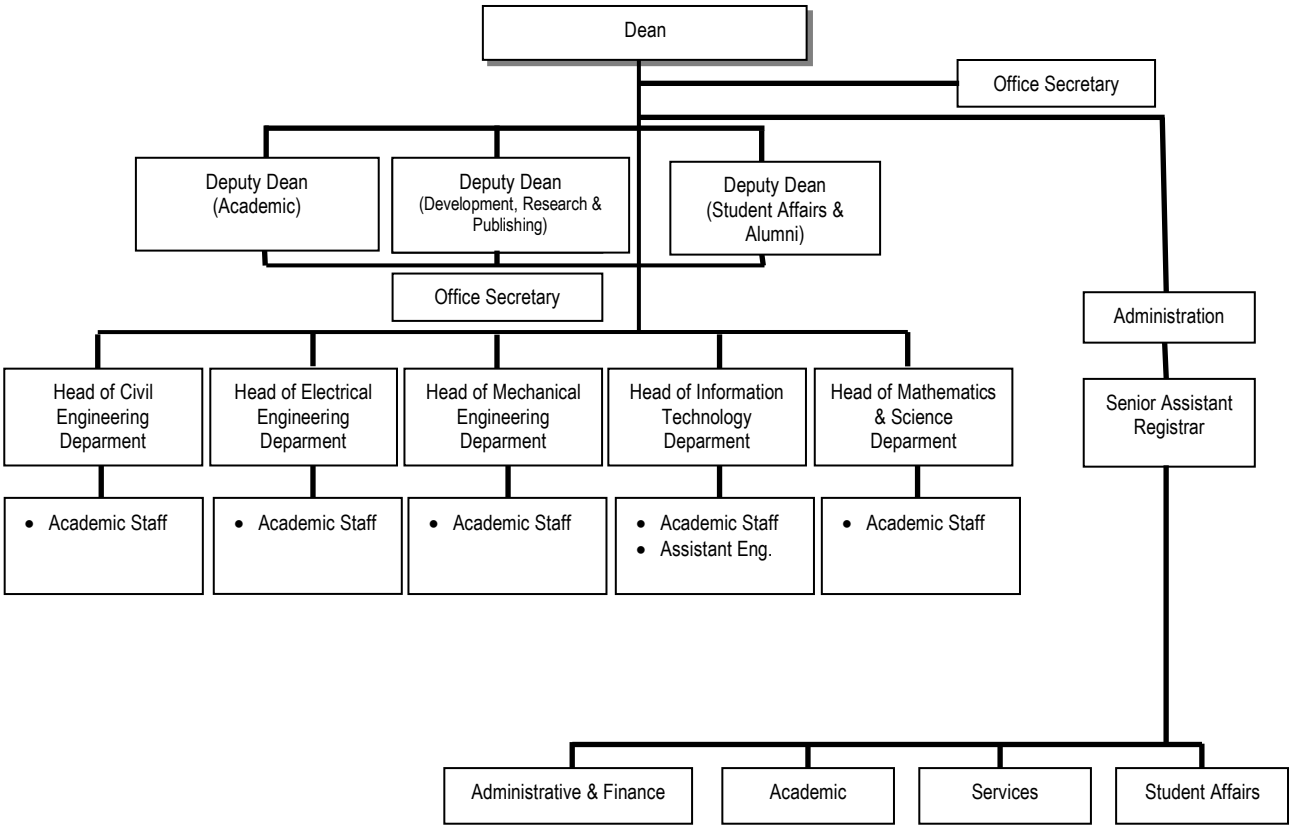
Producing graduates who contribute to national development through a holistic academic program

Diploma programmes had been offered in UTHM since the establishment of Pusat Latihan Staf Politeknik (PLSP) in 1994. It started with only three programmes which were managed by the respective departments. All programmes were transferred to the corresponding faculties when Kolej Universiti Teknologi Tun Hussein Onn (KUiTTHO) was established in 2001.

The establishment of the Centre for Diploma Studies was announced by the Vice Chancellor on the 1st of August 2009. This enabled all diploma programmes to be centrally managed under one roof which would increase the competitiveness of the programmes offered.

It is the aim of the Centre for Diploma Studies to offer diploma programmes at UTHM which are going to be the main choice of applicants. All diploma programmes at UTHM are conducted using the Outcome Based Education (OBE) philosophy since 2010/2011 academic session. The implementation of OBE is in line with the wish of the Ministry of Higher Education in ensuring the highest quality of graduates. Students are expected to show academic excellence, as well as participating in co-curriculum activities which will further develop their potential in order to achieve the quality needed to fulfill the global occupational market. In addition, graduates of these programmes also have the widest opportunity to further their studies at Bachelor Degree level at various faculties in UTHM.

Now, the Centre for Diploma Studies offers six (6) diploma programmes which are managed by five (5) departments and is led by a Dean who is assisted by three (3) Deputy Deans. The organizational chart of the Centre for Diploma Studies is shown in the next page.



Organisational chart of the Centre for Diploma Studies

Centre External Examiner and Industrial Advisor

Department of Civil Engineering

External Examiner

Assoc. Prof. Dr. Ir. Hjh. Che Maznah Mat Isa
PhD (Civil) (UiTM), MSc. (Integrated Construction Project Management) (UiTM), BEng (Hons) (Civil Engineering) (Univ. North Carolina, US), Pre-Eng. (Columbia Greene-Community College, US).

Industrial Advisor

Br. Mohd Dhiya Hafreez B. Kamil
BEng. (Civil)(UTM), Mara Found. (Sci. Eng.) (UTM)

Pn. Rasilah Binti Abdul Rashid
BEng. (Civil)(UTHM)

Faculty Staff Directory

Administration

Dean
Professor Madya Dr. Mohamad Zaky bin Noh
Ph.D (Physic)(USM), MSc. (Physic)(UTM), BSc. (Physic)(UTM)

Deputy Dean (Academic)
Ts. Hj. Amir Khan bin Suwandi
MEng. (Civil Engineering) (UTM), BEng. (Hons) (Civil Engineering) (Portland State Univ. USA), Dip. Ed.(Civil Engineering Studies) (UTM)

Deputy Dean (Student Affairs and Alumni)
Pn. Ziana binti Che Ros
MEng. (Electrical Engineering) (UTHM), BEng. (Hons) (Electrical Engineering) (UTM), Dip. Ed.(Electrical Power Engineering) (UTM)

Deputy Dean (Development, Research and Publication)
Professor Madya Ts. Hj. Masiri bin Kaamin
MSc.(Land Survey-GIS) (UTM), BSc.(Land Survey) (UTM)

Assistant Office Secretary
Nor Suraya binti Abdul Samad
BSc. (Computer Mathematics) (UiTM), Dip. (Computer Science)(UiTM)

Administrative Assistant (Deputy Dean Secretary)
Nurul Farhana binti Ashaari
Dip. (Public Administration) (Diploma Vokasional Malaysia)

Senior Assistant Registrar
Cik Norfaizah binti Sai
BSc. Human Resources (UPM)

Assistant Administrative Officer (Academic)
Latifah binti Mohd Nasir
Dip.(International Business) (Politeknik Shah Alam)

Assistant Administrative Officer (Administrative and Finance)
Nur Izzati Hazwani binti Muhammad Ridwan
BSc. (Administration)(UiTM), Dip. (Tech. Management) (UTM)

Senior Administrative Assistant (Clerical & Operation) Student Affairs and Alumni
Ismade bin Niam

SeniorAdministrative Assistant (Clerical & Operation) Administrative and Finance
Dorazi bin Md Noh

Administrative Assistant (Clerical & Operation) Academic
Razali bin Ahmad

Administrative Assistant (Clerical & Operation) Development, Research and Publication
Muhammad Firdaus bin Yaacob
Operation Assistant
Azwan bin Roslee

Department of Civil Engineering

Academic Staff

Head of Department
Ts. Dr. Norhayati binti Ngadiman
PhD. (Environment and Development) (UKM), M Ed. (Technic and Vocational Ed.) (UTHM), BSc, (Mineral Resources) (USM)

