UTHM
Universiti Tun Hussein Onn Malaysia

Universiti Tun Hussein Onn Malaysia
Is Ranked 1001-1200 QS WORLD UNIVERSITY RANKINGS

ACADEMIC PROFORMA 2024/2025

DIPLOMA IN ELECTRICAL ENGINEERING

Centre for Academic Development and Excellence
Universiti Tun Hussein Onn Malaysia

cad@uthm.edu.my
+6 07 453 7302
+6 07 453 6334 (Faks)
https://cad.uthm.edu.my

CENTRE FOR DIPLOMA STUDIES
CEDS

PUSAT PENGAJIAN DIPLOMA
UNIVERSITI TUN HUSSEIN ON MALAYSIA
KAMPUS PAGOH
HUB PENDIDIKAN TINGGI PAGOH
KM1, JALAN PANCHOR, 84600
PANCHOR, JOHOR

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

Contents

Foreword by the Vice Chancellor

Assalammualaikum Warahmatullahi Wabarakatuh and Salam Sejahtera.

I extend heartfelt congratulations and a warm welcome to each of you as you embark on your academic journey with us. Your decision to join UTHM marks a significant milestone, and I am deeply honored by your trust and commitment.

As an academic institution, we not only recognize the importance of the intertwined dimensions of economic, social, and sustainability (ESG) factors in the post-pandemic era but also embrace our responsibility to actively contribute to their advancement. Our commitment is unwavering as we strive to strengthen our core business pillar by focusing on various crucial aspects.

Firstly, we are dedicated to enhancing our academic delivery to ensure our students receive the highest quality education in today's rapidly evolving world. This commitment involves continually refining our curriculum, integrating innovative teaching methods, and cultivating critical thinking skills. We aim to equip students with the knowledge and capabilities needed to effectively address complex societal challenges. Secondly, we place significant emphasis on research efforts that contribute to sustainability objectives. By fostering a culture of interdisciplinary collaboration, we strive to generate pioneering research and innovative solutions that tackle pressing economic, social, and environmental issues. Our goal is to make meaningful contributions to the sustainable development of both local and global communities.

In addition to our core priorities, we actively enhance our impact by engaging with diverse stakeholders. Through partnerships, community outreach programs, and knowledge exchange initiatives, we aim to extend our positive influence beyond our institution. By leveraging our expertise and resources, we seek to address societal needs, promote inclusive growth, and enhance well-being. Furthermore, our efforts are guided by a commitment to good governance. We uphold the highest standards of transparency, accountability, and ethical practices. By fostering responsible decision-making and cultivating a culture of integrity, we aim to create an environment that builds trust, encourages collaboration, and ensures the long-term sustainability of our institution.

In summary, our dedication centers on achieving dynamically synergistic sustainability. We reinforce our core business pillar through enhanced academic delivery, impactful research endeavors, and enriched services. Upheld by our unwavering commitment to good governance, we believe these principles empower us to actively contribute to shaping a more sustainable and resilient future for all.

Last, but certainly not least, I extend a heartfelt welcome to all new students. I invite you to become valued members of our community. As you embark on this transformative journey, rest assured that my commitment is to ensure your experiences are enriching and enjoyable. Additionally, I sincerely wish you success in all your endeavors as you navigate this educational path.

“With Wisdom, We Explore”

Best wishes.

YANG BERHORMAT PROFESSOR DATO’ Ir. Ts. Dr. RUZAIRI BIN ABDUL RAHIM
Vice-Chancellor
Universiti Tun Hussein Onn Malaysia

Foreword by the Deputy Vice Chancellor (Academic and International)

Assalammualaikum Warahmatullahi Wabarakatuh and Salam Sejahtera.

We extend our heartfelt congratulations and a cordial welcome to all the fresh faces embarking on their academic journey at Universiti Tun Hussein Onn Malaysia (UTHM) in the upcoming academic term of 2024/2025. Here at UTHM, we take pride in our distinct qualities and educational opportunities that distinguish us from the rest. Our pledge to provide an exceptional learning experience remains unwavering, as we are dedicated to helping you achieve academic success and surpass your expectations.

I want to extend my sincere appreciation and congratulations to the Centre for Academic Development and Excellence (CAD) and the faculties for successfully creating this academic proforma. This resource is incredibly valuable as it provides a concise overview of the different programs offered. Serving as a helpful tool, it not only guides students but also assists them in effectively planning their academic journey. By providing essential information and perspectives, it enables students to make informed choices and navigate their educational endeavors with confidence.

