UTHM
Universiti Tun Hussein Onn Malaysia

ACADEMIC PROFORMA

2020/2021

ppd.uthm.edu.my

CENTRE FOR DIPLOMA STUDIES
CEDS

DIPLOMA IN CIVIL ENGINEERING

QS STARS™ RATING SYSTEM

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

QS STARS™ RATING SYSTEM Teaching
QS STARS™ RATING SYSTEM Employability
QS STARS™ RATING SYSTEM Facilities
QS STARS™ RATING SYSTEM Social Responsibility
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 ammendment according to needs.

Contents

Foreword from the Vice Chancellor

Assalammualaikum Warahmatullahi Wabarakatuh dan Selamat Sejahtera.

Congratulations and welcome to the new students and thank you also for the trust you chose to be with UTHM to continue your efforts for success in career and well-being in the future.

The world has been shocked by the outbreak of Coronavirus Disease 19 (Covid-19) which until now has not shown any sign that it will end. In order to comply with standard operating procedures issued by the competent bodies such as the Ministry of Health Malaysia and the Ministry of Higher Education, UTHM has undertaken various initiatives to curb the spread of epidemics in UTHM. Among the initiatives in the implementation of Learning and Teaching are through online methods namely Full Online Classroom (FOC), Smart Classroom, Flip Learning, Massive Open Online Course (MOOC) and more. Hopefully, continuous efforts at the highest management level and all UTHM staff will be able to prevent the spread of epidemics and be able to provide a conducive learning environment for all UTHM students.

The year 2019 saw UTHM continue to move forward in its efforts to become a leader in the field of science and technology education. This is evidenced by the overall rating of 4 stars by QS Stars Rating with 5 out of 7 categories given a 5 star rating namely Teaching, Employability, Facilities, Social Responsibility and Inclusiveness categories. Apart from that, UTHM has also ranked 8th in Malaysia in Webometrics Ranging Web of Universities with 13th place ranking at the university level in the world. Apart from that, UTHM students are also not left behind in winning various awards at the international level as well as making UTHM famous in the world.

Finally, I have full confidence that you will be a successful University citizen and can continue the tradition of University educational excellence. I am also confident that when you graduate, you will become a member of the community who is able to apply the knowledge that will be obtained and be able to contribute services, devotion and expertise for the sake of Religion, Nation and Country.

Wishing You Success.

“DENGAN HIKMAH KITA MENEROKA”

Y. BHG. PROFESOR TS. DR. WAHID BIN RAZZALY
Naib Canselor
Universiti Tun Hussein Onn Malaysia

Foreword from the Deputy of Vice Chancellor (Academic and International)

Assalammualaikum Warahmatullahi Wabarakatuh dan Selamat Sejahtera.

I would like to take this opportunity to congratulate new students who have been successfully selected to further their studies at Universiti Tun Hussein Onn Malaysia for this 2020/2021 session. Congratulations also to the Center for Academic Development and Training who has successfully published proforma which will be a guide for students to make learning planning from the first semester to graduation at this University.

The Coronavirus Disease 2019 (Covid-19) pandemic has changed the landscape of higher education in Malaysia. The process of learning and teaching (PdP) which previously went face to face had to be changed to the form of online learning to comply with the Standard Operating Procedures aimed at curbing the spread of the Covid-19 epidemic. For Semester 1 Session 2020/2021, UTHM has also encouraged the implementation of PdP in hybrid that is, part PdP face to face and part online. It is hoped that this effort will reduce the risk of Covid-19 infection, especially to UTHM students and academic staff.

To ensure the PnP process runs smoothly, UTHM has taken various proactive measures such as providing ICT infrastructure including increasing broadband line capacity, ICT infrastructure and providing online platforms such as Author applications, Google Classroom and e-Portfolio. In addition, UTHM lecturers have also been given training related to the online learning and teaching process to ensure that the teaching process runs efficiently.

I hope with the various initiatives that have been and are being done by UTHM will be able to provide a useful experience to you while exploring knowledge at UTHM. I would like to call on you to take the opportunity to be at UTHM to explore your potential through various activities and co-curricular programs provided in making you a holistic and balanced student. To achieve the aspirations of UTHM, the initial planning through Proforma will be able to help you plan your journey throughout the study period at UTHM and it is hoped that you will be able to obtain the best results and achieve excellent success.

Finally, I would like to wish you success and pray that you achieve excellent success in your studies at this University and in turn can contribute towards the provision of human capital that will contribute to the development of religion, race and country.

“DENGAN HIKMAH KITA MENEROKA”

PROFESOR DR. ISMAIL ABDUL RAHMAN
Timbalan Naib Canselor (Akademik dan Antarabangsa)
Universiti Tun Hussein Onn Malaysia

Foreword from the Dean

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 tauhidic paradigm

University Education Philosophy

The education and training in this university is a continuous effort to lead in the 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 a sustainable development

University Logo

The logo of Universiti Tun Hussein Onn Malaysia (UTHM) is the pride, identity and idealism of the members of UTHM community. UTHM logo displays a Proton, Book, Tiered Mortar Board, Book Rest and Shield.