Head of Programme
Dr. Noorul Hudai binti Abdullah
PhD. (Civil Engineering) (UTM), BEng. (Civil Engineering) (UTHM), Dip. (Civil Engineering) (UTHM)

Ts. Hj. Amir Khan bin Suwandi
MSc. (Civil Engineering) (UTM), BSc. (Hons) (Civil Engineering) (Portland State Univ. USA), Dip. Ed.(Civil Engineering Studies) (UTM)

Professor Madya Ts. Hj. Masiri bin Kaamin
MSc.(Land Survey-GIS) (UTM), BSc.(Land Survey) (UTM)

Hj. Mohd Jahaya bin Kesot
MSc. (Civil Engineering) (UTHM), BSc. (Civil Engineering) (Univ. of Miami, USA)

Ts. Mohd Erwan bin Sanik
MSc. (Civil Engineering) (USM), BEng. (Civil Engineering)(USM)

Ts. Aslila binti Abd Kadir
MSc. (Construction Management) (UTM), BSc.(Hons) (Housing, Building and Planning) (USM), Cert.(Quantity Survey) (POLIMAS)

Pn Nor Baizura binti Hamid
BSc. (Hons) (Civil Engineering), (UTHM)

Pn Mardiha binti Mokhtar
MSc.(Civil Engineering) (UTHM), BSc. (Hons)(Civil Engineering) (UTHM), Dip. (Civil Engineering Technology)(UTHM)

Ts. Hj. Salman bin Salim
MEng. (Civil Engineering) (UTHM), BEng. (Civil Engineering) (UTM), Dip. (Civil Engineering)(UTM), Cert. (Civil Engineering)(Politeknik Ungku Omar)

En. Khairul Zaman bin Abdul Malek
BEng (Hons) (Civil Engineering), (UM)

Ts Ahmad Hakimi bin Mat Nor
MEng. (Civil Engineering) (UTHM), BEng. (Civil Engineering) (UTHM), Dip. (Civil Engineering)(UTHM)

Ts. Izat bin Yahya
MEng. (Civil Engineering) (UTHM), BEng. (Civil Engineering) (UTM), Dip. (Civil Engineering)(UiTM)

Pn Suhaila binti Sahat
MEng. (Hydrology and Water Resources)(UTM), BEng. (Civil Engineering)(UTM), Dip. (Civil Engineering)(UTM)

Cik Siti Nooraiin bin Mohd Razali
MEng. (Civil Engineering)(UTHM), BEng. (Civil Engineering)(UTHM)

Pn Nor Farah Atiqah binti Ahmad
MEng. (Civil – Hydraulic and Hydrology)(UTM), BEng. (Civil Engineering)(UTM)

Dr Hairuddin bin Mohammad
PhD (Built Environment) (UTM), MSc. (Construction Management)(UTM), BEng. (Civil)(UTM), Dip. (Civil)(Politeknik Kota Bharu)

Dr Mohamad Azim bin Mohammad Azmi
PhD. (Civil Engineering) (UTHM), MEng. (Civil) (UTHM), BEng. (Civil)(UTHM)

Dr Khairi bin Supar
PhD. (Civil Engineering) (UTHM), BEng. (Civil)(UTHM), Dip. (Civil Engineering) (Politeknik Port Dickson)

Dr Nur'ain binti Idris
PhD. (Civil & Structure Engineering)(Kyushu University), MEng. (Civil) (UTM), BEng. (Civil)(UTM)

Dr. Muhammad Azraie Bin Abdul Kadir
PhD. (Civil Engineering) (USM), MEng. (Civil) (UiTM), BEng. (Hons) (Civil) (UiTM), Dip. (Civil) (UiTM)

Programme Name

Diploma in Civil Engineering (DAA)

Programme Aims

To produce graduates who are more mature and competent to fulfill the nation needs of skill and expert workers in the field of Civil Engineering whether in the public, private or self employed sector. The programme also prepares students to further their studies to degree level at any university locally or internationally.

Programme Educational Objectives (PEO)

These are the PEOs for graduates of Diploma in Civil Engineering:

PEO 1	Technically competent in solving civil engineering problems and produce work of quality accepted locally and globally
PEO 2	Demonstrate professionalism, ethics and sustainable values in civil engineering practice
PEO 3	Communicate effectively and demonstrate good leadership at workplace and community
PEO 4	Practice entrepreneurship skills and integrating lifelong learning in career development

Programme Learning Outcomes (PLO)

These are the PLOs (upon graduation) for Diploma in Civil Engineering:

PLO 1	Apply knowledge of applied mathematics, applied science, engineering fundamentals and specialization to wide practical procedures and practices in the field of Civil Engineering. (**Knowledge**)
PLO 2	Identify and analyse well-defined civil engineering problems reaching substantiated conclusions using codified methods of analysis specific to civil engineering activities. (**Problem Analysis**)

PLO 3 Design solutions for well-defined technical problems and assist with the design of systems, components or processes to meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. (**Design & Development Solutions**)

PLO 4 Conduct investigations of well-defined Civil Engineering problems with ability to locate and search relevant codes and catalogues, conduct standard tests and measurements. (**Investigation**)

PLO 5 Apply appropriate techniques, resources, and modern engineering and IT tools to well-defined Civil Engineering problems, with an awareness of the limitations. (**Modern Tools Usage**)

PLO 6 Demonstrate knowledge of the societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to engineering technician practice and solutions to well-defined civil engineering problems. (**The Engineer & Society**)

PLO 7 Understand and evaluate the sustainability and impact of engineering technician work in the solution of well-defined Civil Engineering problems in societal and environmental contexts. (**Environment & Sustainability**)

PLO 8 Understand and commit to professional ethics and responsibilities and norms of technician practice. (**Ethics**)

PLO 9 Function effectively as a leader, and as a member in diverse technical teams. (**Social, Teamwork and Leadership Skills**)

PLO 10 Communicate effectively on well-defined Civil Engineering activities with the learned 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. (**Communication Skill**)

PLO 11 Demonstrate knowledge and understanding of Civil Engineering management principles and apply these to one's own work in a technical team and to manage projects in multidisciplinary environments. (**Project Management and Finance**)

PLO 12 Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge. (**Lifelong Learning**)

Curriculum Structure

Table 1: Summary of Diploma in Civil Engineering Curriculum

Year	Semester	Course Code	Courses	Credit	Total
	Special	UHB 10302 UQU 10403 UQI 10402/202	English for Academic Survival Introduction to Nationhood and Malaysia Development Introduction to Islamic Studies/ Moral Studies	2 3 2	7
1	I	UWB 10*02 UQ* 1***1 DAC 11103 DAC 11203 DAC 11603 DAC 11703 DAC 11803	International Language Co-Curriculum I Algebra Engineering Mathematics I Civil Engineering Materials Engineering Drawing Statics and Dynamics	2 1 3 3 3 3 3	18
	II	UHB 20302 UQI 11402 UQ* 1***1 DAC 12102 DAC 12203 DAC 12302 DAC 12403 DAC 12503	Academic Communication Phylosophy and Current Issues Co-Curriculum II Physics for Civil Engineering Environmental Engineering Construction Engineering Engineering Mathematics II Mechanics of Material	2 2 1 2 3 2 3 3	18
	III	-	-	-	-
2	I	UHB 30502 DAC 21903 DAC 21902 DAC 21302 DAC 21403 DAC 21502 DAC 21703 DAC 21801	English for Workplace Highway and Traffic Engineering Contract and Estimation Statistics Geomatic Engineering Hydrology Structural Analysis Diploma in Civil Engineering Project I	2 3 2 2 3 2 3 1	18
	II	DAN 20103 DAC 22103 DAC 22202 DAC 22303 DAC 22402 DAC 22502 DAC 22603	Business and Entrepreneurship Geotechnical Engineering Occupational Safety and Health Fluid Mechanics Project Management Structural Design Diploma in Civil Engineering Project II	3 3 2 3 2 2 3	18
	III	-	-	-	-
3	I	DAC 31011	Industrial Training	11	11
				Total Credit	**90**

List of University Courses

Year	Sem	Course Code	Courses	Credit	Total
	Special	UHB 10302	English for Academic Survival	2	7
		UQU 10403	Introduction to Nationhood and Malaysia Development	3	
		UQI 10402/ UQI 11502	Islamic Studies/Moral Studies	2	
1	I	UWB 10*02	International Language	2	3
		UQ* 1***1	Co-Curriculum I	1	
	II	UHB 20302	Academic Communication	2	5
		UQI 11402	Phylosophy and Current Issues	2	
		UQ* 1XXX1	Co-Curriculum II	1	
2	I	UHB 30502	English for Workplace	2	2
	II	DAN 20103	Business and Entrepreneurship	3	3
Total Overall Credit					**20**

Synopsis of Courses

UHB 10302 English for Academic Survival

Synopsis

This course focuses on developing students' acquisition of the English language skills required for higher education. This course assists students to read, write, listen and speak effectively and to become informed, literate and lifelong learners. By the end of the course, students should be able to use English for a wide range of personal and academic activities in the context of tertiary education.

