UTHM
Universiti Tun Hussein Onn Malaysia

ACADEMIC PROFORMA

2020/2021

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CENTRE FOR DIPLOMA STUDIES
CEDS

DIPLOMA IN ELECTRICAL 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.

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Centre for Academic Development and Training
Universiti Tun Hussein Onn Malaysia
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www.uthm.edu.my

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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

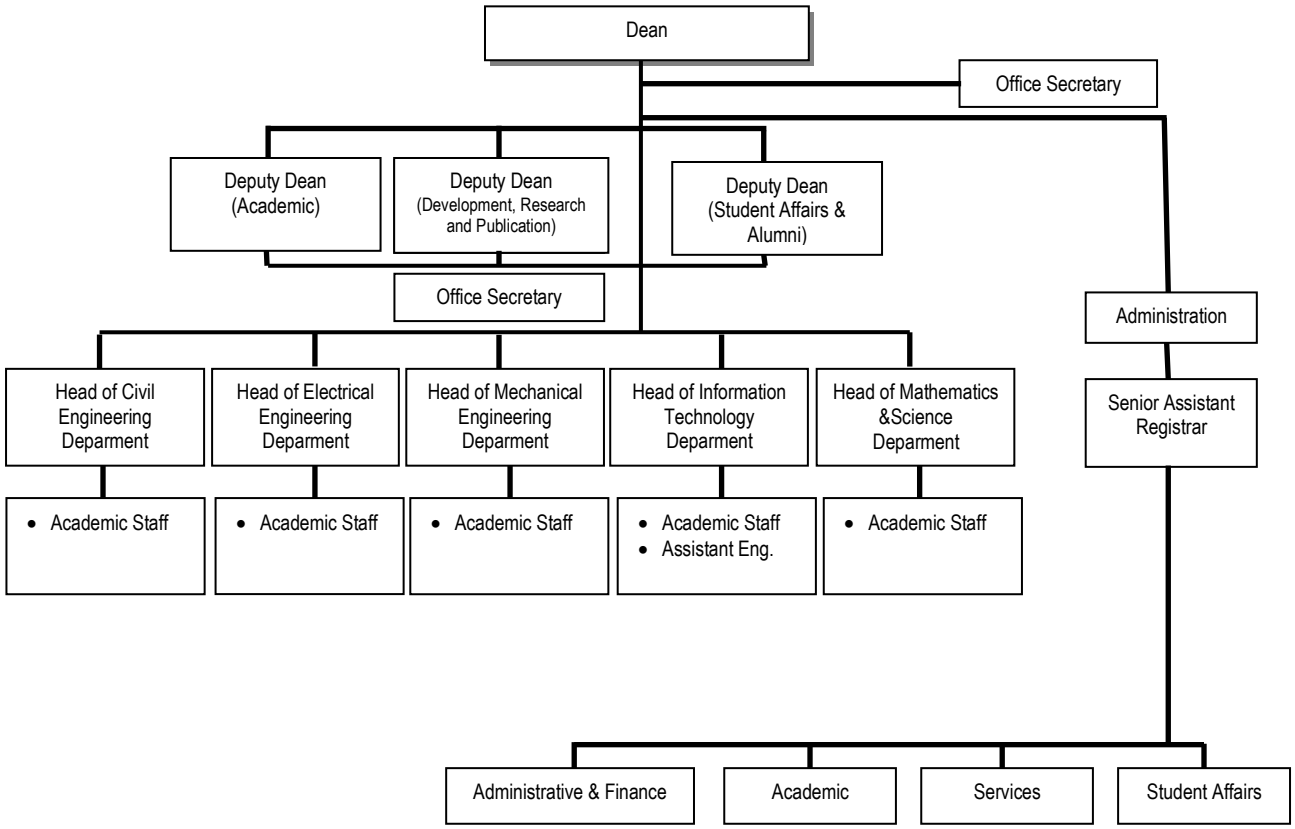
Producing graduates who contribute to national development through
a holistic academic program

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 Electrical Engineering (DAE)

Programme Aims

In line with the National Transformation 2050 (TN50) and the National Higher Education Strategic Plan (PSPTN), human capital development and education in Malaysia need to be strengthened by developing students' potential and committed to developing a dynamic ecosystem, in accordance with the needs of the Industrial Revolution 4.0. Along with these expectations, the program's educational objectives have been transformed to produce skilled worker (Electrical Engineering Technician) which has the following characteristics:

Programme Educational Objectives (PEO)

Program Educational Objectives are to produce an Electrical Assistant Engineer that are able to:

PEO 1 Competent in the field of Electrical Engineering to fulfil the needs of organization and industry

PEO 2 Able to adapt generic skills holistically in professional environment.

PEO 3 Realize to the important of life long learning and contribute through ethical and social work to the society continuously.

Programme Learning Outcomes (PLO)

Upon graduation, a graduate should acquire the followings:

PLO 1 Apply knowledge of mathematics, science and engineering to solve well-defined problems in electrical engineering

PLO 2 Identify and analyse well-defined electrical engineering problems using codified methods of analysis

PLO 3 Design solutions for well-defined electrical engineering technical problems and assist with the design of systems, components or processes to meet specified needs

PLO 4 Conduct investigation of well-defined electrical engineering problems to produce creative, innovative and effective solutions.

PLO 5 Apply appropriate techniques, resources, hardware and related software to solve well defined electrical engineering problems.

PLO 6 Demonstrate knowledge in a professional, ethical and humane, respective to the electrical engineering technician practice and solution

PLO 7 Realise the impact of electrical engineering technician work on the society and environment, also practice it for sustainable development

PLO 8 Understand and commit to professional ethics and responsibilities and norms of technician practice

PLO 9 Function effectively as an individual, and as a member in diverse technical teams

PLO10 Communicate effectively on well-defined engineering activities with the engineering community and society.