The whole concept of the logo symbolises UTHM as an Institution of Higher Learning which supports the growth and development of knowledge at all levels in fields of Science and Technology.

Blue represents a close-knit circle of members of UTHM community which ensures the success and enhancement of its educational and research programmes and activities for the benefits of mankind.

Red symbolises the courage of UTHM in the exploration of new fields as the pioneer in science and technology applications, which reflects the spirit and self-esteem of the members of UTHM community.

Symbolism:

Red	Courage
Blue	Co-operation/Loyalty
Silver	Quality/Prestige
Book Rest	Repository of knowledge
Proton	Science and technology
Book	Knowledge
Mortar board	Levels of study
Shield	Confidence

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

University Board of Directors

Chairman

YBhg. Dato' Dr. Mohd Sofi Osman
Pengarah Urusan & Naib Presiden
PEN Operations

Members

Y. Bhg. Prof. Ts. Dr. Wahid bin Razzaly
Naib Canselor
Universiti Tun Hussein Onn Malaysia

YB Dato' (Dr.) Haji Nooh bin Gadot
Penasihat
Majlis Agama Islam Johor

YBhg. Datuk Ts. Pang Chau Leong
Wakil Alumni
Universiti Tun Hussein Onn Malaysia

YBhg. Dato' Ir. Dr. Haji Abdul Rashid bin Maidin
Akademi Profesional Koperasi Serbaguna Anak-anak Selangor Berhad (KOSAS)

YBrs. Encik Ahmad Luqman bin Mohd. Azmi
Ketua Pegawai Operasi Malaysia Airlines Berhad

YBrs. Dr. Sharifah Adlina binti Syed Abdullah
Kemeterian Kewangan Malaysia

YBhg. Dato' Dr. Mohd. Padzil bin Hashim
Wakil Swasta

YBhg. Prof. Dr. Azme bin Khamis
Universiti Tun Hussein Onn Malaysia

YBrs. Ts. Dr. Mohommad Naim bin Yaakub
Kementerian Pendidikan Tinggi Malaysia

Secretary

En. Abdul Halim bin Abdul Rahman
Pendaftar
Universiti Tun Hussein Onn Malaysia

Senate Members

Chairman

YBhg. Prof. Ts. Dr. Wahid bin Razzaly
Naib Canselor / Pengerusi

Members

Prof. Dr. Ismail bin Abdul Rahman
Timbalan Naib Canselor (Akademik dan Antarabangsa)

Professor Dr. Mohd Shahir Shamsir Bin Omar
Timbalan Naib Canselor (Penyelidikan dan Inovasi)

Prof. Madya Dr. Afandi bin Ahmad
Timbalan Naib Canselor (Hal Ehwal Pelajar dan Alumni)

Prof. Madya Ts. Dr. Mohd Kamarulzaki bin Mustafa
Provost UTHM Kampus Cawangan Pagoh

Prof. Dr. Ahmad Tarmizi bin Abdul Karim
Penolong Naib Canselor (Pembangunan, Pengurusan Fasiliti dan ICT)

Prof. Madya Dr. Mas Fawzi bin Mohd Ali *
Penolong Naib Canselor (Perancangan Strategik dan Perhubungan Korporat)

Prof. Dr. Azme bin Khamis
Dekan, Pusat Pengajian Siswazah

Prof. Ir. Ts. Dr. Mohd Irwan bin Juki
Dekan, Fakulti Kejuruteraan Awam dan Alam Sekitar

Prof. Madya Dr. Rosli bin Omar
Dekan, Fakulti Kejuruteraan Elektrik dan Elektronik

Prof. Dr. Shahruddin bin Mahzan @ Mohd Zin
Dekan, Fakulti Kejuruteraan Mekanikal dan Pembuatan

Prof. Dr. Wan Fauzi@Fauziah binti Wan Yusoff
Dekan, Fakulti Pengurusan Teknologi dan Perniagaan

Prof. Ts. Dr. Abdul Rasid bin Abdul Razzaq
Dekan, Fakulti Pendidikan Teknikal dan Vokasional

Ts. Dr. Azizul Azhar bin Ramli
Dekan, Fakulti Sains Komputer dan Teknologi Maklumat

Prof. Dr Hashim bin Saim
Dekan, Fakulti Sains Gunaan dan Teknologi

Prof. Madya Dr Jumadi bin Abdul Shukor
Dekan, Fakulti Teknologi Kejuruteraan

Prof. Madya Dr. Mohamad Zaky bin Noh
Dekan, Pusat Pengajian Diploma

Prof. Madya Dr. Khairul Azman bin Mohamad Suhaimy
Dekan, Pusat Pengajian Umum dan Kokurikulum
Dr. Zailin Shah binti Yusoff
Dekan Pusat Pengajian Bahasa