The Ministry of Higher Education Malaysia (MOHE) has set in motion new initiatives to enhance academic facilities and digital resources to meet the country's educational requirements. This effort includes a focus on digitalization to establish a more conducive, secure, and efficient learning environment, while also promoting innovation, adaptability, and global competitiveness.

To keep students engaged and boost enrolment numbers, we are implementing several effective measures. These measures include introducing hybrid programs and shortening the study period. As a university affiliated with the Ministry of Higher Education (MOHE), we request your support and understanding as we endeavor to execute these beneficial initiatives. Moreover, we are committed to promoting Technical and Vocational Education Training (TVET) programs as part of our long-term objective to become a leading Global Technopreneur University (GTU) by 2030.

It is crucial, from our perspective, to enhance, strengthen, and sustain our programs and workforce. We are proud to mention that all 110 of our programs are accredited by the Malaysian Qualification Agency (MQA) and their relevant professional organizations. This accreditation is maintained through the commitment of our knowledgeable staff, both in academic and support roles, who consistently engage in skill-building and training programs.
I truly believe that the programs implemented by UTHM will offer invaluable opportunities for you to develop and improve your skills. With the introduction of this new system, I anticipate great academic accomplishments and successes for all of you. This is a pivotal moment for you to create a positive impact not only in our country but also in the broader international community.

Best wishes,

PROFESSOR DR. SHAHRUDDIN BIN MAHZAN @ MOHD ZIN
Deputy Vice Chancellor (Academic and International)
Universiti Tun Hussein Onn Malaysia

Foreword from Dean

Assalamualaikum Warahmatullahi Wabarakatuh and Salam Sejahtera.

Congratulations, and welcome to Universiti Tun Hussein Onn Malaysia (UTHM), a leader in TVET higher education. We are thrilled to have you join the Centre for Diploma Studies (CeDS), where our mission is to support and train you to become semi-professionals in engineering, science, and technology.

CeDS is dedicated to managing and operating the Diploma programs at UTHM. Our vision and mission are clear: to produce graduates who contribute to national development through holistic academic programs. We offer seven multidisciplinary programs in civil engineering, mechanical engineering, electrical engineering, chemical engineering, applied science, information technology, and animation technology.

To ensure our academic programs meet the highest standards, all our programs are accredited by the Malaysia Qualification Agency (MQA). Additionally, four of our engineering programs are accredited by the Board of Engineers Malaysia (BEM). A variety of programs and activities are designed to develop students' personalities and prepare them for the Industrial Revolution IR 4.0 workforce.

UTHM is renowned for its excellent infrastructure and teaching facilities, meeting the standards set by accreditation bodies. The ongoing development of our campus ensures a comfortable and conducive learning environment, with amenities such as libraries, residential colleges, cafeterias, sports facilities, wireless internet, and more.

As you embark on your diploma journey at UTHM, we encourage you to use this proforma as a guide and reference to help you plan and complete your studies with excellence.

Wishing You Success.
“CeDS: Creating Dynamic Students”

"WITH WISDOM WE EXPLORE"

DR. MUHAMMAD FAIZAL BIN ISMAIL
Dean
Centre for Diploma Studies (CeDS)
Universiti Tun Hussein Onn Malaysia

Vision

To be a global technical university in sustainable technology and transportation

Mission

Provide technical solution for industry and community based on tauhidic paradigm

Education Philosophy of University

UTHM education and training, founded on the tauhidic paradigm, strive to produce competent, professional and entrepreneurial graduates, driven by advanced technologies for global development.

Logo of University

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

Symbolism:

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

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

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

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

Chancellor

HIS ROYAL HIGHNESS
TUNKU ISMAIL IBNI SULTAN IBRAHIM
Tunku Mahkota Johor

Pro-Chancellor

Yang Amat Mulia Tunku Idris Iskandar Al-Haj Ibni Sultan Ibrahim
Tunku Temenggong Johor

Yang Berhormat Tan Sri Dato' Dr. Haji Azmi Bin Rohani
Setiausaha Kerajaan Johor

Board of Directors of University

Chairman

YBhg. Dato' Sri Ibrahim bin Ahmad

Members

YBhg. Prof. Ir. Ts. Dr. Ruzairi Bin Abdul Rahim
Vice-Chancellor, Universiti Tun Hussein Onn Malaysia

Mrs.Mahfuzah binti Baharin

Deputy Under-Secretary (Sector of Tax Incentive & Sectoral)

TSBC (GCS) Tax Division

Ministry of Finance Malaysia

YB. Dato' (Dr.) Haji Nooh bin Gadot
Advisor, Johor Islamic Religious Council

YBrs. Prof. Ir. Dr. Mohd Amri bin Lajis
Professor, Universiti Tun Hussein Onn Malaysia

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

YBrs. Mdm. Elain binti Lockman
Chief Executive Officer and Co-Founder, Ata Plus Sdn. Bhd.