PLO11 Demonstrate knowledge and understanding of engineering management principles and entrepreneurial skills to manage projects in multidisciplinary environments

PLO12 Recognise the need for, and have the ability to engage in independent updating in the context of specialised technical knowledge

Curriculum

Table 1: Summary of curriculum for Diploma in Electrical Engineering

Year	Semester	Course Code	Courses	Credit	Total
	Special	UWB 1**02 UQU10403 UQI10402/ UQI11502	Foreign Language Introduction to Nationhood and Malaysia Development Introduction to Islamic Studies/Moral Studies	2 3 2	7
1	I	UQ* 1XXX1 UHB 10302 DAE 13003 DAE 13103 DAE 11003 DAE 10403 DAE 21403	Co-curriculum I English for Academic Survival Algebra Physic for Electrical Engineering Electrical Technology Computer and Multimedia Technology E;ectrical Measurement and Instrumentation	1 2 3 3 3 3 3	18
	II	UQ* 1XXX1 UHB 20302 DAE 12003 DAE 10102 DAE 20102 DAE 11103 DAE 21203 DAE 10202 DAE 21501	Co-Curriculum II Academic Communication Engineering Mathematics Occupational Safety & Health Computer Programming Circuit Theory Digital Electronic Electrical Wiring Computer Aided Design Laboratory	1 2 3 2 2 3 3 2 1	19
	III				
2	I	UHB 30502 DAN 20103 DAE 21303 DAE32103 DAE 32203 DAE 32303 DAE 31001	English for Workplace Business and Entrepenuership Electronic Control System Mikrocontroller Electrical Machines and Drives Electrical Engineering Project I	2 3 3 3 3 3 1	18
	II	UQI 11402 DAE 23602 DAE 22102 DAE 32403 DAE 32603 DAE 31203 DAE 31103	Philosophy and Current Issue Statistics Supervision Management Electrical Power System Communication Engineering Industrial Automation Electrical Engineering Project II	2 2 2 3 3 3 3	18
	III				
3	I	DAE 23910	Industrial Training (20 weeks)	10	10
			Total Credit		**90**

Synopsis of University Courses

Year	Sem	Course Code	Courses	Credit	Total
	Special	UWB 10*02	Foreign Language	2	7
		UQU 10403	Introduction to Nationhood and Development of Malaysia	3	
		UQI 10402/ UQI 11502	Islamic Studies/Moral Studies	2	
1	I	UQ* 1***1	Co-Curriculum I	1	3
		UHB10302	English for Academic Survival	2	
	II	UHB 20302	Academic Communication	2	3
		UQ* 1***1	Co-Curriculum II	1	
2	I	UHB 30502	English for Workplace	2	5
		DAN 20103	Business and Entrepreneurship	3	
	II	UQI 11402	Philosophy and Current Issues	2	3
3	-	-	-	-	-
Total Overall Credit					**20**

Synopsis of Courses

UWB1**02 Foreign 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. Call no. : 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. Mohd Hisyam Abdul Rahim; Ahmad Sharifuddin Mustapha; Mohd Zain Mubarak. 2008. Bahasa Arab UMR 1312. Batu Pahat: Penerbit UTHM. PJ6115 .M445 2008
4. Surie Network, (2000) : Minna no Nihongo : Kaite Oboeru, Tokyo : 3A Corporation. PL539.3 M56 2000
5. Gabriele Kopp, Siegfried Büttner, 2004. Planet 1: Deutsch für Jugendliche: Kursbuch**.** Ismaning: Germany: Hueber Verlag. PF3129. K664 2004
6. Nurul Sabrina Zan, (2010). Hola! Hablo españolFirst Edition Batu Pahat: Penerbit UTHM. PC4445 .N72 2010
7. Yrama, Widya (2008). Cara belajar membaca dan menulis huruf jawa, jilid 1. Yrama Widya. Publication info: 2008 131738.1

UQU10403 Introduction to Nationhood and Malaysia Development

Synopsis

This course discusses the basic concepts, the process of formation and development of the country. The topics that will be discussed are the struggle against colonialism, independence and the establishment of the Federation of Malaysia. In addition, the elements of Rukun Negara and the policies of development related to economy, politics and social, such as Vision 2020 and the statesmen's contributions in strengthening the continuity of Malaysia's success will also be discussed.

References

1. Ahmad Esa, Harliana Halim, Khairul Azman Mohd Suhaimy, Ku Hasnan Ku Halim, Marwan Ismail, Mohd Akbal Abdullah, Shamsaadal Sholeh Saad dan Zahrul Akmal Damin (2004). "Ikhtisar Sejarah Kenegaraan & Pembangunan Malaysia." Johor Bahru : Muapakat Jaya Percetakan Sdn. Bhd. [DS596 .I33 2003]
2. Fauziah Ani, Harliana Halim, Khairul Azman Mohd. Suhaimy, Khairunesa Isa, Ku Hasnan Ku Halim, Lutfan Jaes, Mohd. Akbal Abdullah, Shamsaadal Sholeh Saad, Siti Sarawati Johar, Zahrul Akmal Damin (2009). "Kenegaraan & Pembangunan Malaysia". Batu Pahat : Penerbit UTHM. (Modul Kenegaraan dan Pembangunan Mutakhir Malaysia)
3. Nazaruddin Mohd Jali, Ma'rof Redzuan, Asnarulkhadi Abu Samah dan Ismail Mohd Rashid (2005). "Pengajian Malaysia." Petaling Jaya : Prentice Hall. [DS596.6 .P46 2001 N2]
4. Lembaga Penyelidikan Undang-undang (2003). "Perlembagaan Persekutuan: (hingga 15hb.Ogos 2003)." Petaling Jaya : International Law Book Services. [KPG1744.51963.A3 .A4 2003 rw]
5. Ruslan Zainudin, Mohd Mahadee Ismail dan Zaini Othman (2005). "Kenegaraan Malaysia." Shah Alam : Fajar Bakti. [JQ715 .R87 2005]
6. Ting Chew Peh (1980). "Konsep Asas Sosiologi." Kuala Lumpur : Dewam Bahasa dan Pustaka. [HM51 .T56 1985]

UQI10402 Introduction to Islamic Studies

Synopsis

This course explains the concept of Islam as al-Deen. The scope of the discussion covers the study of the Qur'an and al-Hadith; faith of the Ahli Sunnah Wal Jamaah; principles of Islamic muamalat; introduction of Islamic Criminal Law; issues in Islamic Family Law and current issues.

References

1. Harun Din (Dr.) (2001), *Manusia Dan Islam,* cetakan pertama, Kuala Lumpur: Dewan Bahasa dan Pustaka. [BP174. M36 1990]
2. Mustafa Abdul Rahman (1998), *Hadith 40*, Kuala Lumpur: Dewan Pustaka Fajar. [BP135. A2 M87 1998]
3. Ismail Haji Ali, (1995), *Pengertian dan Pegangan Iktikad yang benar: Ahli Sunnah Wal Jamaah:* Kuala Lumpur: Penerbitan al-Hidayah. [BP166.78. P46 1995]
4. Paizah Haji Ismail (1991), *Undang-undang Jenayah Islam*, Kuala Lumpur: Dewan Pustaka Islam, Angkatan Belia Islam Malaysia. [BP144. P35 1991]
5. Mustafa Haji Daud (1989), *Institusi Kekeluargaan Islam,* Kuala Lumpur: Dewan Pustaka dan Bahasa. [BP188.3. F3.M87 1989]

UQI11502 Moral Studies

Synopsis

This subject explores the moral concepts, some aspects related to the morality and its importance in our daily life, some western moral theories, moral values in great religions of the world, morality and ethics in professional careers and contemporary moral issues.