Prof. Madya Dr. Ishak bin Baba
Pengarah Pusat Pembangunan dan Latihan Akademik

Prof. Madya Ts. Dr. Razali bin Hassan
Pengarah Institut Penyelidikan Pendidikan dan Latihan Vokasional Malaysia (MyRIVET)

Prof. Dr. Hj. Rosman bin Md. Yusoff
Pengarah Institut Transformasi Sosial dan Pembangunan Wilayah

Prof. Ts. Dr. Abd Halid bin Abdullah
Fakulti Kejuruteraan Awam dan Alam Sekitar

Prof. Dr. Noridah binti Mohamad
Fakulti Kejuruteraan Awam dan Alam Bina

Prof. Dr. Mohammad Faiz Liew bin Abdullah
Fakulti Kejuruteraan Elektrik dan Elektronik

Prof. Ir. Dr. Md Saidin bin Wahab
Fakulti Kejuruteraan Mekanikal dan Pembuatan

Prof. Dr. Yusri bin Yusof
Fakulti Kejuruteraan Mekanikal dan Pembuatan

Prof. Dr. Abdul Talib bin Bon
Fakulti Pengurusan Teknologi dan Perniagaan

Prof. Dr. Rosziati binti Ibrahim
Fakulti Sains Komputer dan Teknologi Maklumat

Prof. Dr. Nazri bin Mohd Nawi
Fakulti Sains Komputer dan Teknologi Maklumat

Prof. Dr. Rozaini bin Roslan
Fakulti Sains Gunaan dan Teknologi

Prof. Madya Ts. Dr. Mohd Farhan bin Md. Fudzee
Pengarah Pusat Teknologi Maklumat

Ir. Dr. Raha bt. Abd. Rahman
Felo Industri

En. Abdul Halim bin Abdul Rahman
Pendaftar / Setiausaha Senat

En. Norzaimi bin Hamisan
Bendahari

Pn. Zaharah binti Abd Samad
Ketua Pustakawan

Pn. Norliah binti Yaakub
Penasihat Undang-Undang

Centre for Diploma Studies

Centre Vision

Excellent in providing multidisciplinary education in science and technology

Centre Mission

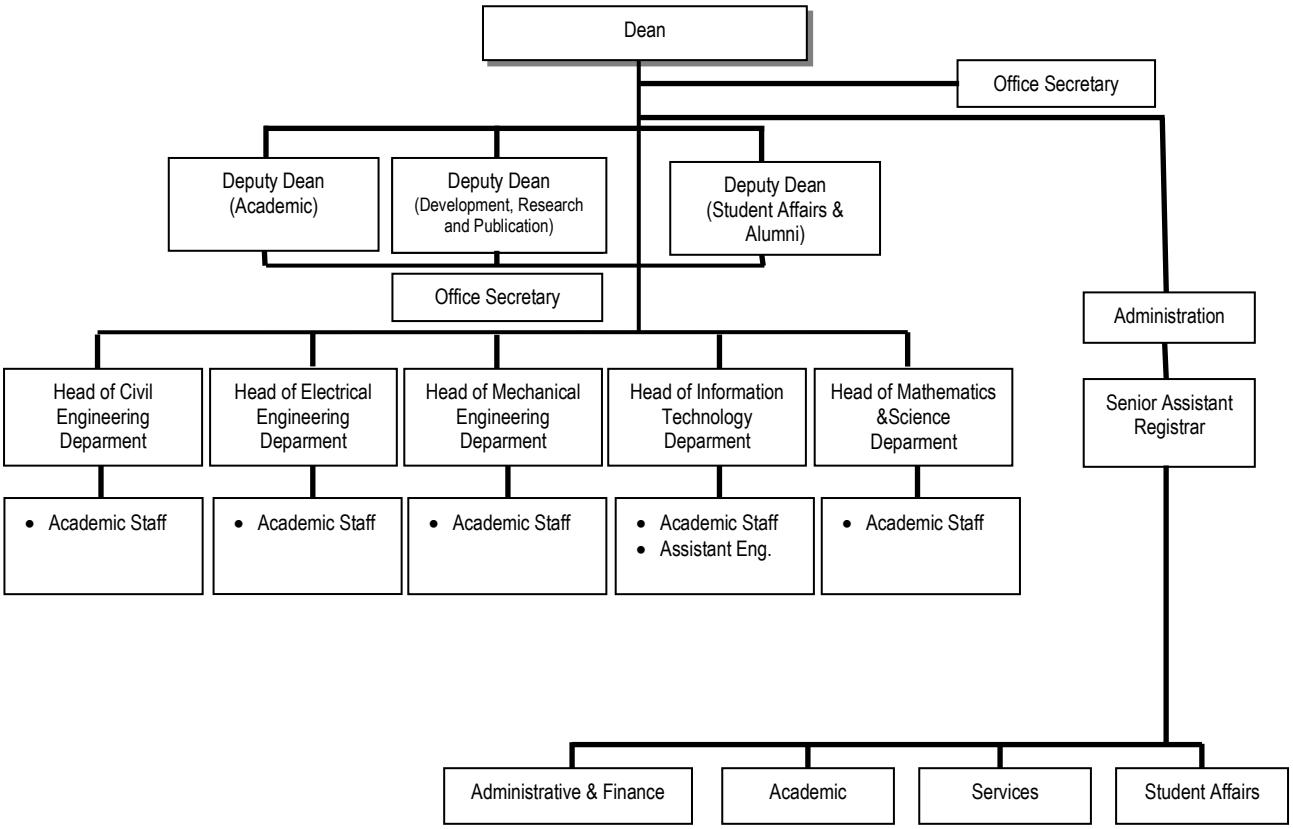
Producing graduates who contribute to national development through
a holistic academic program