YBrs. Dato' Dr. Mohd Sharil bin Abdullah

Director of Industrial Relations Division

Department of Higher Education

YBrs. Ir. Ts. Abdul Rahman bin Bahasa
Chief Executive Officer, Recove Group

YBrs. Encik Hasry bin Harun

Chief Executive Officer

Malaysia Rail Development Corporation

YBhg. Datuk Md Jais bin Haji Sarday
Board Member, Universiti Tun Hussein Onn Malaysia

Secretary

YBrs. Mr. Naim bin Maslan
Registrar/Chief Operating Officer (COO), Universiti Tun Hussein Onn Malaysia

Members of Senate

Chairman

YBhg. Prof. Ir. Ts. Dr. Ruzairi Bin Abdul Rahim
Vice Chancellor

Members

Prof. Dr. Shahruddin bin Mahzan @ Mohd Zin
Deputy Vice Chancellor (Academic and International)

Prof. Ts. Dr. Rabiah Binti Ahmad
Deputy Vice Chancellor (Research and Innovation)

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

Assoc. Prof. Dr. Afandi bin Ahmad
Provost UTHM Pagoh Branch Campus

Prof. Ir. Dr. Md Saidin Bin Wahab
Assistant Vice Chancellor / Chief Digital Officer (CDO) (Digital and Infrastructure)

Prof. Dr. Mas Fawzi bin Mohd Ali
Assistant Vice Chancellor (Strategic and Quality)

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

Prof. Ir. Ts. Dr. Mohd Haziman bin Wan Ibrahim
Dean, Faculty of Civil Engineering and Built Environment

Assoc. Prof. Ts. Dr. Asmarashid Bin Ponniran
Dean, Faculty of Electrical and Electronic Engineering

Prof. Ts. Dr. Amir Bin Khalid
Dean, Faculty of Mechanical and Manufacturing Engineering

Assoc. Prof. Dr. Shafie Bin Mohamed Zabri
Dean, Faculty of Technology Management and Business

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

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

Assoc. Prof. Ts. ChM. Dr. Hatijah binti Basri
Dean, Faculty of Applied Science and Technology

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

Dr. Muhammad Faizal bin Ismail
Dean, Centre for Diploma Studies

Dr. Lutfan Jaes
Dean, Centre for General Studies and Co-curricular

Assoc. Prof. Dr. Hj. Azmi Bin Abdul Latiff
Dean, Centre for Language Studies

Assoc. Prof. Dr. Rosli Bin Omar
Director, Centre for Academic Development and Excellence

Prof. Emeritus Dr. Jailani bin Md Yunos
Director, Malaysia Research Institute for Vocational Education and Training

Dr. Zahrul Akmal bin Damin
Institute for Social Transformation and Regional Development (TRANSFORM)

Prof. Ts. Dr. Mohd Khairul bin Ahmad
Insitute for Integrated Engineering(I^2E)

Prof. Ir. Dr. Noridah Binti Mohamad
Faculty of Civil Engineering and Built Environment

Prof. Ts. Dr. Aeslina Binti Abdul Kadir
Faculty of Civil Engineering and Built Environment

Prof. Ts. Dr. Norzila binti Othman
Faculty of Civil Engineering and Built Environment

Prof. Ir. Dr. Erwan bin Sulaiman
Faculty of Electrical and Electronic Engineering

Prof. Dr. Nafarizal Nayan
Faculty of Electrical and Electronic Engineering

Prof. Dr. Zawati Binti Harun
Faculty of Mechanical and Manufacturing Engineering

Prof. Dr. Hasan Zuhudi bin Abdullah
Faculty of Mechanical and Manufacturing Engineering