References

1. Mohd Nasir Omar. (2010). *Falsafah Akhlak*, Penerbit Universiti Kebangsaan Malaysia, Bangi. [BJ1291 .M524 2010].
2. Hussain Othman. (2009). *Wacana Asasi Agama dan Sains.* Batu Pahat: Penerbit UTHM. [BL 240.3 H87 2009[a]].
3. Hussain Othman, S.M. Dawilah Al-Edrus, Berhannudin M. Salleh & Abdullah Sulaiman. (2009). *PBL Untuk Pembangunan Komuniti Lestari*.Batu Pahat: Penerbit UTHM. [LB 1027.42 P76 2009a].
4. Eow Boon Hin. (2002). *Moral Education*. Longman. [LC268 .E48 2008].
5. Ahmad Khamis. (1999). *Etika Untuk Institusi Pengajian Tinggi*. Kuala Lumpur: Kumpulan Budiman. [LC315.M3 .A35 1999].

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.

UHB 10302 English for Academic Survival

Synopsis

This course focuses on developing students' acquisition of 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 persor-ral and academic activities in the context of tertiary education.

References

1. Clark, Ruth Colvin. (2004). Graphics Learning: Provet in Training Materials. San Fransisco, CA: Pfei Lt]1043.5 .C52 2004.
2. Dunne, Elisabeth. (1994). 7'alking and Learning in Grc Fry, Ronald W. (1994). 7'ake Notes (2nd ed.). Hawthor Galanes, Gloria l. (2013).
3. Ef/bctive Group Discussion: McGraw-Hill. t-IM736 .G34 2013 Greasley, Pete. (2011). Doing essays and assignments Sage Publication. l-B 1047'3 .G73 20ll
4. Lim, Phyllis L. (2014). Listening & Notetaking Skills2 PEI 128 .L55 20l'l
5. Van Blerkom, Dianna L. (2012). College Study Skills (Learning. L82395 .V36 2012.
6. Wong, Linda. (2012). Essential Study Skills (7th ed.). ILI3 l 049 . W66 201)Study Strategies. Belmont, CA: Wadsworth.

DAE 13003 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. Related topics are Real Number: Set for real numbers. Exponent, radicals and logarithm. Polynomial: Quadratics equation. Inequalities and absolute value. Partial Fraction. Numerical methods solving non-linear equations: bisection and secant methods. Sequence and Series: Sequence. Arithmetic and geometric series and binomial expansion. Trigonometry: Trigonometric ratios of any angles and trigonometric equation. Matrices: Arithmetic operations. Row operations. System of linear equations: inverse matrices, Gauss Jordan elimination and numerical solution: Gauss-Seidel method. Vector: Dot and cross product. Equation of a Line and plane. Complex Number: Polar form. Euler form. De Moivre theorem.

References

1. Nafisah@Kamariah Md. Kamaruddin el. al. (2010). DAS 10103 Algebra. Centre for Science Studies, UTHM Publisher.
2. Abd. Wahid Md Raji et al. (2000). Matematik Asas, Jilid I&II. Jabatan Matematik, Fakulti Sains, UTM.
3. James, S. (2001). Intermediate Algebra. Boston: McGraw Hill. QA39.3 .S73 2002
4. Howard Anton. (1994) Elementary Linear Algebra. New York. Wiley. QA184 .A57 1994
5. Glyn James. (2001**).** Modern Engineering Mathematics. England. Prentice Hall. TA330 .J352 2001

DAE 13103 Physic for Electrical Engineering

Synopsis

This course will interactively engage students cognitively and scientifically in areas of fundamental physics, electricity and magnetism. Related topics areunits and measurements units; scalar and vectors; kinematics; work, energy and power; heat; electric field; electric potential; current and resistance; magnetism.

References

1. Giambattista, A., Richardson, B. M., Richardson, R. C. (2007). College Physics 2nd Ed. New York: Mc Graw Hill. QC21.3 .G52 2007
2. Serway, R. A., Faughn, J. S., Moses, C. J. (2006). College Physics. 6th Ed. USA:
3. Pacific Grove, CA: Thomson Learning. QC21.3 .S47 2006 v.2

4. Bueche, F. J., Hecht, E., Hademenos, G. J. (2000). College Physics: based on Schaum's Outline of college physics. New York: McGraw-Hill. QC31 .C64 2000
5. Urone, P. P. (2001). College Physics. 2nd Ed. USA: Pacific Grove, CA: Brooks/Cole. QC23 .U76 2001.
6. Kramer, L. (2007). College Physics. 8th ed. San Francisco, CA : Pearson. QC23.2 .K72 2007
7. Thomas L.Floyd (2009). "Principles of Electric Circuits Conventional Current Version" 7th Edition.Prentice Hall (TK454.F56 2007)

DAE 11003 Electrical Technology

Synopsis

This course aims at developing understanding of electrical laws and quantities in direct current (DC) and alternating current (AC) circuits together with its applications. The topics include concepts of electrical measurements: voltage, current and resistance; electric circuits; series circuits, parallel circuits, series and parallel circuits; principle of magnetism; magnetic circuits; fundamental of AC circuit; Basic transformer fundamentals; fundamental of AC circuit; Basic transformer fundamentals; fundamental of DC machine; Contruction of DC generator and DC motor.

References

1. Zaurin Ali, Azli Yusop, Mohd Kamal Jaafar, Mohd Sabani Mohd, Norhafiza Samion & Ziana Che Ros (2017). ''Electrical Technology" Module DAE11003 (08-0212)
2. Thomas L.Floyd (2009). "Principles of Electric Circuits Conventional Current Version" 7th Edition.Prentice Hall (TK454.F56 2007)
3. Edward Huges Revised by John Hiley, Keith Brown, Ian McKenzie (2005) "Electrical and Electronic Technology" 9th. Edition. Pearson (TK146.H83.2005)
4. Charles K. Alexander, Mathew N. O. Sadiku (2009). "Fundamentals of Electric Circuits" 4th edition. MGH (TK454.A43 2009)
5. Thomas L. Floyd, David M.Buchla (2010) "Electric Circuits Fundamentals" 8th edition. Prentice Hall (TK454.F56 2010)
6. Thomas L. Floyd (2007) "Electric Circuits Fundamentals" 7th edition. Pearson (TK454.F56 2007)

DAE 10403 Computer and Multimedia Technology

Synopsis

The course provides an overview of computer system and multimedia technology that covers hardware, software, networking and multimedia application development techniques. It also provides opportunity to employ multimedia technology particularly in development and design of multimedia presentation. Related topics are introduction to computing, hardware, software, networking, introduction to multimedia, multimedia applications, multimedia elements and web development.