The diploma programmes had been offered in UTHM since the establishment of Pusat Latihan Staf Politeknik (PLSP) in 1994. At that time only three programmes were offered and were being managed by a few departments of concerned. All of the programmes were than assigned under the management of the respective faculties when Kolej Universiti Teknologi Tun Hussein Onn (KUiTTHO) was established in the year 2001.

The establishment of the Centre for Diploma Studies was announced by the Vice Chancellor on the 1st August 2009. With the establishment of the Centre for Diploma Studies all of the diploma programme were able to be managed centrally thus increasing the competativeness of all diploma programmes being offered by other higher education institutions in this country.

It is the aim of the Centre for Diploma Studies to boost the diploma programmes in UTHM to a level such that it becomes the main choice of applicants. With that all potential applicants are most welcome to join the diploma programme in UTHM. All of the diploma programmes in UTHM is being conducted according to the Outcome Based Education method since the July 2010 session. The diploma programmes offer the opportunities for graduates to further their studies in UTHM. The establishment of the Centre for Diploma Studies is intended to achieved equilibrium in the academic excellence, co-curricullum and the individual development of its graduate such that to achieved the quality needed to fulfill the global occupational market. Until now the Centre for Diploma Studies, have offered six (6) programmes which are being managed by the various departments.

The Centre for Diploma Studies consists of five (5) departments and is led by a Dean and is being assisted by three (3) Deputy Deans. The organizational chart of the Centre for Diploma Studies is as shown:



Organisational chart of the Centre for Diploma Studies

Centre External Examiner and Industrial Advisor

Department of Sciences and Mathematics

External Examiner

Prof. Madya Dr. Siti Salhah binti Othman
Profesor Madya
Fakulti Sains dan Teknologi
Universiti Sains Islam Malaysia (USIM)

Prof. Madya Dr. Mior Ahmad Kushairi bin Mohd Zahari
Fakulti Kejuteraan Kimia dan Sumber Asli,
Universiti Malaysia Pahang (UMP)

Industrial Advisor

Encik Dzulhilmi bin Kamarudin Sohami
Planning Manager Supply
Nestle (M) Berhad
Dmansara

Puan Maskhairiah binti Ismail
Environmental Officer
ESH Department, Samsung SDI Energy, Malaysia

Faculty Staff Directory

Administration

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

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

Deputy Dean (Student Affairs and Alumni)
Hjh. Ziana bt Che Ros
M. Eng (Electrical)(UTHM), B. Eng. (Hons)(Electrical Engineering.) (UTM), Diploma (Electrical Engineering)(UiTM)

Deputy Dean (Development, Research and Publication)
Associate Professor 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), STPM (SM.Ungku Aziz, Sabak Bernam), SPM(SM.Convent Klang)

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
STPM (SM Tun Sardon Rengit)

SeniorAdministrative Assistant (Clerical & Operation) Administrative and Finance
Dorazi bin Md Noh
SPM (SM.Dato Sulaiman)

Administrative Assistant (Clerical & Operation) Academic
Razali bin Ahmad
SPM (SMK Tinggi Batu Pahat)

Administrative Assistant (Clerical & Operation) Development, Research and Publication
Muhammad Firdaus bin Yaacob
SPM (SMK Khir Johari)

Operation Assistant
Azwan bin Roslee
SPM (SMK Sultan Alauddin Riayat Shah 1, Pagoh)

Department of Sciences and Mathematics

Academic Staff

Head of Department
Dr. Norhazimah binti Abdul Halim
PhD (Bioprocess Engineering) (UMP), MEng (Bioprocess) (UMP), BEng (Chemical)(Biotechnology)(UMP)

Assoc. Prof. Dr Hjh. Nafisah @Kamariah binti Hj Md Kamaruddin
MSc. (Algebra & Statistics) (Ohio University, USA), BSc. (Mathematics) (University of Brigeport, USA)

Ts. Aida binti Muhamad
MEng (Civil Engineering) (UTHM), BSc.(Hons). (Chemistry) (UKM)

Pn. Siti Fatimah binti Mohd Noor
MSc. (Molecular Biology) (UKM), BSc.(Hons). (Genetics) (RIHS)

Pn. Rozainita binti Rosley
MSc. (Chemical Synthesis) (UPM), BSc, (Hons) (Petroleum Chemistry) (UPM)