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UQU 10403 Introduction to Nationhood and Malaysia Development

Synopsis

This course discusses History and Politics, Malaysian Constitution, National Administrative System and Structure, Society and Unity, National Development as well as Religion and Beliefs. This course aims to produce graduates who have a national identity and a spirit of superior patriotism. Teaching and learning will be implemented in the form of lectures, assignments, examinations and learning experiences.

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6. Nazri Muslim. (2015). Islam dan Melayu: Tiang Seri Hubungan Etnik di Malaysia. Bangi: Penerbit UKM.
7. Ruslan Zainuddin, Mohd Mahadee Ismail & Zaini Othman. (2010). Kenegaraan Malaysia. Edisi Kedua. Shah Alam: Oxford Fajar
8. Mardiana Nordin, & Hasnah Hussin. (2012). Pengajian Malaysia (Ed. ke-5). Shah Alam, Malaysia: Oxford Fajar.
9. Kamaruzzaman Ismail. (2012). Pengajian Malaysia. Shah Alam, Malaysia: Oxford Fajar

UQI 10402 Pengantar Pengajian Islam

Synopsis

This course explains about Islamic concept as ad-deen. It discusses the study of al-Quran and al-Hadith, Sunnism, schools of Islamic theology, development of schools of Fiqh, principles of muamalat, Islamic Criminal Law, Islamic work ethics, issues in Islamic family law and current issues.

References

1. Nik Kamal Wan Mohammed & Lain-lain (2018). Modul Pembelajaran Pengantar Pengajian Islam (UQI10402), cetakan keempat 2018, Batu Pahat: Penerbit UTHM.
2. Roziah Sidik (2011). Pengajian Islam, Selangor: Oxford Fajar. BP42 .R69 2011
3. Al-Anjari, Fouzi (2013). Al-Asya'irah: Akidah Sebenar Ahli Sunnah Wal Jamaah, Seremban: Creative Publika. BP166.14 .A54 2013
4. Ramli Awang (2013). Akidah Penghayatan Tauhid al-Quran, Johor: Penerbit UTM Press. BP165.5 .R35 2013
5. T. Nama (2013). Pengurusan, Etika Kerja dan Personaliti: Perspektif Islam, Perlis: UMP. BP190.5.M28 .P46 2013
6. Mohd Fauzi Mohd Amin (2011). Pemerkasaan Fardhu Kifayah berteraskan al-Quran dan al-Sunnah, Negeri Sembilan: USIM. BP130.8 .P45 2011
7. Azzam, Abdul Aziz Muhammad (2010). Fiqh Muamalat: Sistem Transaksi dalam Fiqh Islam, Jakarta: Amzah. BP158.C59 .A99 2010
8. Harun Din (Dr.) (2015). Manusia Dan Islam, cetakan pertama, Kuala Lumpur: Dewan Bahasa dan Pustaka. BP174 .M36 2015
9. Muhammad Ahmad Abdul Jawwad (2004). Pengurusan Yang Profesional Dalam Islam, Kuala Lumpur: Penerbit Berlian. BP173.77. J39 2004
10. Mustafa Abdul Rahman (1998). Hadith 40, Kuala Lumpur: Dewan Pustaka Fajar. BP135. A2 .M87 1998
11. Ismail Haji Ali, (1995). Pengertian dan Pegangan Iktikad yang benar: Ahli Sunnah Wal Jamaah: Kuala Lumpur: Penerbitan al-Hidayah. BP166.78. P46 1995
12. Abdur Rahman I.Doi (1995). Undang-undang Syariah, terjemahan Rohani Abdul Rahim, Kuala Lumpur: Dewan Bahasa dan Pustaka. BP173.6 .A72 1995
13. Paizah Haji Ismail (1991). Undang-undang Jenayah Islam, Kuala Lumpur: Dewan Pustaka Islam, Angkatan Belia Islam Malaysia. BP144 .P35 1991
14. Mohammad Muslehudin (1989). Insuran dan Hukum Islam, Kuala Lumpur: Dewan Bahasa dan Pustaka. BP190.5. I67 M65 1989
15. Muhammad Sulaiman Haji Yasin (1988). Pengantar Aqidah, Kuala Lumpur: Dewan Bahasa dan Pustaka. BP166. M67 1984

UQI 11502 Moral Studies

Synopsis
This course explains on concepts of morality, aspects of moral and its importance in daily lives. Western moral theories and moral values of great religions of the world. Morality values in various fields of employment, ethics in science and technology and current moral issues.

References

1. Eow Boon Hin (2008). Moral Education. Shah Alam: Longman. LC268.E48 2008
2. Ahmad Khamis (1999). Etika Untuk Institusi Pengajian Tinggi. Kuala Lumpur: Kumpulan Budiman. LC315.M3.A35 1999
3. Mohd Nasir Omar (1986). Falsafah Etika; Perbandingan Islam dan Barat. Kuala Lumpur: JPM. BL240.3.H87 2009

UWB 10*02 International Language

Synopsis
This course is designed for students to learn the basic foreign language. Students are exposed to the skills of listening, reading, speaking, and writing with basic vocabulary, grammar and sentence structure. Students are also exposed to the real daily situations which will help them to communicate using foreign language.

References

1. Booth, Trudie Maria (2008). French Verbs Tenses. Mc Graw-Hill. P 2271.U66 2008
2. Lim Hong Swan, Yeoh Li Cheng (2010). Mandarin Made Easy Through English. Batu Pahat: Penerbit UTHM. PL1129.E5 .L554 2009 a
3. Nurulisyazila Othaman, Abu Hanifa Abu Mukhtar, Nurul Sabrina Zan, Idayu NuriIlyana Daud (2017). Bahasa Arab Tahap 1. Batu Pahat: Penerbit UTHM.
4. Surie, Network (2009). AE Minna no Nihongo 1-1 Elementary: Translation and Grammatical Notes, Tokyo: 3A Corporation. PL539.3 .M567 2009
5. Henry J. Amen IV, Kyubyong Park, (2010). Korean for Beginners: Mastering Conversational Korean. North Clarendon: Tuttle Publishing.
6. Luscher, R, & Stevens, J (2011). Deutsch ganz leicht A1:Selbslernenkurs Deutsch für Anfänger: Zweisprachiges Arbeitsbuch = A german self-study course for beginners: Bilingual workbook. Ismaning, Regensburg: Hueber Verlag.
7. Nurul Sabrina Zan. (2016). UWB11102 La lengua espanola –Nivel 1. 2nd Edition, Batu Pahat: Penerbit UTHM. 10-0150
8. Henry J. Amen IV, Kyubyong Park, (2010). Thai for Beginners: Mastering Conversational Thai. North Clarendon: Tuttle Publishing.
9. Majendra, Maheswara (2010). Kamus lengkap Indonesia-Jawa, Jawa-Indonesia / Majendra Maheswara. Pustaka Mahardika. XX(131732.1)

UQ* 1*1 Co-Curriculum I**

Synopsis
The course offer various form of activities for student of Bachelor Degree and Diploma. Eight fields of activities offer are Public Speaking, Entrepreneurship, Sports, Community Services, Volunteership, Leadership, Culture and Innovation.