References

1. Stallings, William (2011). Data and Computer Communications, 9th edition. London: Pearson Education. Shelf No: XX(132126.1)
2. Stallings, William (2011). Computer Organization and Architecture: Designing for Performance, 8th edition. Upper Saddle River: Prentice Hall. Shelf No: QA76.9.C643 .S72 2010
3. Huang, George Q. Mak, K. L.(2003). Internet Applications in Product Design and Manufacturing. Berlin: Springer. Shelf No: TS155.6 .H82 2003

4. Rahman, Syed Mahbubur (2008). Multimedia Technologies: Concepts, Methodologies, Tools and Applications. London: Information Science Reference. Shelf No: QA76.575 .R33 2008 v.3
5. Felke-Morris, Terry (2011). Web development and design foundations with XHTML, 5th ed. Boston : Addison-Wesley. Shelf No: QA76.76.H94 .F44 2011

DAE 21403 Electrical Measurement and Instrumentation

Synopsis

This course aims at developing the understanding and skills in the application of electrical and electronic instrumentation as well as measurement principles in the electrical and electronic engineering. Related topics are error and measurement;
DC and AC analogue meters; digital meters; calibration procedures; bridge instrument; oscilloscope: construction and operation, waveform measurement and analysis; sensors and transducers: characteristics and applications.

References

1. Jones L D, Chin A F, Electronic Instruments and Measurements, Prentice-Hall, 2008. Shelf No. TK7878.B42 2008
2. Tumanski, Slawomir (2006) Principles of Electrical Measurement. Boca Raton, FL: Taylor and Francis. Shelf No: TK275 .T85 2006
3. Cheatle, Keith (2006). Fundamentals of Test Measurement Instrumentation. Research Triangle Park, NC: ISA-Instrumentation, Systems, and Automation Society. Shelf No: TK7878.4 .C43 2006.
4. Bhavani, V.(2008). Measurement and Instrumentation. Petaling Jaya: IBS Buku. Shelf No: TK7878 .B42 2008.
5. Ghosh, Arun K.(2008). Introduction to Measurements and Instrumentation, 2nd ed. New Delhi: Prentice-Hall. Shelf No: TA165 .G46 2007

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.

UHB 20302 Academic Communication

Kursus 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. Richard Johnson-Sheehan (2005). Technical Communication Today. New York:Pearson. TK5105.S26
2. Fairbairn, Gavin J. (20 ll). Reading, Writing and Reasoning; A Guidefor Studerzrs. Maidenhead: Open University Press, 2011. L82395 .F34 20ll'
3. Jordan, R. R. (2003). Academic writing Course; study skills in English (3rd ed.). Essex: Longman. PEl408 .J67 2003.
4. Langan, John. (201I). Cottege WritingSkilts (Sth ed.). New York: McGraw-Hill.

PE1471 .L36 2011.
5. Lewis, Jrll. Readingfor Academic Success : Reading and Strategies. Boston: Houghton Mifflin' LF.2395.3 .L48 2002.
6. Cheesebro.T, O'Connor, L. & Rios, F. (2007). Communication skills: preparing for career success (3rd ed.) Upper Saddle River, NJ: Pearson. HF5718.C53

DAE 12003 Engineering Mathematics

Synopsis

This course explains in detail topics related to calculus. The first topic describes the limit of a function, one-sided limit, infinite limit, limit at infinity and continuity. Further topics are differentiation and integration techniques as well as their application like rate of change, L'Hopital's rule, area of bounded region, volume and surface area. The topic followed by Laplace transform including the inverse Laplace transform. Finally, the students will gain knowledge on applications of Laplace transform.

References

1. Abd. Wahid Md. Raji. (2018). Differential Equations for Engineering Students. Johor Bahru. UTM Publication. TA347.A32 2018.
2. Roland E. L. (2014). Calculus. Boston, MA : Brooks Cole, Cengage Learning. [QA303.2 .L377 2014]
3. *Arif, Mohamed. (2013). Calculus. Oxford, U.K. : Alpha Science Int'l. [QA303.2 .A74 2013]*
4. John, B (2014). Engineering Mathematics 7th Edition. London: Routledge. TA330.B57 2014.
5. Srimanta P. and Subodh C. B. (2015). Engineering Mathematics. New Delhi : Oxford Univ Press. [TA330 .P35 2015]

DAE 10102 Occupational Safety and Health

Synopsis

This course introduces students to knowledge and skills in occupational safety and health in workplace. Scope of study includes 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 ke-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. 3rded. New York: McGraw-Hill. Call number: T55.A57 1989.

DAE 20102 Computer Programming

Synopsis

This course to introduce to the programming development environment and enhance their skills in problem solving and program coding related to electrical engineering field. Topics covered are software development method; introduction to C++ programming language; Control structures; functions; array; string; pointer and structures;.

References

1. P.J. Deitel and H.M. Deitel (2010). C How to Program 6th Ed, Pearson International Edition. QA76.73.C15 .D45 2010
2. J.R. Hanly; E.B. Koffman (2009). Problem Solving and Program Design in C, Pearson International Edition.
3. Allert, James (2009). Programming with Visual C++: Concepts and Projects. Boston, MA: Course Technology. Shelf No: QA76.73.C153 .A44 2009
4. Malik, D. S. (2009). Introduction to C++ Programming. Boston, MA: Course Technology. Shelf No: QA76.73.C153 .M346 2009
5. Ling, Huo Chong (2009). C Programming for Beginners. Kuala Lumpur: Prentice Hall. Shelf No: QA76.73.C15 .C74 2009

DAE 11103 Circuit Theory

Synopsis

This course provides a comprehensive introduction of electric circuits, including circuit analysis techniques and its laws. Related topics are circuit elements which covers the units in electrical measurement, voltage and current, power and energy; analyzing the resistive circuits using Ohm's Law and Kirchhoff's Law in series/parallel circuits; circuit analysis using mesh analysis and nodal analysis; network theorems using superposition, thevenin and norton; maximum power transfer; inductor, capacitor and mutual inductance; first-order circuits - transient response and steady state analysis for RL and RC circuits; AC circuits – sinusoidal and phasor wave, impedance and admittance; AC power analysis.

References

1. Alexander, Charles K.; Sadiku, Matthew N. O. (2009). Fundamentals of Electric Circuits, 4th ed. Boston : McGraw-Hill. Shelf No: TK454 .A43 2009
2. Nilsson, James William; Riedel, Susan A. (2011). Electric Circuits, 9th ed. Boston : Prentice Hall. Shelf No: TK454 .N54 2011
3. Irwin, J. David; Nelms, R. Mark (2011). Engineering Circuit Analysis, 10th ed. Hoboken : John Wiley. Shelf No: TK454 .I78 2011
4. Dorf, Richard C.; Svoboda, James A. (2011). Introduction to Electric Circuits, 8th ed. Shelf No: TK454 .D67 2011
5. Boylestad, Robert L. (2010) Introductory Circuit Analysis 12th ed. Shelf No: TK454 ..B69 2010.