Pn. Norliza binti Ghazali
MBA. (Strategic Management) (UTM), BSc. (Economy) (USM)

Cik Norbaizura binti Nordin
MSc. (Physic Instrumentation) (UPM), BSc, (Hons) (Physic) (UPM)

En. Misbahul Muneer bin Abd Rahman
BEng. (Chemical) (UiTM)

Pn. Nurhana binti Mohamad
MSc. (Mathematics) (UTM), BSc. (Industrial Mathematics) (UTM)

Pn. Jamilah binti Mohd Ghazali
MSc (Applied Mathematics)(UiTM), BSc(Mathematics Management)(UiTM)

Dr. Dilaeleyana binti Abu Bakar Sidik
PhD Eng (Tech)(UTHM)MEng (Chemical)(UTM), BEng (Chemical)(UMP),

Pn. Raudah binti Mohd Adnan
MBA (Marketing) (UPM), BBA (Marketing) (UiTM), Dip of Ed (Arts) (UPSI), Dip. Bus. Studies (UiTM)

Dr. Siti Noraiza binti Ab Razak
PhD (Physics)(UTM), MSc (Physics)(UTM), BSc (Health Physics)(UTM)

Pn. Norazreen binti Sharip
MSc (Physics)(UTM), BSc (Health Physics)(UTM)

Pn. Norain binti Ahmad Nordin
MSc. (Mathematics) (UTM), BSc. (Industrial Mathematics) (UTM)

Pn. Shazana bte Hashim
MSc. (Applied Statistic) (UPM), BSc. (Statistics) (UiTM)

Pn. Nuramirah binti Juma'at.
MSc. (Mathematics Engineering) (UTM), BSc. (Mathematics) (UTM)

Dr Norhaliza binti Abu Bakar
PhD (Applied Maths), MSc. (App. Mathematics) (UPM), BSc. with Education (Honours) Mathematics (UPM)

Dr. Muhammad Sufi bin Roslan
PhD (Physics) (UTM), MSc (Physics) (UTM), BSc (Physics)(UTM)

Cik Nur Shahirah binti Mohd Aripen
MEng (Chemical) (UKM), BEng (Chemical)(UiTM)

Cik Nurul Izzati binti Mohd Ismail
MEng (Bioprocess) (UTM), BEngTech (Biosystem)(UniKL).

Cik Basirah binti Fauzi
MPhil (Chemical Engineering) (UTM), BEng (Chemical-Bioprocess)(UTM)

Ts. Dr. Hazlini Binti Dzinun
PhD (Gas Engineering) (UTM), MEng (Civil-Environmental Planning) (UTM), BEng (Chemical)(UTM)

Dr. Adnin Afifi binti Nawi
PhD (Mathematics), BSc (Mathematics)

Dr. Mohd Zulariffin bin Maarof
PhD (Mathematics), Msc. (Mathematics), Bsc. (Mathematics)

En. Zul Afiq bin Sazeli
MSc. (Applied Mathematics), BSc. (Mathematics)

Programme Name

Diploma in Civil Engineering (DAA)

Programme Aims

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

Programme Educational Objectives (PEO)

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

PEO 1	Able to solve engineering problems competently with acceptable quality of work locally and globally
PEO 2	Able to demonstrate professionalism, ethics and sustainable values in Civil Engineering practice
PEO 3	Able to communicate effectively and demonstrate good leadership at workplace and community
PEO 4	Able to demonstrate entrepreneurship skills and recognize the need of lifelong learning for 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	DAC 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 10202	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* 1***1	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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4. Galanes, G. J. (2013). Effective group discussion: Theory and practice (14th ed.). New York: McGraw-Hill. HM736 .G34 2013
5. Greasley, P. (2011). Doing essays and assignments: Essential tips for students. Thousand Oaks, CA: Sage Publication. LB1047.3 .G73 2011
6. Lim, P. L. (2014). Listening & notetaking skills 2 (4th ed.). Boston: National Geographic Learning. PE1128 .L55 2014
7. Van Blerkom, D. L. (2012). College study skills (7th ed.). Boston, MA: Wadsworth/Cengage Learning. LB2395 .V36 2012.
8. Van Blerkom, D. L. (2005). College reading and study strategies. Belmont, CA: Wadsworth. LB2395.3 .V36 2005
9. Wong, L. (2012). Essential study skills (7th ed.). Boston, MA: Wadsworth Cengage Learning. LB1049 .W66 2012

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.

References

1. Modul Pengantar Kenegaraan dan Pembangunan Malaysia, (2018). Parit Raja : Penerbit UTHM
2. Mardiana Nordin dan Hasnah Hussin. (2014). Pengajian Malaysia. Shah Alam :Oxford Fajar
3. Perlembagaan Persekutuan (hingga 5 Februari 2014). (2014). Petaling Jaya, Malaysia: International Law Book Services.
4. Mohamed Suffian Hashim. (1994). Mengenal Perlembagaan Malaysia. Edisi Kedua. Kuala Lumpur: Dewan Bahasa dan Pustaka.
5. Nazaruddin Haji Mohd Jail, Ma'rof Redzuan, Asnarulkhadi Abu Samah dan Ismail Hj Mohd Rashid. (2004). Pengajian Malaysia: Kenegaraan dan Kewarganegaraan.