References
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DAC 11103 Algebra

Synopsis

Algebra is the most basic of the higher mathematics disciplines. Without the fundamentals taught in algebra, it is virtually impossible to deal with geometry, trigonometry or statistics.

References

1. Gustafson, R.D. and Hughes, J. (2017). College algebra. Boston, MA : Cengage Learning. ISBN: 9781305652231
2. Larson, R. (2016). College algebra. Boston, MA : Cengage Learning. ISBN: 978137282291
3. Miller, M. (2014). Beginning algebra. New York : McGraw-Hill. ISBN: 9780073384481
4. Raji et al. (2002). Matematik asas. Skudai, Johor, Malaysia : Penerbit Universiti Teknologi Malaysia. ISBN: 98302567

DAC 11203 Engineering Mathematics I

Synopsis

Function : Relation and function, graph, algebra function, piecewise function, trigonometry, exponent, logarithm, hyperbolic and its inverse. Limits: Limit of functions. One-sided limits. Limits at infinity. Continuity. Differentiation: Techniques of differentiation: Sum and differences rule, product rule, quotient rule. Chain rule. Differentiation of exponent functions, logarithm functions, implicit functions, parametric equations, inverse trigonometric functions and higher derivatives. Application of differentiation: Rates of change. Maximum and minimum problem, graph sketching. L' Hôpital's Rule. Integration: Integration as inverse of differentiation. Integration of standard functions. Definite integrals. Techniques of integration: by substitution, by parts, by partial fraction, by table method. Numerical methods: Simpson's rule and Trapezium rule. Improper integrals : Integrals at infinity. Application of integration: Area of a region. Volumes by cylindrical shells. Arc length and surface area.

References

1. Nurhana Binti Mohamad (2018). Notes Engineering Mathematics I (DAS 10203). Centre for Diploma Studies, UTHM Publisher.
2. Nafisah@Kamariah Md. Kamaruddin el. al. (2016). Engineering Mathematics I (DAS10203). Centre for Diploma Studies, UTHM Publisher
3. Abd Wahid Md Raji (2013). The first course of calculus for science and engineering students. UTM. QA303 .F57 2013
4. Arif, Mohamed (2013). Calculus. Oxford UK. QA303.2 .A74 2013
5. Bird, John (2010). Basic Engineering Mathematics. Newnes, Amsterdam. TA330 .B574 2010
6. Steward, James (2012). Calculus. BCengage Learning, Belmont, CA. QA303.2 .S73 2012

DAC 11603 Civil Engineering Materials

Synopsis

This module introduce to students about: Cement, Aggregates, Concrete, Brick and Brick Work, Wood, Steel, Other Building Materials and Project.

References

1. Amir Khan Suwandi, Norhayati Ngadiman, Mohd Erwan Sanik, Ahmad Hakimi Mat Nor, Salman Salim, Mohammad Soffi Md Noh, Ahmad Fahmy Kamarudin & Noor Azlina Abdul Majib (2016). Civil Engineering Materials (DAC10402), UTHM. ISBN: 08-0172
2. Achmad Fauzi A. Wahab (2011). Civil Engineering Materials. Pahang: Penerbit Universiti Malaysia Pahang. TA403.A23 2011
3. Day, Ken W. (2006). Concrete Mix Design, Quality Control and Specification 3rd Edition. London: Taylor & Francis. TA439.D39 2006
4. Hegger (2006). Construction Materials Manual. Switzerland: Birkhäuser. TA402.5.G3.C66 2006
5. Hegger, Manfred (2007). Basic Materials. Switzerland: Birkhäuser. TA403.H43 2007
6. Marotta, Theodore W. (2005). Basic Construction Materials, 7th Edition. USA: Prentice Hall. TA403.M37 2005

DAC 11703 Engineering Drawing

Synopsis

Introduction to Engineering Drawing, Basic Geometrical Construction, Orthographic Projection, Pictorial Projection, Computer Aided Design; Using CAD in Civil Engineering Drawing.

References

1. Salman Hj Salim, Nor Baizura Bt. Hamid, Mardiha Bt. Mokhtar, Aslila Bt. Abd Kadir; Learning Module: DAC 10103 Engineering Drawing.
2. Hj. Adanan Hj. Ohman (2011). Learning Module: DAC 10103 Engineering Drawing, 1st Edition; Penerbit UTHM; Batu Pahat, Johor. T353.A26.2011a
3. British Standard Institution; BS 308: Part 2: 1972 Engineering Drawing Practice Part 2: Dimensioning and Tolerance of Size. British Standard Institution, London;1972 (BS 308: Part 2 1972)
4. Mark W. Huth and Walter Wells (2005). Understanding Construction Drawings; 4rd Edition; Delmar Thomson Learning; London. T355.H87 2005
5. David A, Madsen and Terence M. Shumaker (2010). Civil Drafting Techology; 4rd Edition; Perentice Hall; New Jersey. T353.M324 2010
6. Grabowski. Ralph;Using AutoCAD (2009). Delmar Learning: New York. T385.G76 2009
7. Salman Salim & Adanan Othman (2014). Learning Module: DAC 10102 Engineering Drawing, 1st Edition; Penerbit UTHM; Batu Pahat, Johor.

DAC 11803 Statics and Dynamics

Synopsis

Introduction to static, force and state of equilibrium, moment and couple, equilibrium of solid body, centroid, moment of inertia, introduction to dynamic, kinematic of particle and projectile.

References

1. Keith M.Walker (2004). Applied Mechanics for Engineering Technology, 7th Edition; Prentice Hall, USA.
2. Hibbeler, R.C. (2001) Engineering Mechanics:Statics And Dynamics, 9th Edition; Prentice Hall, USA.
3. Bear F.P. and Johnson E. R. (2001). Vector Mechanics For Engineers – Statics, 3rd S.I. Metrik Edition; Mc Graw Hill, USA.
4. Hibbeler, R.C. (2004). Statics and Mechanics of Materials, 2nd Edition; Prentice Hall, USA.
5. David H. Myscka (1999). Machines and Mechanisms : Applied Kinematics Analysis;Prentice Hall, USA.

UHB 20302 Academic Communication

Prerequisite: UHB 10302 English for Academic Survival

Synopsis

This course introduces students to critical reading and writing skills. Students are expected to read and respond critically to academic materials. This course will also provide opportunities for students to develop their academic writing skills in producing technical papers.

References

1. Anderson, P.V. (2014). Technical communication : a reader-centered approach. Boston : Cengage Learning.PE1475 .A52 2014
2. Fairbairn, G. J. (2011). Reading, writing and reasoning: A guide for students. Maidenhead: Open University Press, 2011. LB2395 .F34 2011.
3. Jordan, R. R. (2003). Academic writing course: Study skills in English (3rd ed.). Essex: Longman. PE1408 .J67 2003.
4. Langan, J. (2011). College writing skills (8th ed.). New York: McGraw-Hill. PE1471 .L36 2011.
5. Lewis, J. (2002) Reading for academic success: Reading and strategies. Boston: Houghton Mifflin. LB2395.3 .L48 2002.
6. Metcalfe, M. (2006). Reading critically at university. Los Angeles: Sage. LB2395.3 .M47 2006.
7. Smith, L. C. (2005). Exploring content 1 : Reading for academic success. White Plains, NY: Longman. PE1122 .S64 2004.

UQI 11402 Phylosophy and Current Issues

Synopsis

The course covers the relationship of philosophy with the Philosophy of National Education and Rukunegara. The use of philosophy as a tool to purify the culture of thought in life through art and methods of thinking as well as human concepts. The main topics in philosophy namely epistemology, metaphysics and ethics are discussed in the context of current issues. Emphasis is given to philosophy as the basis for inter-cultural dialogue as well as fostering common values. At the end of this course, students will be able to see the disciplines of knowledge as a comprehensive body of knowledge and related to each other.