DAE 21203 Digital Electronics

Synopsis

This course provides knowledge and understanding of basic combinational logic circuits as well as their applications. Related topics are Introduction to digital, Number systems and codes; Codes and Digital Arithmetic; Basic gates and combinational logic circuit; Boolean Algebra and logic simplication; Combination logic function; Latch and flip-flop; Counters and registers functions; A hands-on laboratory is included in which students work in teams.

References

1. Floyd, Thomas L.(2009). Digital Fundamentals, 10th ed. Indianapolis, IN: Pearson. Shelf No: TK7868.D5 .F564 2009
2. Mandal, Soumitra Kumar (2010). Digital Electronics: Principles and Applications. New Delhi: Tata McGraw Hill. Shelf No: TK7868.D5 .M36 2010
3. Tokheim, Roger L. (2008). Digital Electronics: Principles and applications, 7th ed. New York : McGraw-Hill. Shelf No: TK7868.D5 .T644 2008
4. Tocci, Ronald J.; Widmer, Neal S.; Moss, Gregory L.(2011) Digital Systems: Principles and Applications, 11th ed. Upper Saddle River, NJ.: Prentice Hall. Shelf No: TK7868.D5 .T62 2011
5. Kharate, G. K. (2010). Digital Electronics. New Delhi: Oxford University Press. Shelf No: TK7868.D5 .K42 2010

DAE 10202 Electrical Wiring

Synopsis

The course provides students with basic skills in electrical engineering laboratory such as assembling, installing, inspecting and testing of electrical installation and wiring. Topics include safety, electrical wiring accessories, domestic and industrial wiring system, electrical wiring plan and design, cost estimation.

References

1. Md. Nasir Abd Manan (2004). Panduan Pendawaian Elektrik Domestik: I.E.E Edisi 16 BS7671:1992 Pindaan 2, 1997. Petaling Jaya: IBS Buku. Shelf No: TK9901 .M52 2004 a

2. Linsley, Trevor (2008). Basic Electrical Installation Work, 5th ed. Oxford: Newnes. Shelf No: TK452 .L564 2008.
3. Linsley, Trevor (2008). Advanced Electrical Installation Work, 5th ed. Oxford: Newnes. Shelf No: TK452 .L564 2008. Shelf No: TK452 .L56 2008
4. Smith, Robert L.; Herman, Stephen L.(2008). Electrical Wiring Industrial, 13th ed. Clifton Park, NY: Delmar Cengage Learning. Shelf No: TK3283 .S64 2008
5. Stokes, Geoffrey; Bradley, John (2009). A Practical Guide To the Wiring Regulations: 17th Edition IEE Wiring Regulations (BS 7671:2008). Boca Raton: CRC. Shelf No: TK3275 .S76 2009

DAE 21501 Computer Aided Design

Synopsis

This course aims at developing skills of electronic simulation and design with the aid of computer design software. Emphasise on the fundamental electronic design simulation, printed circuit board design and electrical drawing using computer aided engineering tools.

References

1. Muhammad H. Rashid (2004). Introduction to PSpice Using OrCAD for Circuits and Electronics, 3rd ed. Upper Saddle River, NJ: Prentice Hall. Shelf No: TK454 .M83 2004
2. Mitzner, Kraig (2009). Complete PCB Design Using OrCAD Capture and PCB Editor. Boston: Newnes. Shelf No: TK7868.P7 .M57 2009
3. Snyder, Gary D.; Buchla, David M.(2011). Multisim Experiments for DC/AC, Digital, and Devices Courses. Shelf No: TK7867 .S96 2011
4. Reeder, John (2005). Using MultiSIM: Troubleshooting DC/AC Circuits, 3rd ed. Albany, NY: Thomson Learning. Shelf No: TK7818 .R43 2006
5. Sidek, Azmi (2010). Modul Rekabentuk Berbantu computer, Penerbit UTHM
6. Floyd, Thomas L. (2005). Digital fundamentals, 7th Edition, Prentice-Hall, Inc.

Robbins, Allan H., Miller, W.C. (2004). Circuit analysis Theory and Practice, 3rd Edition, Thomson Learning

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 knowledge and 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. Mohammad Talha Mohamed Idris & Zulida Kadir (2009). Technical Communication II: Teaching Modul UMB 1122. Batu Pahat: UTHM.

DAN 20103 Business and Entrepreneurship

Synopsis

This course gives students exposure of business and entrepreneurship knowledge. It will go through the business and economy environment, forms of rules and business support facilities, entrepreneurship, identifying method, studying and choosing business opportunities, business plan and small and medium sized business management, marketing plan, operational plan, financial plan and current issued in entrepreneurship.

References

1. Wan Liz Ozman, Wan Omar Sulzari Mohamed (2002). Memperkasakan Usahawan : Panduan Lengkap Pengurusan Perniagaan dan Penjanaan Usahawan. Kuala Lumpur: Utusan Publications and Distributors. Shelf No: HB615 .W54 2002

2. Bamford, Charles E.; Bruton, Garry D. (2011). Entrepreneurship: a Small Business Approach. New York: McGraw-Hill. Shelf No: HD62.5 .B35 2011
3. Schaper, Michael (2011). Entrepreneurship and Small Business, 3rd ed. Milton, : John Wiley. Shelf No: HD2341 .E57 2011
4. Bessant, John; Tidd, Joseph. (2011). Innovation and Entrepreneurship, 2nd ed. Chichester, West Sussex, UK : Wiley. Shelf No: HD53 .B48 2011
5. Uchino, Kenji (2010). Entrepreneurship for Engineers. Boca Raton : CRC Press. Shelf No: HB615 .U23 2010

DAE 21303 Electronics

Synopsis

This course introduces electronic principles related to the analysis and operation of basic amplifiers, and basic electronic devices (diodes, BJT and FET transistors) used in electronic systems. Related topics are semiconductor – characteristics, diode models and other types; theory and diode application – rectifier, filter and regulator, limiter and clamper; Bipolar Junction Transistor (BJT) – characteristics and parameter, bias circuits, AC model, voltage amplifier; JFET – characteristic and parameter, biasing, JFET amplifier, power amplifier- Class A, B, AB and C Amplifier; Oscillator – theory of sinusoidal oscillations, Colpitts Oscillator, Hartley Oscillator and 555 Timer.