Prof. Sr. Dr. Wan Zahari Wan Yusof
Faculty of Technology Management and Business

Prof. Ts. Dr. Alina Shamsuddin
Faculty of Technology Management and Business

Prof. Ts. Dr. Soew Ta Wee
Faculty of Technology Management and Business

Prof. Ts. Dr. Ishak Baba
Faculty of Technical and Vocational Education

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

Prof. Dr. Rozaida Ghazali
Faculty of Computer Science and Information Technology

Prof. Ts. Dr. Zaidi Embong
Faculty of Applied Sciences and Technology

Prof. Ir. Dr. Mohd Amri bin Lajis
Faculty of Engineering Technology

Prof. Ir. Dr. Chan Chee Ming
Faculty of Engineering Technology

Ts. Dr. Khalid bin Isa
Director Student Development Centre

Prof. Dr. Nazri Bin Mohd Nawi
Director Centre Information Technology

Prof. Eur Ing. Ir. Ts. Dr. Shahiron bin Sahidan
Faculty of Civil Engineering and Built Environment

Mr. Naim Bin Maslan
Registrar / Chief Operating Officer (COO) / Secretary of Senate

Mr. Norzaimi Bin Hamisan
Bursar / Chief Financial Officer (CFO)

Mdm. Zaharah Binti Abd Samad
Chief Librarian

Mdm. Norliah Binti Yaakub
Legal Advisor

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

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

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

It is the aim of the Centre for Diploma Studies to offer diploma programs at UTHM which are going to be the main choice of applicants. Students are expected to show academic excellence as well as participating in co-curriculum activities which will further develop their potential in order to achieve the quality needed to fulfill the global occupational market. In addition, graduates of these programs also have the wides opportunity to further their studies at Bachelor Degree level at various faculties in UTHM.

Now, the Centre for Diploma Studies, offer seven (7) diploma programs which are managed by five (5) departments and is led by a Dean who is assisted by three (3) Deputy Deans. The organizational chart of the Centre for Diploma Studies is shown in the next page:

CARTA ORGANISASI PUSAT PENGAJIAN DIPLOMA

DEKAN

DR. MUHAMMAD FAIZAL BIIN ISMAIL

Setiausaha Dekan

PENTADBIRAN

Ketua Bahagian
NORSALEHA BINTI ALI
Penolong Pendaftar Kanan
N44

TIMB. DEKAN AKADEMIK

Ts. DR. NORHAYATI BINTI NGADIMAN:

Setiausaha Timbalan Dekan

TIMB. DEKAN PENYELIDIKAN, PEMBANGUNAN & PENERBITAN

Ts. Dr. HAZLINI BINTI DZINUN

TIMB. DEKAN HAL EHWAL PELAJAR & ALUMNI

DR. MUHAMMAD AZRI BIN OTHMAN

UNIT PENTADBIRAN & KEWANGAN

Ketua Unit
N32/N29

PTPO Kewangan
N22/N19

PTPO Pentadiran
N22/N19

Pembantu Operasi
N11

UNIT AKADEMIK

Ketua Unit
N32/N29

PTPO Hal Ehwal Pelajar & Alumni
N22/N19

PTPO Akademik
N22/N19

PTPO Penyelidikan, Pembangunan & Penerbitan
N22/N19

KETUA JABATAN KEJURUTERAAN AWAM

Ts. Dr. ASLILA BINTI ABD KADIR

Ketua Program

KETUA JABATAN KEJURUTERAAN ELEKTRIK

NORHAFIZA BINTI SAMION

Ketua Program

KETUA JABATAN KEJURUTERAAN MEKANIKAL

Dr. NOOR AZIZAH BINTI SIDEK

Ketua Program

KETUA JABATAN SAINS & MATEMATIK

NORLIZA BINTI GHAZALI

Ketua Program

KETUA JABATAN TEKNOLOGI MAKLUMAT

Ts. Dr. NOORDIANA BINTI KASSIM@KASIM

Ketua Program

CERTIFICATE OF ACCREDITATION
DIPLOMA OF ELECTRICAL ENGINEERING

LEMBAGA JURUTERA MALAYSIA

DENGAN INI MEMPERAKUKAN BAHAWA PROGRAM PENGAJIAN

DIPLOMA IN ELECTRICAL ENGINEERING

(3-Year Programme after SPM)

YANG DIKENDALIKAN OLEH:

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

TELAH MENDAPAT PENGIKTIRAFAN RASMI BAHAWA KELAYAKAN AKADEMIK
YANG DIANUGERAHKAN ADALAH SELARAS DENGAN
STANDARD DAN KUALITI YANG TELAH DITETAPKAN OLEH
LEMBAGA JURUTERA MALAYSIA

PERAKUAN BAGI GRADUAT
TAHUN 2023 HINGGA 2028

DATO' SERI Ir. HAJI MOHAMAD ZULKEFLY BIN SULAIMAN
Yang Dipertua

Ir. Dr. MEGAT ZUHAIRY BIN MEGAT TAJUDDIN
Pendaftar

(Penandatangan Penuh *Dublin Accord*
mulai 27 Jun 2018)

Penganugerahan Perakuan Akreditasi ini tertakluk kepada peraturan-peraturan dan syarat-syarat yang dinyatakan di sebelah.

Tarikh Perakuan Dikeluarkan: 15.12.2022
No. Sijil: 0015
Ref. No: BEM/ETAD/02-8/DA/03-00-33 (003)

Center External Advisors

External Examiner

Ir. Prof. Dr. Wong Hin Yong

Associate Director, Engineering Accreditation Department, Board of Engineers Malaysia

Vice President, Academic and Innovative Learning Multimedia University, Cyberjaya

Industrial Advisor

Ir. Ts. Hj. Kamaruzzaman Bin Kasimin

Ketua Jurutera Elektrik Negeri, Cawangan Kejuruteraan Elektrik Johor, Jabatan Kerja Raya Malaysia (JKR)

Ir. Ts. Mohd Noramin Bin Ab Aziz

Kejuruteraan Ezet Niaga Sdn. Bhd

Center Staff Directory

Administration

Dean

Dr. Muhammad Faizal bin Ismail

PhD. (Electrical Engineering)(UTM), M. Eng. (Electrical Engineering)(UTM), B. Eng. (Hons) (Electrical Engineering - Telecommunication.) (UTM)

Deputy Dean (Academic)

Ts. Dr. Norhayati binti Ngadiman

PhD. (Environment and Development) (UKM), M Ed. (Technic and Vocational Ed.) (UTHM), BSc, (Mineral Resources) (USM)

Deputy Dean (Student Affairs and Alumni)

Dr Muhammad Azri bin Othman

PhD (Manufacturing Engineering)(UTeM), M.Eng (Manufacturing System Engineering) (UPM), B. Eng. (Hons)(Manufacturing-Automation & Robotic) (UTeM),

Deputy Dean (Development , Research and Publication)

Ts. Dr. Hazlini binti Dzinun

PhD (Gas Engineering)(UTM), M. Eng. (Civil Engineering – Environment)(UTM), B. Eng. (Hons)(Chemical Engineering.) (UTM)

Senior Assistant Registrar

Norsaleha binti Ali

M. Business Administration (UiTM), B. Business Administration (UiTM)

Administration Staff

Office Secretary

Nor Suraya binti Abdul Samad

Office Secretary

Siti Nurfaridah binti Fakri

Senior Assistant Administrative Officer

Latifah binti Mohd Nasir

Assistant Administrative Officer

Zainizan bin Md Esa

Senior Administrative Assistant

Razali bin Ahmad

Senior Administrative Assistant

Dorazi bin Md Noh

Administrative Assistant

Muhammad Rashid Amran bin Zainudin

Administrative Assistant

Muhammad Firdaus bin Yaacob

Administrative Assistant

Siti Nur Hasanah binti Hasan

Operational Assistant

Mohammad Ismael bin Mizad

Department of Electrical Engineering

Head of Department

Norhafiza bt Samion

Msc. (Railway Engineering) (UTHM), B. Eng. (Hons) (Electrical Engineering) (UTHM), Diploma (Electronics Engineering) (UTM)

Academic Staff

Dr. Muhammad Faizal bin Ismail

PhD. (Electrical Engineering)(UTM), M. Eng. (Electrical Engineering)(UTM), B. Eng. (Hons) (Electrical Engineering - Telecommunication.) (UTM)

Dr. Mohd Nurul Al-Hafiz bin Sha'abani

PhD (Electrical Engineering), (UTHM), MSc. Mechatronic Eng. (UTeM), Bac. of Mechatronic Eng. (UTeM)

Dr. Zainab binti Zainal

PhD. (Industrial Automation & Control System) (USM), MSc. (Electronics System Design) (Manchester Metropolitan University), B.Sc. (Electric & Electronics Eng.) (University of Manchester), Diploma Electronics Eng. UTM

Ts. Muhammad Shukri bin Ahmad

M.Eng. (Electrical) (KUiTTHO), B.Eng. (Hons) (Electrical)(KUiTTHO).