References

1. Al-Attas, S.M. Naquib (1991). The Concept of Education in Islam. Kuala Lumpur: ISTAC.
2. Al-Farugi, I.R. (1994). Al-Tawhid: Its Implications for Thought and Life, (2nd Ed.). Herndon: IIIT.
3. Phillips, D.C. (Ed.) (2014). Encyclopaedia of Educational Theory and Philosophy, (1st Ed.). SAGE Publication.
4. Dzulkifli, A.R. & Rosnani, H. (2019). Pentafsiran Baharu Falsafah Pendidikan Kebangsaan dan Pelaksanaannya Pasca 2020. Kuala Lumpur: IIUM Press.
5. Hospers, J. (1997). An Introduction to Philosophical Analysis, (4th Ed.). London: Routledge.
6. Mitchell, H.B. (2011). Roots of Wisdom: A Tapestry of Philosophical Traditions, (6th Ed.). Wadsworth: Cengage Learning.
7. Osman Bakar. (1999). The Classification of Knowledge in Islam. Cambridge, U.K.: The Islamic Texts Society.
8. Rosnani Hashim. (2017). Revitalization of Philosophy and Philosophical Inquiry in Muslim Education. Kull of Education, IIUM.
9. Solomon, R.C. & Higgins, K.M. (2010). The Big Questions: A Short Introduction to Philosophy, (8th Ed.). Wadsworth: Cengage Learning.
10. Weiming, T. & Ikeda, D. (2011). New Horizons In Eastern Humanism: Buddhism, Confucianism and The Quest for Global Peace. London: I.B.Tauris.

UQ* 1*1 Co-Curriculum II**

Synopsis

The course offer various form of activities for student of Bachelor Degree and Diploma. Eight fields of activities offer are Public Speaking, Entrepreneurship, Sports, Community Services, Volunteership, Leadership, Culture and Innovation.

References

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DAC 12102 Physics for Civil Engineering

Synopsis

This course introduces students to mechanic physics knowledge needed related to properties of materials, fluids, sound and waves, thermal properties, light and optics. The application involves the concept of density, pressure, Archimedes Principle, Pascal Law, buoyancy in fluid, thermal properties of materials, application of wave such as interference, diffraction and polarization. The course also discusses light and optics such as in geometrical optics.

References

1. Giambattista, A., Richardson, B. M., Richardson, R. C. (2007). College Physics 2nd Ed.New York: Mc Graw Hill.
2. Serway, R. A., Faughn, J. S., Moses, C. J. (2003). College Physics. 6th Ed. USA: Pacific Grove, CA: Thomson Learning.
3. Bueche, F. J., Hecht, E., Hademenos, G. J. (2000). College Physics: based on Schaum's Outline of college physics. New York: McGraw-Hill
4. Urone, P. P. (2001). College Physics. 2nd Ed. USA: Pacific Grove, CA: Brooks/Cole.

DAC 12203 Environmental Engineering

Synopsis

This module introduce to students about: Basic concept of environmental engineering: Impact of human activities upon the environment and Environmental Quality Act (EQA, 1974) Malaysia. Water quality: Water characteristic, criteria, standards and methods of analysis. Natural purification process of water. Water supply: Water sources, methods of purification and distribution system. Wastewater: Source and characteristics and treatment methods Introduction to solid waste management: Characteristics and types of solid waste, sources and solid waste management. Introduction to hazardous waste. Introduction to noise and air pollution. Environmental Impact Assessment (EIA and EMP).

References

1. Mackenzie Leo Davis, David A. Cornwell (2013). Introduction to Environmental Engineering. USA: McGraw Hill. TD145 .D384 2013
2. Franzle, Stefan (2012). Introduction to Environmental Engineering. USA: John Wiley. TD145 .F72 2012
3. Mackenzie L. Davis, Susan J. Masten (2009). Principles of Environmental Engineering and Science. USA: McGraw Hill. TD145 .D38 2009
4. Eugene R. Weiner (2013). Applications of Environmental Aquatic Chemistry: A Practical Guide. USA: CRC Press. TD193 .W45 2013

DAC 12302 Construction Engineering

Synopsis

This module introduce to students about: The generic sequence of construction process and its engineering perspectives; this including site preparation, substructure works, superstructure works, formwork and joints, temporary works, and related construction equipment.

References

1. Jahiman bin Badron (2007). Teknologi Binaan Bangunan. Kuala Lumpur: IBS BUKU Sdn. Bhd. TH213 .J33 2007
2. Roy Chudley and Roger Greeno (2005). Construction Technology, 4th Edition. Pearson Education Limited. TH145 .C48 2005
3. S.W. Nunnally (2011). Construction Methods and Management. Pearson Education Limited. TH145 .N86 2011
4. Trevor M Holroyd (2003). Buildability: Successful Construction from Concept to Completion, Thomas Telford Publishing. TH145 .H64 2003
5. Derek Osbourn and Roger Greeno (2007). Introduction to Building, 3rd Edition. Pearson Education Limited. TH145 .O82 2007

6. Noor Khazanah A. Rahman (2019). Teknologi Pembinaan Struktur Bangunan. Dewan Bahasa dan Pustaka. ISBN 978-983-49-1569-8

DAC 12403 Engineering Mathematics II

Synopsis

This course explains in detail topics related to calculus. At the start of the course students understand the topic of First order differential equations. The techniques used are the method of separable equation, Homogeneous equation, Linear equation and exact equation. Next, the topic of application of first order differential equation which is population and newton's law cooling. ln the next topic, students will introduced to the second order linear differential equations and generate their knowledge to differentiate undetermined coefficients and variation of parameters. Next, students will apply the knowledge to solve laplace transforms including properties of linearity, first shift and multiply with tn. Student will also learn the method of inverse laplace transforms including the properties, partial fraction and convolution theorem. Later on, they will extend their laplace transform application knowledge to solving differential equations for intial and boundary value problems.

References

1. Nurhana Binti Moharnad (2018). Engineering Mathematics (DAS 20403). Centre for Diploma Studies, UTHM Publisher.
2. Brannan, James R. (2010). Differential equations with value problems: an introduction to modern methods applications. John Wiley. QA371 .873 2010
3. James, Glyn. (2008). Modem Engineering Mathematics. 4th Edition Prentice Hall, Essex. TA330 .M62 2008
4. Abd Wahid Md Raji (2013). The first course of calculus for science and engineering students. UTM. QA303 .F57 2013
5. Vrabie, Ioan 1 (2011). Differential equations: an introduction basic concepts, results, and applications. World Scientific, N Jersey. QA371 .Y'72 20111

DAC 12503 Mechanics of Material

Prerequisite: DAC 11803 Statics and Dynamics

Synopsis

The introduction to the basic principles of mechanics of material, apply the knowledge in solving problem in civil engineering and perform the basic laboratory tests regarding structural analysis.

References

1. R. C. Hibbeler (2019). Statics and Mechanic of Materials, Fifth Edition in SI Units, Pearson
2. Russell C. Hibbeler (2018). Mechanics of Materials in SI Units, 10th Edition
3. Ferdinand Beer (2020). Mechanics of Materials in SI Units, 8th Edition

UHB 30502 English for Workplace

Prerequisite: UHB 20302 Academic Communication

Synopsis

This course employs a task-based learning approach and focuses on developing students' delivery of speech in oral interactions and job interviews. Particular emphasis will be given to promote the mastery of self-directed learning, team-work, research, reasoning and creativity. This course also enables students to acquire the knowledge skills necessary for conducting and participating in meetings, which include writing of meeting documents and event proposals based on specific themes. Students will also be exposed to interview techniques.