References

1. Floyd, Thomas L. (2008). Electronic Devices, 8th ed. Upper Saddle River, NJ: Pearson. Shelf No: TK7870 .F564 2008.
2. Malvino, Albert; Bates, David J. (2007). Electronic Principles, 7th ed. Boston: McGraw-Hill. Shelf No: TK7816 .M34 2007
3. Schultz, Mitchel E. (2007). Grob's Basic Electronics, 10th ed. New York: McGraw-Hill. Shelf No: TK7816 .S384 2007
4. Floyd, Thomas L. (2007). Electronics Fundamentals: Circuits, Devices and Applications, 7th ed.; Upper Saddle River, NJ.: Pearson. Shelf No: TK7816 .F56 2007
5. Boylestad, Robert L.; Nashelsky, Louis (2006). Electronic Devices and Circuit Theory, 9th ed. Upper Saddle River, NJ: Pearson. Shelf No: TK7867 .B69 2006

DAE 32203 Microcontroller

Pre Requisitet: DAE 21203 Digital Electronics

Synopsis

This course aims at developing a comprehensive understanding of the architecture, programming, interfacing and applications of microcontrollers. Topics covered are concepts of microcontroller, microcontroller architecture, memory unit, CPU, bus, I/O unit, communication, timer unit, AD conversion, PWM, C programming language, type of sensors and hardware interfacing.

References

1. Rafiquzzaman, M.(2011). Microcontroller Theory and applications With The PIC18F. Hoboken, N.J.: John Wiley &Sons Inc. Shelf No: TK7895.E42 .R33 2011.
2. Lucio, D. J. (2012). Programming 16-Bit Microcontroller in C, 2nd ed. United States of America: Newnes. Shelf No: TJ223 .P76 .D54 2012

3. Martin, B (2011). PIC Microcontrollers An Introduction to Microelectronics, 3rd ed. United States of America: Newnes.Shelf No: TJ223 .P76 .B374 2011
4. Sandhu. H. S.(2009). Making PIC MicrocontrollerInstruments & Controllers, United States of America: McGraw Hill. Shelf No: TJ 223 .P76 .S28 2009
5. Valdes-Perez, F. and Pallas-Areny, R.(2009).Microcontrollers Fundamentals and Applications with PIC,
6. Robbins, Allan H., Miller, W.C (2004).Circuit Analysis: Theory and Practice, 3rd Edition; Thomson Learning.
7. Simon Monk (2014). Programming Arduino Next Steps: Going Further with Sketches,Mc Graw Hill Education

DAE 32303 Electric Machines And Drives

Synopsis

This course introduces the knowledge of electrical machines and drives. The topics include DC machine; structure, electromagnetic forcé, generation, characteristics and speed control; transformer; parameter determination, equivalent circuit and losses; synchronous machine; structure and characteristics; special motor and single-phase motor; functional and operational concept and application; driver; DC and AC motor speed controller.

References

1. Wildi, Theodore (2006). Electrical Machines, Drives, and Power Systems, 6th ed. Upper Saddle River, NJ: Pearson. Shelf No: TK2182 .W54 2006
2. Rajput, R. K. (2006). Electrical Machines, 4th ed. New Delhi: Laxmi Publications. Shelf No: TK2182 .E43 2006
3. Salam, M. Abdus (2005). Fundamentals of Electrical Machines. Oxford: Alpha Science. Shelf No: TK2000 .S34 2005
4. Kissell, Thomas E.(2003). Industrial Electronics: Applications for Programmable Controllers, Instrumentation and Process Control, and Electrical Machines and Motor Controls, 3rd ed. Upper Saddle River, NJ: Prentice Hall. Shelf No: TK7881 .K57 2003
5. Herman, Stephen L.(2010). Industrial Motor Control, 6th ed. Clifton Park: Delmar Cengage Learning. Shelf No: TK2851 .H47 2010

DAE 32103 Control System

Synopsis

This course aims at developing an in-depth understanding of the concepts, theory and applications of basic technologies in control systems engineering. The topics covered are introduction to control engineering; open and closed loop control systems; types of analogue control systems; modelling of electrical, mechanical, and electromechanical systems; digital control systems; introduction to process control elements.

References:

1. Nise, Norman S.(2011). Control Systems Engineering, 6th ed. Hoboken, NJ: John Wiley & Sons. Shelf No: TJ213 .N57 2011
2. Nagrath, I. J. (2008). Control Systems Engineering, 5th ed. Tunbridge Wells: Anshan. Shelf No: TJ213 .N33 2008
3. Golnaraghi, M. F.; Kuo, Benjamin C. (2010). Automatic Control Systems, 9th ed. Hoboken, NJ: John Wiley. Shelf No: TJ213 .K86 2010
4. Dorf, Richard C.; Bishop, Robert H. (2008). Modern Control Systems, 11th ed. Prentice Hall: Pearson. Shelf No: TJ216 .D67 2008

5. Alavala, Chennakesava R. (2009). Principles of Industrial Instrumentation and Control Systems. Singapore: Cengage Learning Asia. Shelf No: TA165 .A42 2009

DAE 31001 Electrical Engineering Project 1

Synopsis

This course is the first part of a 2 part Final Year Electrical Engineering Diploma Project. In this course, students are introduced to multiple type of electrical engineering technologies, methodologies of research and project developement throught a series of lectures. Hopefully after this introduction students able to select the best project suit with industrial trend ans standard. Students are required to form a project team group consist a number of student as per department requirement. Students are guided through a step-by-step practice to complete the initial stages of proposal, planning and design of a project. Students must also meet regularly with supervisor(s) who will monitor their continuous progress. Students are required to prepare a report and present their initial work at end of semestar.

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References

1. Panduan Pelaksanaan Projek Akhir Diploma, PPD
2. Books, journals and other information which relates with the research project.

UQI 11402 Philosophy and Current Issues

Synopsis

This 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 thinking methods 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 and 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.

DAE 23602 Statistic

Synopsis

The course covers topics such as **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). Statistics (DAS20202). Pusat Pengajian Diploma, UTHM Publisher.
2. Wadpole - Mayer. Probability And Statistics For Engineers And Scientists. Prentice Hall. 2007. TA340 .W35 2007
3. Douglas C. Montgomery & George C. Runger (2011). Applied Statistics and Probability for Engineers. John Wiley. QA276.12 .M664 2011
4. Allan G.Bluman (2007) Elementary Statistics, A step by Step Approach. MacGraw Hill International Edition. QA276.12 .B58 2007

DAE 22102 Supervision Management

Synopsis

To develop supervision skills and technology-based organisation and leadership. Part one covers topics on the roles of supervisor, decision-making, ethics and organisational politics and time management. Part two emphasises on planning and organisational skills. Part three focuses on aspects of staff recruitment process, staf development, performance appraisal, employees' rights and union. Part four deals with humanity relationship skills and part five emphasises on the roles of monitoring in assisting supervision process. Commitment in providing services in safety and enviroment issue.