6. isi Kedua. Petaling Jaya. Prentice Hall. 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 Islamic Studies

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 dan 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. Mohammad Muslehudin (1989), Insuran dan Hukum Islam, Kuala Lumpur: Dewan Bahasa dan Pustaka. (BP190.5. I67 M65 1989)
14. 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 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
3. Nurulisyazila Othaman; Abu Hanifa Abu Mukhtar; Nurul Sabrina Zan; Idayu Nurillyana Daud. 2017. Bahasa Arab Tahap 1. Batu Pahat: Penerbit UTHM.
4. Surie Network, (2000): Minna no Nihongo: Kaite Oboeru, Tokyo: 3A Corporation. PL539.3 M56 2000
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. College algebra. Boston, MA : Cengage Learning. 2017. ISBN: 9781305652231
2. Larson, R. College algebra. Boston, MA : Cengage Learning. 2016. ISBN: 978137282291
3. Miller, M. Beginning algebra. New York : McGraw-Hill. 2014. ISBN: 9780073384481
4. Raji et al. Matematik asas. Skudai, Johor, Malaysia : Penerbit Universiti Teknologi Malaysia. 2002. 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). Engineering Mathematics I (DAS 10303). Centre for Diploma Studies, UTHM Publisher.
2. Nafisah@Kamariah Md. Kamaruddin el. al. (2016). Enineering 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. Smith Douglas; Technical drawing 101 with AutoCAD 2019 : a multidisciplinary guide to drafting theory and practice with video instruction; 8th ed., Mission, KS : SDC Publications, 2018. (T386.A97 .S54 2018)
2. Gupta, B.V.R.; Engineering drawing with auto cad; New Delhi : I.K. International , 2016. (T385 .G87 2016)
3. Hj. Adanan Hj. Ohman; Learning Module: DAC 10103 Engineering Drawing, 1st Edition; Penerbit UTHM; Batu Pahat, Johor; 2011. (T353.A26.2011a)
4. David A, Madsen and Terence M. Shumaker; Civil Drafting Techology; 4rd Edition; Perentice Hall; New Jersey; 2010. (T353.M324 2010)
5. Grabowski. Ralph;Using AutoCAD 2009. Delmar Learning: New York 2009. (T385.G76 2009)

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; Applied Mechanics for Engineering Technology, 7th Edition; Prentice Hall, USA; 2004.

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

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. USA: Pearson Education Limited. (TH145 .C48 2005)
3. S.W. Nunnally (2011). Construction Methods and Management. USA: Pearson Education Limited. (TH145 .N86 2011)
4. Derek Osbourn and Roger Greeno (2007). Introduction to Building, 3rd Edition. USA: Pearson Education Limited. (TH145 .O82 2007)
5. Trevor M Holroyd, Buildability: Successful Construction from Concept to Completion, Thomas Telford Publishing, 2003. (TH145 .H64 2003)
6. Noor Khazanah A. Rahman. Teknologi Pembinaan Struktur Bangunan. Dewan Bahasa dan Pustaka, 2019, 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. In 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

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. R. C. Hibbeler, Statics and Mechanic of Materials, Fifth Edition in SI Units, Pearson, 2019
2. James M. Gere, Mechanics of Materials 6th Edition, Thompson Learning Inc, 2004
3. Yusof Ahmad, Mekanik Bahan, Universiti Teknologi Malaysia (UTM).

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 (ath ed.). Hoboken, NJ:John Wiley. HF5549.5.16 .A44 2004.

2. Badger, Ian. (2003). Everyday Business Writing. Essex: Pearson. PEI I 15 .8327 2003.
3. Corfield, Rebecca. (2003). Preparing the Perfect Job Application: Application Forms qnd Letters Made Easy.New Dethi: Kogan Page. HF5383 .C67 2008.
4. Freitag-Lawrence, Anne. (2003). Business presentations. England: Pearson. P81479.887 .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. Mohammad Talha Mohamed Idris & Zulida Kadir (2009). Technical Communication II: Teaching Modul UMB 1122. Batu Pahat: UTHM.
7. Lambert, V. (2003). Everyday technical English. England: Pearson. PE1115 .L35 2003.
8. Leigh, J. (2004). CVs and job application. New York: Oxford University Press. HF5383 .L44 2004.
9. Molinsky, S.J,& Bliss, B. (1994). Day by day: English for employment communication (1st ed.). Englewood Cliffs, NJ: Longman. PE1128 . M67 1994.
10. Wendleton, K. (2014). Mastering the job interview and winning the game (5th ed.). Boston: Cengage Learning. HF5549.5.I6 .W46 2014.
11. 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 on the topic of materials in pavement structure and their related testing. Basic concept on flexible and rigid pavements design are also introduced. An overview of road construction is also taught to provide understanding of the involved procedures. The road maintenance and drainage are also introduced to students for them to be aware of the advantages. While in Traffic Engineering, students are introduced to traffic parameters such as volume, speed and capacity and data collection procedures. The elements along the cross section of a road are also introduced as well as various sight distances calculation. While, there is also chapter where students learn to determine the controller setting time of a signalised intersection. Lastly, students are introduced to traffic management and basic knowledge of road safety. Beside theory, students are involved in laboratory works 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. (2010). DAS 20502 Statistics. 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]
4. Bluman, Allan G. (2014). Elementary Statistics, A step by Step Approach. [QA276.12 .B58 2014]