References

1. Allen, Jeffrey G. (2004). The Complete Q and A job interview book (4th ed.). Hoboken, NJ:John Wiley. HF5549.5.16 .A44 2004.
2. Badger, I. (2003). Everyday Business Writing. Essex: Pearson. PE115 .B327 2003.
3. Corfield, R. (2008). Preparing the Perfect Job Application: Application Forms and Letters Made Easy.New Delhi: Kohan Page. HF5383 .C67 2008.
4. Freitag-Lawrence, Anne (2003). Business presentations. England: Pearson. PE1479.B87 .F73 2003.
5. Haynes, M. E. (2009). Meeting skills for leaders: Make meetings more productive (4th ed.). Rochester, NY: Axzo Press. HD30.3 .H39 2009.
6. Lambert, V. (2003). Everyday technical English. England: Pearson. PE1115 .L35 2003.
7. Leigh, J. (2004). CVs and job application. New York: Oxford University Press. HF5383 .L44 2004.
8. Molinsky, S.J,& Bliss, B. (1994). Day by day: English for employment communication (1st ed.). Englewood Cliffs, NJ: Longman. PE1128 . M67 1994.
9. Wendleton, K. (2014). Mastering the job interview and winning the game (5th ed.). Boston: Cengage Learning. HF5549.5.I6 .W46 2014.
10. Wrathall, J. (2011). Event management: Theory and practice. North Ryde, N.S.W: McGraw-Hill. GT3405 .W72 201.

DAC 21903 Highway and Traffic Engineering

Synopsis

This course introduces students to knowledge of Highway and Traffic Engineering at Diploma level. Students are introduced to the definition of Highway and Traffic Engineering. In Highway Engineering, students are taught topic such as materials in pavement structure and related testing. Basic design of flexible and rigid pavements are also introduced. An overview of road construction is also taught to provide understanding of the involved processes. The road maintenance and drainage topic are also taught to students. In Traffic Engineering, students are introduced to main parameters in traffic study such as volume and speed together with data collection procedures. The elements in a road cross section are also introduced to the students as well as sight distances calculation. Students also learn to determine the green time of an intersection traffic control. Lastly, students are introduced to the basic knowledge of traffic management and road safety. Beside all of the theories, students are involved in laboratory session as part of practice-oriented elements in this course.

References

1. Mohd Erwan et al. DAC 20903 Highway and Traffic Engineering Module.
2. Garber N.J, Hoel L.A. (2015). Traffic and Highway Engineering, (5th Edition). USA: Cengage Learning. TE145.G35 2015
3. Currin, Thomas R. (2013). Introduction to Traffic Engineering: A Manual for Data Collection and Analysis. USA: Cengage Learning. HE333 .C87 2013
4. Mannering, Fred L. (2013). Principles of Highway Engineering and Traffic Analysis, (5th Edition). USA: John Wiley. TE145 .M36 2013
5. Pande, Anurag (2016). Traffic Engineering Handbook, (7th Edition). New Jersey, John Wiley & Sons. HE333.T68 2016
6. Rogers, Martin (2016). Highway Engineering, (3rd Edition). West Sussex, Wiley Blackwell. TE145.R63 2016
7. O'Flaherty, Coleman A. (2016). Highways: the location, design, construction and maintenance of road pavement. (5th Edition). London, ICE Publishing. TE278.H53 2016

DAC 21902 Contract and Estimation

Synopsis

Contract procedures and rules, including general principles of contracting, parties involved, and standards of building and civil engineering contracts. Meanwhile for contract documents, it will touch on type and purpose, instructions to tenderers, specifications, tender forms, contract terms, quantity lists, technical drawings and letter of acceptance. Additionally, for conditions of contract, several clauses will be discuss, including variation order, additions and omissions, Interim payment and measurements, delays and extension of time. The module also touch on arbitration and adjudication process in construction. Finally, the module end with introduction to estimation, comprises of unit rate, methods of estimating, and quantity measurement.

References

1. Murdoch, John (2008). Construction Contracts: Law and Management, 4th Edition. London, UK: Taylor & Francis.KD1641 .M87 2008
2. Pratt, David J. (2006). Estimating for Residential Construction. USA: Thomson Delmar Learning. TH4815.8 .P72 2006
3. Pratt, David J. (2011). Fundamentals of Construction Estimating, 3rd Edition. USA: Wadsworth Cengage Learning. TH435 .P72 2011
4. Brook, Martin (2008). Estimating and Tendering for Construction Work. USA: Elsevier. TH435 .B76 2008
5. Dagostino, Frank R. (2011). Estimating in Building Construction, 7th Edition. USA: Pearson Prentice Hall. TH435 .D33 2011

DAC 21302 Statistics

Synopsis

Statistics : Ungrouped Data : Measure of Central Tendency - mean, mode, median. Measure of Dispersion - variance, standard deviation. Grouped Data : Measure of Central Tendency - mean, mode, median. Measure of Dispersion - variance, standard deviation. Probability: Independent event. Conditional probability. Bayes theorem. Random variables : Discrete random variables - Expected value and variance. Continuous random variables - Expected value and variance. Probability Distributions : Binomial distribution. Poisson distribution. Normal distribution. Sampling distribution : Sampling distribution for single mean. Sampling distribution for difference of two

means. Estimation : Point estimate. Confidence interval for single mean. Confidence interval for difference of two means. Hypothesis Test : Type 1 and type 2 errors. Hypothesis test for single mean. Hypothesis test for difference of two means. Simple Linear Regression : Graphical method. Coefficient of determination. Least square method.

References

1. Nafisah@Kamariah Md. Kamaruddin el. al. (2015). Statistic (DAS 20502). Pusat Pengajian Diploma, UTHM Publisher.
2. Akritas, Michael G. (2016) Probability and Statistics for Engineers and Scientists with R. TA340 .A37 20016
3. Barragues, Jose I. (2014). Probability and Statistic: A Didactic Introduction. QA273 .P764 2014
   Bluman, Allan G. (2014). Elementary Statistics, A step by Step Approach. QA276.12 .B58 2014

DAC 21502 Hydrology

Synopsis

Hydrology courses provide knowledge on the concepts of hydrological cycles involving processes that occur after a rain event. This course also discusses the management of surface runoff water. Return the rainfall to river and urban drainage design especially in the development of new areas.

References

1. Goyal, Manish Kumar (2016). Engineering Hydrology. TC147.G69 2016
2. Ainger, C.M (2016). Sustainable Water. TD345.S87 2016
3. Chahar, Bhagu R (2015). Groundwater Hydrology. GB1003.2 .C42 2015
4. Madan Mohan Das (2011). Hydrology. India: PHI Learning. GB 661 .D37 2009
5. K. Subramanya (1994). Engineering Hydrology. India: Tata McGraw-Hill. TC 147 .S93 1994

DAC 21703 Structural Analysis

Prerequisite: DAC 12503 Mechanics of Material

Synopsis

Analysis of forces in determinate and indeterminate trusses including determinate space trusses. Analysis of indeterminate beam and frame including drawing the shear force and bending moment diagram. Introduction to plastic analysis for beam.

References

1. R.C. Hibbeler, Structural Analysis, 10th Edition, Pearson Education Limited
2. R.C. Hibbeler, Statics and Mechanics of Materials, 5th Edition, ler, Pearson Education Limited.
3. Roslan Kolop, Khairul Zaman Abdul Malek, Ahmad Hakimi Mat Nor (2016). Structural Analysis Module. Penerbit UTHM

DAC 21801 Diploma in Civil Engineering Project I

Prerequisite: Student Has Taken 40% of the total number of credits to graduate

Synopsis

The course aims to provide students with knowledge and training related to project implementation and production. The project should be from the draft proposal level to the project implementation plan. Project output is in the form of hardware construction, software development, and system analysis or data collection. This course focuses on initial planning, project selection, project proposal preparation, project proposal presentation and project expected result.

References

1. Related reference books.
2. Manual Guideline for implementation of Diploma Engineering Project, UTHM.

DAN 20103 Business and Entrepreneurship

Synopsis

This course aims nurturing an entrepreneurial culture among students and exposed them to the basics of entrepreneurial concept, entrepreneurial attributes as well as the development of creative and innovative skills that allow them to identify business opportunities and non-business. This course is designed to ensure students gain knowledge and skill related to fundamental of business and entrepreneurship such as introduction to entrepreneurship, business ownership, regulations and support services, business environment asessment, marketing plans, operational plans, financial planning and business management plans.