References

1. Supervision: Concepts and practices of management. Edwin C. Leonard Jr., Raymond L.Hilgert. 2007
2. Best practices : Managing people: secrets to leading for new managers. Barry Silverstein. 2007
3. Supervisory management. Charles R. Greer, W.Richard Plunkett. 2007.
4. Supervision : Concepts and skill-building. Samuel C. Certo. 2008.
5. Supervisory management : the art of inspiring, empowering and developing people. Donald C. Mosley, Paul H.Pietri, Donald C.Mosley, Jr. 2008.

DAE 32603 Communication Engineering

Synopsis

This course is about the exposure to the basic concepts in electronic communication system including the introduction to communication systems, signal and noise, modulation schemes for analog and digital systems, signal transmission, antenna and communication systems application.

References

1. Ziemer, Rodger E.; Tranter, William H (2010). Principles of Communications: Systems, Modulation, and Noise, 6th ed. Hoboken, NJ: John Wiley. Shelf No: TK5105 .Z54 2010
2. Fitz, Michael P. (2007). Fundamentals of Communications Systems. New York: McGraw-Hill. Shelf No: TK5101 .F57 2007
3. Tomasi, Wayme (2004). Electronic Communications Systems: Fundamentals Through Advanced, 5th ed. Upper Saddle River, NJ: Pearson Education. Shelf No: TK5101 .T65 2004
4. Frenzel, Louis E. (2008). Principles of Electronic Communication Systems, 3rd ed. New York: McGraw-Hill. Shelf No: TK5101 .F744 2008
5. Carlson, A. Bruce; Crilly, Paul B. (2010). Communication Systems: an Introduction to Signals and Noise in Electrical Communication, 5th ed. Boston: McGraw-Hill. TK5102.5 .C37 2010

DAE 32403 Electrical Power System

Synopsis

This course introduces the concept of electrical power system. The topics covered are introduction to basic electrical power systems, electrical energy generation, basic concepts of circuit analysis, distribution of electrical energy and damage analysis.

References

1. Fardo, Stephen W.; Patrick, Dale R.(2009). Electrical Power Systems Technology, 3rd ed. Lilburn, GA: Fairmont. Shelf No: TK1001 .F37 2009
2. Wadhwa, C. L. (2009). Electrical Power Systems. Tunbridge Wells, KY: New Age Science. Shelf No: TK1001 .W32 2009
3. Bandyopadhyay, M. N. (2006). Electrical Power Systems: Theory and Practice. New Delhi: Prentice-Hall of India. Shelf No: TK1005 .B36 2006
4. Glover, J. Duncan; Sarma, Mulukutla S.; Overbye, Thomas J. (2007). Power System Analysis and Design, 4th ed. Victoria: Thomson. Shelf No: TK1005 .G56 2007
5. Gill, Paul (2009). Electrical Power Equipment Maintenance and Testing, 2nd ed. Boca Raton, FL: CRC. Shelf No: TK401 .G54 2009

DAE 31203 Industrial Automation

Synopsis

This course introduces the concept of industrial automation system. The topics covered are introduction to basic industrial automation, automation system and programmable logic controller.

References

1. Sharma, Kls.,(2011). Overview of Industrial Process Automation, Elsevier. [TS182 .S52 2011]
2. Niku, Saeed (2011). Introduction to Robotics: Analysis, Control, Applications, 2nd ed. Indianapolis, IN: Wiley. [TJ211 .S24 2011]
3. Gupta, A.K., Arora, S.K., (2016). Industrial Automation and Robotics : An Introduction, Mercury Learning & Information.
4. Manesis, S. Nikolakopoulos, G., (2018). Introduction to Industrial Automation, CRC Press, Taylor & Francis Group.

5. Miller, Rex. & Miller, M.R., (2017). Robots and Robotics: Principles, Systems, and Industrial Applications, McGraw Hill Professional.

DAE 31103 Electrical Engineering Project II

Synopsis

This course is the second part of a 2 part Final Year Electrical Engineering Diploma Project. In this course, students are required to continue the next phase of their project developement from Final Year Electrical Engineering Diploma Project 1 Student are required to develop the solution by applying all their electrical engineering knowledge and techniques based on previous project proposal. The project should be tested and verified by using standard industry practice. Students must meet regularly with supervisor(s) who will monitor their continuous progress. Students are required to prepare a final report and present their final product.

References

1 Panduan Pelaksanaan Projek Akhir Diploma, PPD

2. Books, journals and other information which relates with the research project.

DAE 23910 Industrial Training

Synopsis

Students are to undergo an industrial training in electrical engineering field for 16 weeks. They will be trained by the agency/organization such as planning, management, design, field investigation, evaluation and assessment in related industries.

References

Pejabat Hubungan Universiti dan Industri, (2012) Industrial Training Guidebook (Bachelor and Diploma Programme), UTHM

Career and Further Education Prospect

Diploma in Electrical Engineering is a field of study that is concerned with the use of electricity in the design , testing and development of circuits and electrical equipment for power transmission systems , control of machines, appliances and high-powered systems .

Graduates are prepared for their future role in the economy by building a solid foundation in technical knowledge and skills related to the field of electrical engineering. The program provides knowledge and skills in the field of electrical engineering that can be applied to a variety of careers in the majority of suppliers of power generation and the manufacturing industry.

The graduates of this programme are eligible to begin their career in these fields :