Ts. Ahmad Alabqari bin Ma'Radzi

MSc. (Micro Eng. & Nanoelectronic) (UKM), B. (Microelectronic)(UKM)

Ts. Tengku Nadzlin bin Tengku Ibrahim

Master (Electrical, Electronics & Information Engineering) (Nagaoka University of Technology) B. (Electrical, Electronics & Information Engineering) (Nagaoka University of Technology)

Ziana binti Che Ros

M. Eng (Electrical)(UTHM), B. Eng. (Hons)(Electrical Engineering.) (UTM), Diploma (Electrical Engineering) (UiTM)

Nabiah binti Zinal

M. Eng (Electrical)(KUiTTHO), B. Eng. (Hons)(Electrical Engineering.) (UTM)

Ts. Azli bin Yusop

B.Eng. (Hons) (Electrical Power) (UTM), Diploma (Electrical Eng. Power) (UTM)

Ts. Mohd Hamim bin Hj Sanusi@Ikhsan

MSc. (Information Technology, Management) (UTM), B. Eng. (Hons) (Electrical Eng.) (UTHM), Certificate (Electrical Eng.) (Polimas)

Ts. Mohd Sabani bin Mohd

B. Eng. (Hons)(Electrical Engineering)(UKM)

Ts. Azmi bin Sidek

M. Eng (Electrical)(UTHM), B.Eng. (Hons) (Electronic/Computer) (UPM)

Ts. Mohamad bin Md Som

MSc (Information Technology, Management) (UTM), B.Eng. (Computer)(UTM)

Eddy Irwan Shah bin Shadon

M. Eng (Electrical)(UTHM), B. Eng. (Hons) (Electrical Telecommunication) (UTM)

Nor Faezah binti Adan

M. Eng (Electrical)(UTHM), B. Eng. (Hons) (Mechatronic) (University of Leeds)

Nadira binti Johari Halim Shah

MSc (Electrical Power System Engineering), (University of Manchester), B. Eng. (Hons) (Electrical Power Engineering.) (UTHM), Diploma (Electrical Engineering with Education) (UTHM)

Ts. Mohd Muzaffar bin Zahar

M.Eng (Electrical)(UTM), B.Eng. (Hons)(Electrical)(UTM)

Mohd Faizal bin Mohamed Nor

Msc. (Telecommunications and Information Engineering) (UiTM), B.Eng. (Hons) (Electrical) (UTHM)

Ts. Nur Azliza binti Ahmad

M.Eng (Electrical & Electronic)(UTP), B.Eng. (Hons)(Electrical)(UTM)

Program Information
Diploma Of Electrical Engineering

Programme Aims

To produce graduates who are competent to fulfil the nation's needs of skilled and expert workers in the field of Electrical Engineering, whether in the public, private or self employed sector. The programme also prepares students to further their studies to the degree level at any local or international university.

Programme Structure and Assessment

This program consists of 90 credits to be completed within three (3) semesters. Assessment of students' performance is based on formative and summative evaluation conducted throughout each semester. The third semester in Year 3 is occupied for industrial training.

Duration and Award Duration

Duration : 2 Years and 9 Months
Awards : Diploma of Electrical Engineering

Professional Accreditation

This program is recognized by the Public Service Department of Malaysia and accredited by the Malaysian Qualification Agencies (MQA) and Engineering Accreditation Council (EAC)

Contact Us

Website directory UTHM: https://uthm.edu.my/
Website directory CeDS: https://ceds.uthm.edu.my/
Regarding Diploma of Electrical Engineering
Mohd Faizal Mohamed Nor
☎ +606 974 2016 ✉ mohdfaizal@uthm.edu.my

Programme Educational Objectives (PEO)

These are the PEOs for Diploma in Electrical Engineering:

PEO 1	Competent in Electrical Engineering field to fulfil the needs of organization and industry
PEO 2	Demonstrate a holistic practice of generic skill in professional environment.
PEO 3	Realize the importance of lifelong learning and contribute through ethical and social work to the society continuously.