DAC 21403 Geomatic Engineering

Synopsis

This course is an introduction to the science of survey: the definitions and basics of measurements, the measurement of distances and angles, working methods and procedures and data count. The survey of horizontal control that includes survey traverse, work methods, and data count. The survey of levels consist of sub topics vertical control surveying, heights datum and mean sea level, equipment and methods of levelling and contour lines survey. The field of particle survey includes tachometry, the basic of survey and work operation. The calculation of areas and volumes.

References

1. Ghilani, Charles D. ; Elementary surveying : an introduction to geomatics; Prentice Hall; 2008., No. Panggilan: TA545 .G44 2008
2. Kavanagh, Barry F. (2009). Surveying: Principles and Applications,8th Edition. USA: Pearson/Prentice Hall. (TA545 .K37 2009)
3. Kavanagh, Barry F. (2010). Surveying withconstruction applications, 7th Edition. USA: Prentice Hall. (TA625 .K38 2010)
4. Abd. Shukor Sarif dan Masiri Kaamin; Modul Kejuruteraan GeomatikI & II, Penerbit UTHM; 2006., No. Panggilan: TA549 .M37 2006
5. Watson, Paul (2008). Surveying and Engineering: Principles and Practice. USA: Blackwell. (TH438 .S97 2008)

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, Structural Analysis Module, 2016, 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: Perniagaan dan Keusahawanan, Penerbit UTHM, 2016TM Entrepreneurship Study Group (2004). Fundamentals of Entrepreneurship. Malaysia: Prentice Hall Pearson Malaysia Sdn. Bhd.
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. Call number: KPG1390.M34 2001 rw N2
2. Factories and Machinery Act & Regulations. MDC Publishers Printer Sdn. Bhd. 2001.Call number: KPG1390.A31967 .A4 2001 rw N1.
3. Ismail Bahari (2006). Pengurusan Keselamatan dan Kesihatan Pekerjaan. Edisi-2. McGraw Hill Education (Malaysia). Call number: T55.I85 2006.
4. Davies, V. J. and Tomasin K. (2006). Construction Safety Handbook. 2nd ed. London: Thomas Telford. Call number: TH443.R43 2006
5. Anton, Thomas J. (2009). Occupational Safety and Health Management. 3rd ed. New York: McGraw-Hill. Call number: 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; Reinforced concrete design ; John Wiley;2007. 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.