1. Authority/ Utilities
   Example: Energy Commission, DOSH, Niosh, TNB, IPPs

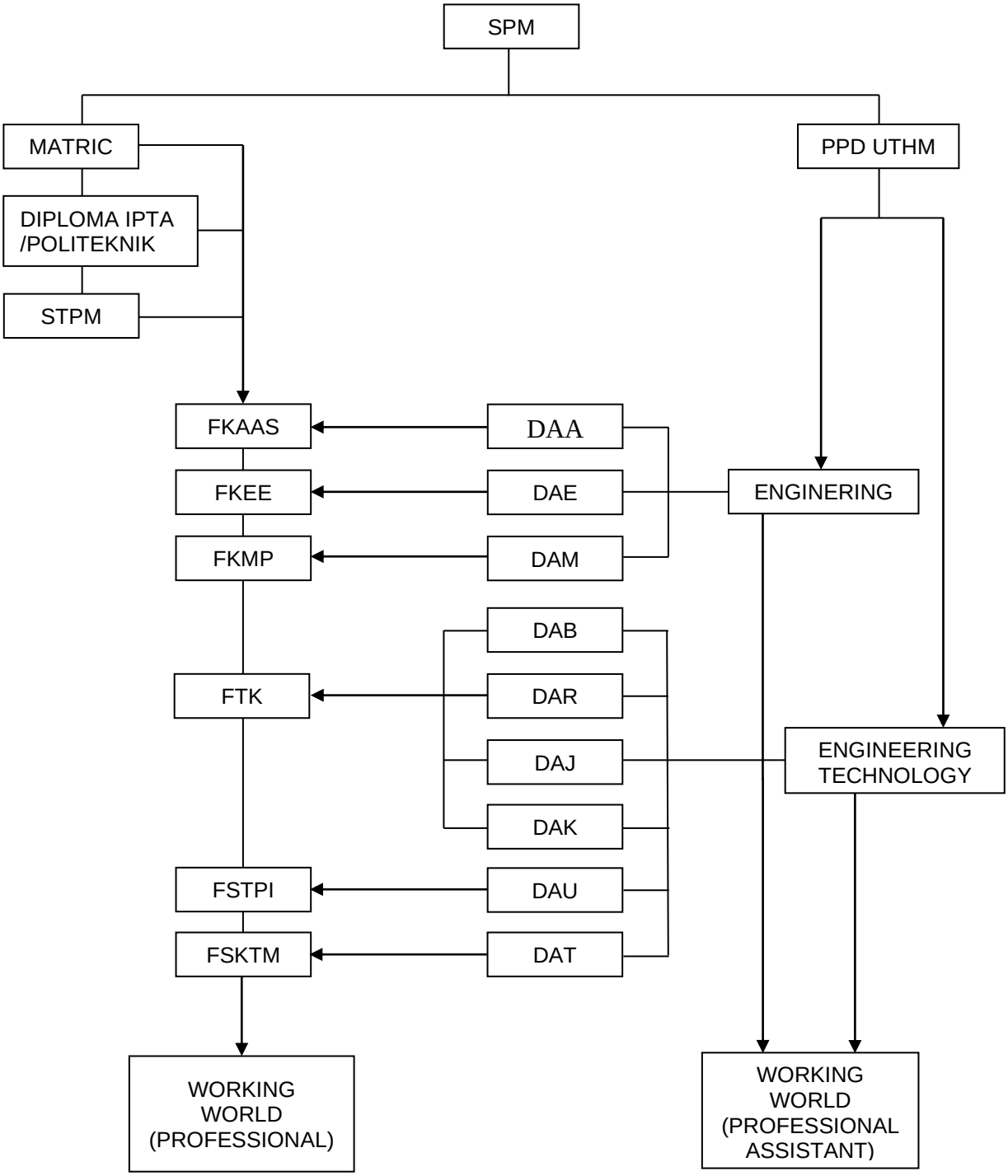
2. Engineering in manufacturing, consultancy,research & development and academic.

3. Procurement and Business Development
   Example: Sales and Project

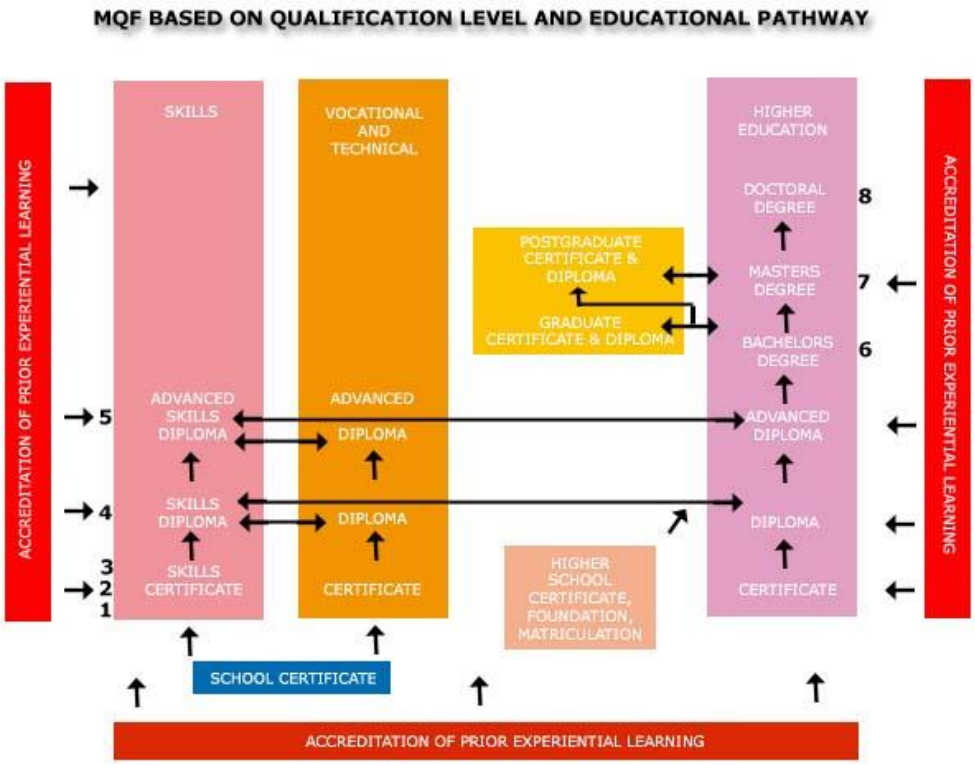
4. Construction
   Examples: Project Management

5. Testing and Commisioning

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
DAB – Diploma in Civil Engineering Technology
DAE – Diploma in Electrical Engineering
DAR – Diploma in Electrical Engineering Technology
DAM – Diploma in Mechanical Engineering
DAJ – Diploma in Mechanical Engineering Technology
DAT – Diploma in Information Technology
DAK – Diploma in Chemical Engineering Technology
DAU – Diploma in Apllied Sciences



Educational Pathway according to Malaysian Qualification Framework

MALAYSIAN QUALIFICATIONS FRAMEWORK: QUALIFICATIONS AND LEVELS

<table>
<tr><th rowspan="2">MQF Levels</th><th colspan="3">Sectors</th><th rowspan="2">Lifelong Learning</th></tr>
<tr><th>Skills</th><th>Vocational and Technical</th><th>Higher Education</th></tr>
<tr><td>8</td><td colspan="2" rowspan="4"></td><td>Doctoral Degree</td><td rowspan="9">Accreditation of Prior Experiential Learning (APEL)</td></tr>
<tr><td rowspan="2">7</td><td>Masters Degree</td></tr>
<tr><td>Postgraduate Certificate & Diploma</td></tr>
<tr><td rowspan="2">6</td><td>Bachelors Degree</td></tr>
<tr><td>Graduate Certificate & Diploma</td></tr>
<tr><td>5</td><td>Advanced Diploma</td><td>Advanced Diploma</td><td>Advanced Diploma</td></tr>
<tr><td>4</td><td>Diploma</td><td>Diploma</td><td>Diploma</td></tr>
<tr><td>3</td><td>Skills Certificate 3</td><td rowspan="3">Vocational and Technical Certificate</td><td>Certificate</td></tr>
<tr><td>2</td><td>Skills Certificate 2</td><td rowspan="2"></td></tr>
<tr><td>1</td><td>Skills Certificate 1</td></tr>
</table>

Qualifications and Levels of Education according to Malaysian Qualification Framework

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