Programme Learning Outcomes (PLO)

These are the PLOs for Diploma in Electrical Engineering:

PLO	Domains	PLO Statement
1	Knowledge and Understanding	Apply knowledge of mathematics, science and engineering to solve well-defined problems in electrical engineering
2	Problem Analysis	Identify and analyse well-defined electrical engineering problems using codified methods of analysis
3	Design / Development of solutions	Design solutions for well-defined electrical engineering technical problems and assist with the design of systems, components or processes to meet specified needs .
4	Investigation	Conduct investigation of well-defined electrical engineering problems to produce creative, innovative and effective solutions.
5	Modern Tool Usage	Apply appropriate techniques, resources, hardware and related software to solve well defined electrical engineering problems.
6	The Engineer and Soceity	Demonstrate knowledge in a professional, ethical and humane, respective to the electrical engineering technician practice and solution
7	Environment and Sustainability	Realise the impact of electrical engineering technician work to the society and environment, also practice it for sustainable development
8	Ethics	Understand and commit to professional ethics and responsibilities and norms of technician practice
9	Individual and Team Work	Function effectively as an individual, and as a member in diverse technical teams

PLO	Domains	PLO Statement
10	Communications	Communicate effectively on well-defined engineering activities with the engineering community and the society.
11	Project Management and Finance	Demonstrate knowledge and understanding of engineering management principles and enterpreneurial skills to manage projects in multidisciplinary environments
12	Life Long Learning	Recognise the need for, and have the ability to engage in independent updating in the context of specialized technical knowledge

Curriculum Structure

Table 1: Summary of curriculum for Diploma in Electrical Engineering

Year	Semester	Course Code	Courses	Credit	Total
1	Special	UQU 11103	Integrity and Anti-Corruption	3	7
		UHB 10*02	Foreign Language	2	
		DAE 10102	Occupational Safety and Health	2	
	I	UQ* 1***1	Co-curriculum I	2	18
		UQI 10402/ UQI 11502	Islamic Studies/ Moral Studies	2	
		UHB 13003	Introduction to English Communication	2	
		DAE 13003	Algebra	2	
		DAE 13103	Physics for Electrical Engineering	3	
		DAE 10403	Computer and Multimedia Technology	3	
		DAE 11003	Electrical Technology	1	
	II	UQx 1***1	Co-curriculum II	1	19
		DAE 12003	Engineering Mathematic	3	
		DAE 22102	Supervision Management	2	
		DAE 21403	Electrical Measurement & Instrumentation	3	
		DAE 11103	Circuit Theory	3	
		DAE 20102	Computer Programming	2	
		DAE 21203	Digital Electronic	3	
		DAE 10202	Electrical Wiring	2	
2	I	DAN 20103	Business and Entrepreneurship	3	17
		DAE 21303	Electronic	3	
		DAE 32103	Control System	3	
		DAE 32203	Microcontroller	3	
		DAE 32303	Electrical Machines and Drives	3	
		DAE 31001	Electrical Engineering Project I	1	
		DAE 21501	Computer Aided Design Laboratory	1	
		UQI 11402	Philosophy and Current Issues	2	

	II	UHB 23003	English for Career Development	3	19
		DAE 23602	Statistic	2	
		DAE 32403	Electrical Power System	3	
		DAE 32603	Communication Engineering	3	
		DAE 31203	Industrial Automation	3	
		DAE 31103	Electrical Engineering Project II	3	
Year	**Semester**	**Course Code**	**Courses**	**Credit**	**Total**
3	I	DAE 23910	Industrial Training (20 weeks)	10	10
				TOTAL CREDIT HOURS	**90**

Synopsis of University Courses

UQU 11103 Integrity and Anti-corruption

Synopsis

This course covers the basic concepts of corruption, including the values of integrity, anti-corruption, forms of corrupt behavior, abuse of power in daily activities and organizations, and methods of preventing corruption. Corruption-related cases are also discussed. The teaching and learning methods are implemented in the form of 'experiential learning' through individual and group activities. By the end of this course, students will be able to understand the practices of integrity, concepts of corruption, anti-corruption, and abuse of power, as well as the prevention of corruption in society and organizations.