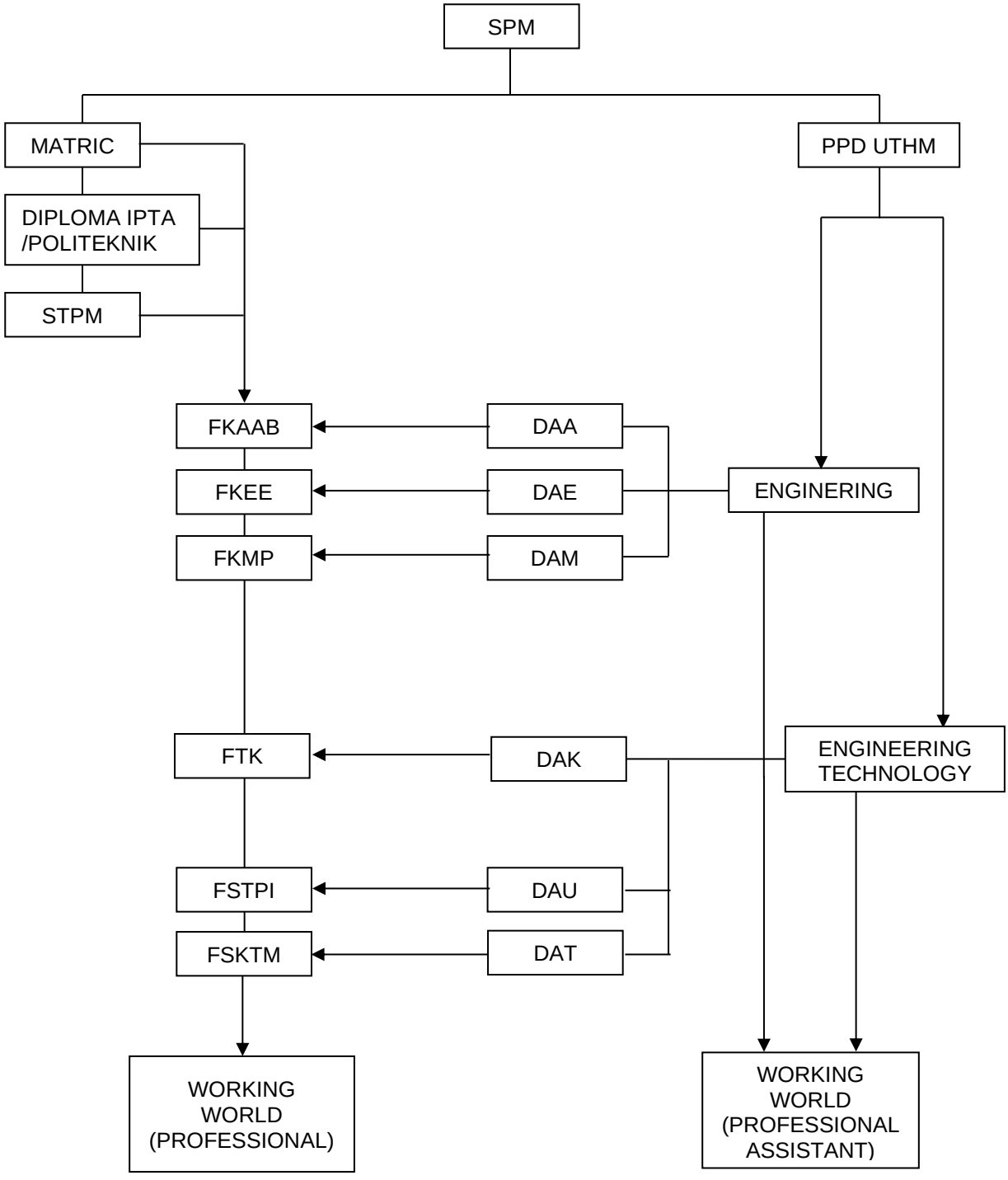
If they decided to further their study in UTHM, they can apply for a place in the Engineering Technology Faculty or Civil and Environmental Engineering Faculty to obtain the respective degree in Civil Engineering Technology or Civil Engineering.

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:

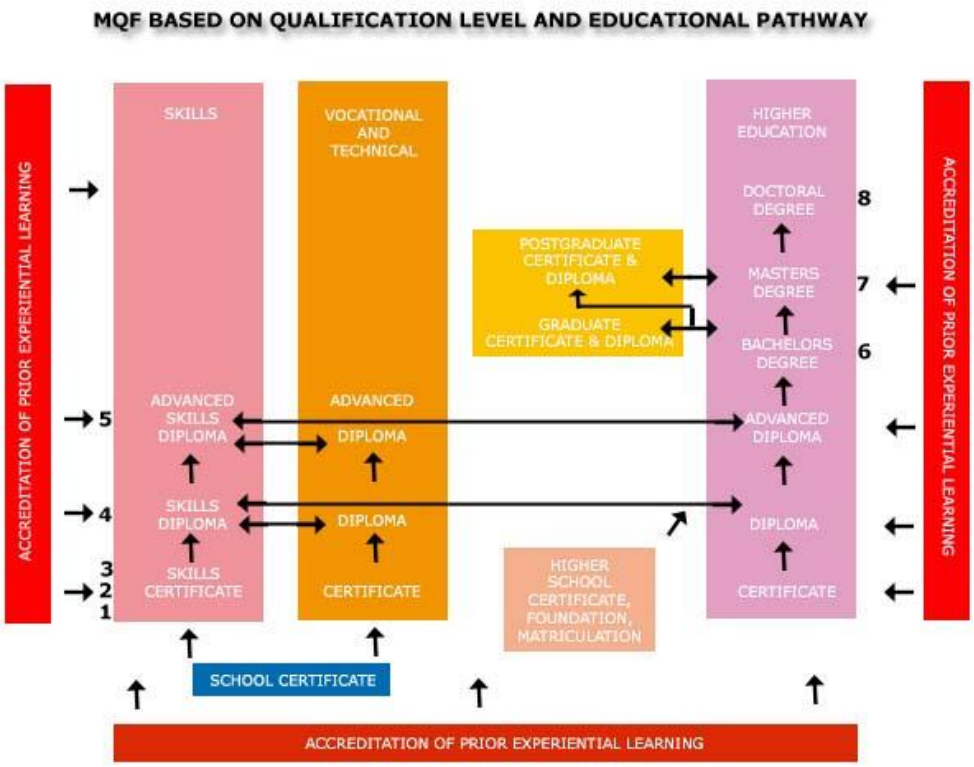
- Structural – bridges, dams, buildings, offshore platforms and pipelines
- Transportation – roads, railways, tunnels and airports
- Environmental – public water supply networks, irrigation, drainage, waste disposal and sewage treatment
- Maritime – ports, harbours and sea defences.

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