References

1. Norliza Ghazali & Raudah Mohd Adnan (2016). Perniagaan dan Keusahawanan, Penerbit UTHM
2. UiTM Entrepreneurship Study Group (2011). Engineering Entrepreneurship. Prentice Hall. HB615.F86 2004
3. Ariffin, S, Hamidon, S (2017). Introduction to Entrepreneurship. Oxford Fajar, Kuala Lumpur
4. Bessant J. Tidd, Joseph. (2011). Innovation and Entrepreneurship. 2nd ed. West Sussex: Wiley. HD53.B48 2011
5. Oxford Fajar (2013). Third Edition. Entrepreneurship. Sarimah Hanim Aman Shah & Cecilia Soon Teik Lan

DAC 22103 Geotechnical Engineering

Synopsis

Formation and Classification of Soil; Soil Investigation Practices; Water in Soil; Consolidation and Shear Strength of Soil; Stress Distribution and Bearing Capacity of Soil; Design of Shallow and Deep Foundation; Lateral Earth Pressure and Slope Stability.

References

1. Braja M. Das (2014). Principles of Geotechnical Engineering. TA710 .D37 2014
2. Braja M. Das (2013). Fundamental of Geotechnical Engineering. TA775 .D376 2013
3. Silvia, Garcia (2016). Principle of Geotechnical Engineering. TA705 .P746 2016
4. Jing, Ma (2016). Geotechnical Engineering: Pile Design and Construction. TA780 .G46 2016
5. Braja M. Das (2016). Principle of Foundation Engineering. TA775.D37 2016
6. Amir Khan Suwandi, Ahmad Hakimi Mat Nor (2018). Geotechnical Engineering (Volume 1).

DAC 22202 Occupational Safety and Health

Synopsis

Health, Safety and Environment Managements: Introduction to OSH, OSHA 1994 (Act 514), FMA 1967, EQA 1974, Occupational Safety And Health Management System, Safety, Health And Environment Culture; Risk Management and Assessment: Introduction To Risk Management, Risk Assessment Techniques, HIRARC; Physical Injury & Controls: Introduction To Physical Injury, Construction Work, Electrical Work, Mechanical Work, Chemical Work; Health Hazards: Introduction To Health Hazards & Hygiene, Chemical Hazards, Physical Hazards, Biological Hazards, Hygiene; Accident Investigation & Reporting: Introduction, Accident Investigation, Investigations and Causes Of Incident, Incident Analysis and Data Collection Method.

References

1. Occupational Safety and Health Act and Regulations. MDC Publishers Printer Sdn. Bhd. 2001. KPG1390.M34 2001 rw N2
2. Factories and Machinery Act & Regulations. MDC Publishers Printer Sdn. Bhd. 2001. KPG1390.A31967 .A4 2001 rw N1.
3. Ismail Bahari (2006). Pengurusan Keselamatan dan Kesihatan Pekerjaan. Edisi-2. McGraw Hill Education (Malaysia). T55.I85 2006.
4. Davies, V. J. and Tomasin K. (2006). Construction Safety Handbook. 2nd ed. London: Thomas Telford. TH443.R43 2006
5. Anton, Thomas J. (2009). Occupational Safety and Health Management. 3rd ed. New York: McGraw-Hill. T55.A57 1989

DAC 22303 Fluid Mechanics

Synopsis

This course aim to develop an understanding of fluid mechanics including basic concepts of fluids, hydrostatic and fluid dynamics, momentum and forces in fluid, flow in pipes, dimensional analysis and similarity.

References

1. K. Subramanya (2015). Flow In Open Channels. India: Tata McGraw-Hill. TC 175 .S92 2015
2. Kundu, Pijush K. Cohen, Ira M. Dowling, David R. (2012). Fluid Mechanics; 5th Editions. QA901 .K86 2012.
3. White, Frank M. (2011). Fluid Mechanics, 7th Editions. TA357 .W44 2011

4. Cengel, Y.A. and Cimbala, J.M. (2006). Fluid Mechanics: Fundamentals and Applications. McGraw Hill. TA357 .C46 2006
5. Crowe, C.T. Elger, D.F. Roberson, John A. (2005). Engineering Fluid Mechanics; 8th Editions. TA357 .R63 2005

DAC 22402 Project Management

Synopsis

This course introduces students to the project management process and Projects Participants in the civil engineering project. Project organization and method of Project Delivery will be discussed. To achieve specific goals and meet specific success criteria at the specified time, the student will be exposed to project planning and scheduling technique. Student also introduces to the resource management, communication and documentation in civil engineering project.

References

1. Peter Fewings (2012). Construction Project Management: An Integrated Approach, 2nd Edition. UK: Spon Press. TH438 .F48 2012
2. Robert K. Wysocki (2012). Effective Project Management: Traditional, Agile, Extreme, 6th Edition. USA: Wiley Publishing. HD69.P75 .W98 2012
3. Omar Osman (2006). Pengurusan Pembinaan: Konsep, Strategi dan Aplikasi. Pulau Pinang, Malaysia: Penerbit USM. HD9715 .O42 2006
4. Omar Osman (2010). Pengurusan Projek dan Kelestarian Titik Pertemuan. Pulau Pinang, Malaysia: Penerbit USM. HD69.P75 .O52 2010

DAC 22502 Structural Design

Synopsis

Reinforced concrete structure: Design of simply supported beam, slab and short column. Steel structure: Design of restrained simply supported beam, simple column, roof trusses and connections. Timber structure: Timber properties, Design of timber members.

References

1. Chanakya, Arya. (2009). Design of Structural Elements: Concrete, Steelwork, Masonry and Timber Design to British Standards and Eurocodes.UK: Spon Press. TA658 .A79 2009
2. British standard BS 5950: Part 1; Structural Use of Steelwork in Building: Code of Practice for Design in Simple and Continuous Construction; Hot Rolled sections; SCI. 2000.
3. British Standard BS 8110. Part 1; Structural Use of Concrete; Code of Practice for Design and Construction; BSI;1997. TA439 .H36 1987
4. Chu-Kia Wang, Charles G. Salmon, Jose A. Pincheira (2007). Reinforced concrete design. John Wiley. TA683.2 .C48 2007
5. Dennis Lam, Thien-Cheong Ang, and Sing-Ping Chiew; Structural design of steelwork to EN 1993 and EN 1994, BH.TA684 .M37 2008

DAC 22603 Diploma in Civil Engineering Project II

Prerequisite: DAC 21801 Diploma in Civil Engineering Project I

Synopsis

This project basically focuses on identification, problem solving, method or approach to a system being studied. The project is a project focused on areas of problem solving, project planning, innovative design, analysis and testing. The project is a method of realizing the understanding gained from the theory by using existing principles or concepts into practical applications. Implementing such projects will shape students who are skilled in interacting, using and selecting solution solutions as well as proficient in relevant applications. It also serves as a training in team work. Students are also required to present proposals and studies and project progress reports in seminars held at the end of the semester.

References

1. Related referrence books.
2. Manual Guideline for implementation of Diploma Engineering Project, UTHM.

DAC 31011 Industrial Training

Prerequisite: Student Has Taken 60% of the total number of credits to graduate

Synopsis

Students are required to undergo industrial training in civil engineering field for 16 weeks. They will undergo training to be set by the industry as planning, management, design, evaluation, project supervision and etc..

References

Buku Panduan Latihan Industri UTHM, Penerbit UTHM, 2007.

Career and Further Education Prospect

Upon successful completion of the diploma course, the graduates have the opportunity either to further their study in the degree level program or apply for a job in the construction industry has a civil engineer assistant.

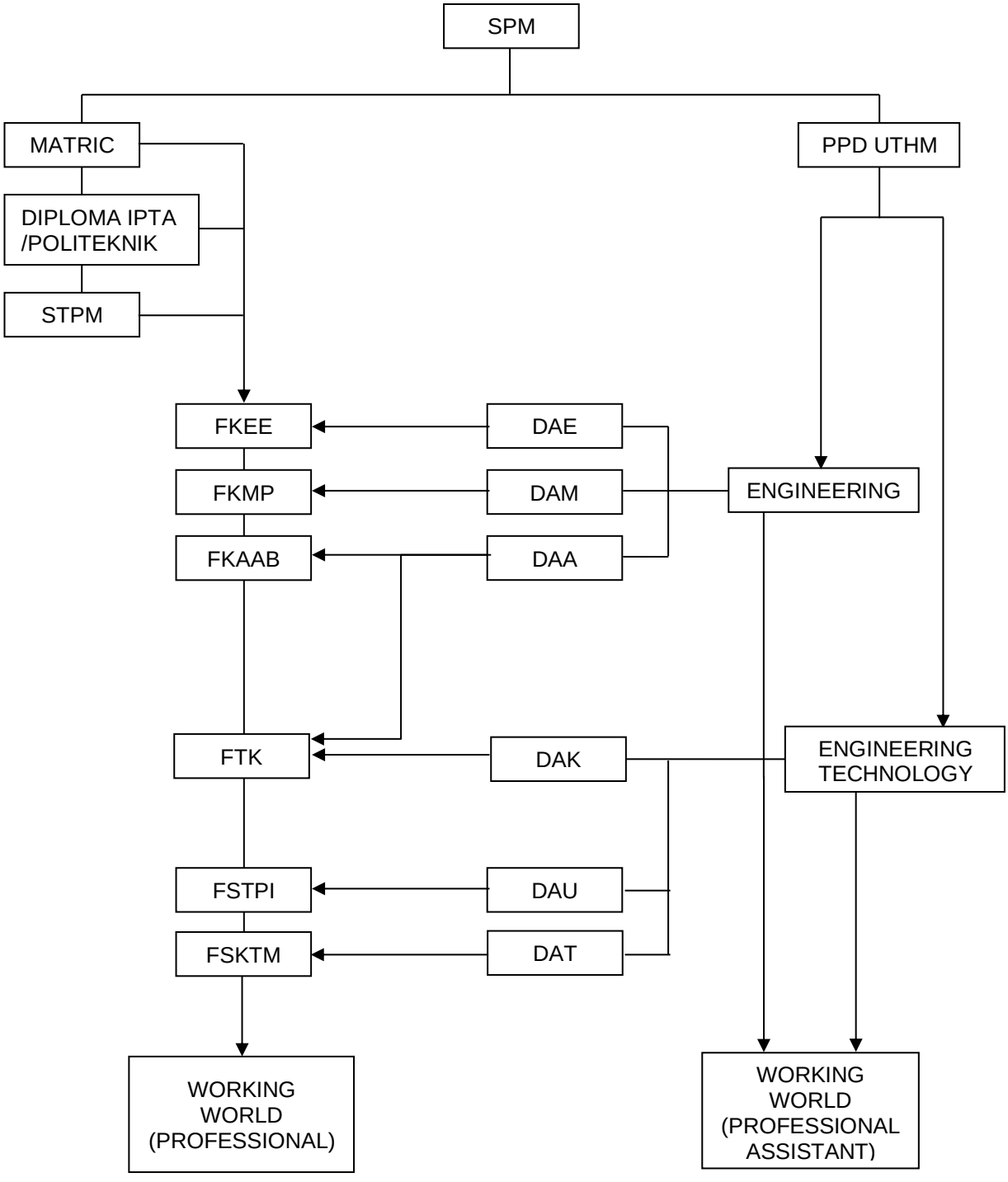
If they decided to further their study in UTHM, they can apply for a place in the Engineering Technology Faculty or Civil Engineering and Built Environment Faculty to obtain the respective degree in Civil Engineering Technology or Civil Engineering.

For those interested to work, the civil engineer assistant job is to provide technical support to civil engineers on construction projects in the following areas:

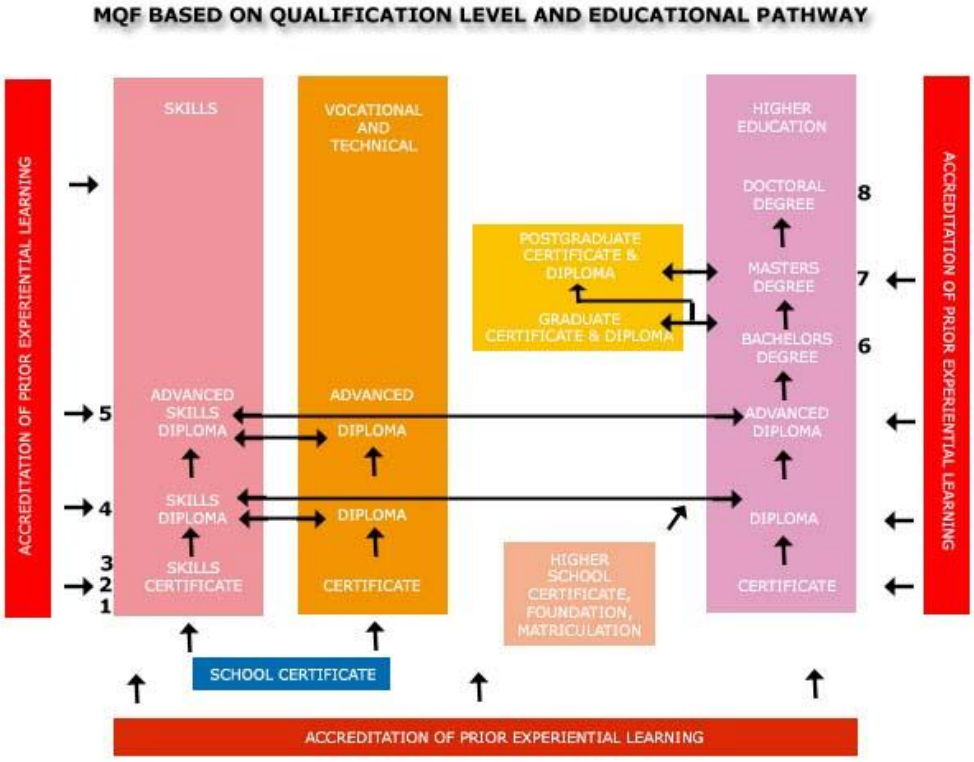
- Structural – bridges, dams, buildings, offshore platforms and pipelines
- Transportation – roads, railways, tunnels and airports
- Environmental – public water supply networks, irrigation, drainage, waste disposal and sewage treatment
- Maritime – ports, harbours and sea defences.

Civil engineering offers many opportunities as well as the satisfaction of helping to improve and enhance public quality of life in many settings.

Figures below show examples of jobs and career pathway in Centre of Diploma Studies UTHM and according to Malaysian Qualification Framework



Legend:
DAA – Diploma in Civil Engineering
DAE – Diploma in Electrical Engineering
DAM – Diploma in Mechanical Engineering
DAT – Diploma in Information Technology
DAK – Diploma in Chemical Engineering Technology
DAU – Diploma in Apllied Sciences



Further Education Pathway according to Malaysian Qualification Framework

MALAYSIAN QUALIFICATIONS FRAMEWORK: QUALIFICATIONS AND LEVELS

MQF Levels	Sectors			Lifelong Learning
	Skills	Vocational and Technical	Higher Education	
8			Doctoral Degree	Accreditation of Prior Experiential Learning (APEL)
7			Masters Degree	
			Postgraduate Certificate & Diploma	
6			Bachelors Degree	
			Graduate Certificate & Diploma	
5	Advanced Diploma	Advanced Diploma	Advanced Diploma	
4	Diploma	Diploma	Diploma	
3	Skills Certificate 3	Vocational and Technical Certificate	Certificate	
2	Skills Certificate 2			
1	Skills Certificate 1			

Qualification and Levels according to Malaysian Qualification Framework

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