References

1. Mohamad Tarmize Abdul Manaf (2020). Nota Pencegahan rasuah. Bahagian Pendidikan Masyarakat, Suruhanjaya Pencegahan Rasuah Malaysia. Putrajaya.
2. Mohamad Tarmize Abdul Manaf et al. (2020). Kursus Integriti dan Rasuah IPT. Bahagian Pendidikan Masyarakat, Suruhanjaya Pencegahan Rasuah Malaysia. Putrajaya.
3. Mohd Firdaus Ramlan (2021). Tumbuk Rusuk: Pengkisahan Dari Tirai Besi. Akademi Kajian Rantau Nusantara Akar. Batu Caves, Selangor.
4. Pusat Governans, Integriti dan Antirasuah Nasional (2019). Pelan Antirasuah Nasional 2019-2023. Jabatan Perdana Menteri, Putrajaya.
5. Syed Hussein Alatas (1999). Corruption and the Destiny of Asia. Simon and Schuster Asia.

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. Mohd Fauzi Mohd Amin (2011), Pemerkasaan Fardhu Kifayah berteraskan al-Quran dan al-Sunnah, Negeri Sembilan: USIM. (BP130.8. P45 2011)
5. Azzam, Abdul Aziz Muhammad (2010), Fiqh Muamalat: Sistem Transaksi dalam Fiqh Islam, Jakarta: Amzah. (BP158.C59. A99 2010)

UQI 11502 Moral Studies

Synopsis
This course explains about the introduction to moral concepts, moral aspects and their importance in daily life. Western moral theory as well as the pure values of the great religions of the world. Morality in various fields of employment, ethics in science and technology and finally current moral issues.

References

1. Eow Boon Hin. 2008. Moral Education. 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 Kuala Lumpur. JPM.

UQI 11502 Moral Studies

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.

UHB 13003 Introduction to English Communication Synopsis

Synopsis
This course aims to enhance the students' level of proficiency in the four language skills (listening, speaking, reading & writing) and to equip them with adequate communicative abilities at the tertiary level. Through guided or independent learning, students will be able to identify relevant information in texts on topics of interest and to write on familiar topics.

References

1. Argentar, D. M., Gillies, K. A. N., Rubenstein, M. M., & Wise, B. R. (2020). Reading and writing strategies for the secondary English classroom in a PLC at work: A guide to closing literacy achievement gaps and improving student ELA standards skill development. Solution Tree.
2. Bottomley, J., Maude, K., Pryjmachuk, S., & Waugh, D. (2019). Communication skills for your education degree. Critical Publishing.
3. Brownlie, F. (2019). Grand conversations, thoughtful responses: A unique approach to literature circles. Portage & Main Press.
4. Raymond Murphy (2019). English Grammar in Use Books and Interactive eBooks 5th edition: A self- study Reference and Practice Book for Intermediate Learners of English (5th). Cambridge University Press Edisi : 5 / No. Semakan : 2
5. Vorholt, J. (2018). New ways in teaching speaking, second edition. TESOL Press.

UHB 23003 English for Career Development

Synopsis

This course employs a task-based learning approach and focuses on developing students' delivery of speech in oral interactions relevant to their career development. Particular emphasis will be given to promote the mastery of self-directed learning, teamwork, research, reasoning and creativity. This course also enables students to acquire the skills necessary in preparing their professional advancement.

References

1. Md. Zamin, A. A., et al. Workplace Communications for Graduating Students: A Quickguide, ISBN 978-967-19771, Printed by Ultimate Print Sdn Bhd.
2. Shivananda,S., Doddawad, V. G. The Usefulness Of Hybrid Platform Meetings For Research Ethics Committees Review Meetings. Volume 127, 2022, ISSN 1368-8375.
3. Standaert, W., Muylle, S., Basu, A. Business Meetings in A Postpandemic World: When and How to Meet Virtually. Volume 65, Issue 3, 2022, Pages 267-275, ISSN 0007-6813,
4. Standaert, W., Muylle, S., Basu, A. How Shall We Meet? Understanding The Importance of Meeting Mode Capabilities for Different Meeting Objectives. Volume 58, Issue 1, 2021, 103393, ISSN 0378-7206
5. Termini, C. M., et al. Using Virtual Interviewing to Create A More Accessible Hybrid Academic Job Market. Volume 184, Issue 26, 2021, Pages 6217- 6221, ISSN 0092-8674.

UHB 1**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

UQ* 1**01 Co-Curriculum I

Synopsis

The course offers various form of activities for student of bachelor's degree and Diploma. Eight fields of activities offer are Public Speaking, Entrepreneurship, Sports, Community Services, Volunteership, Leadership, Culture and Innovation

UQ* 1**01 Co-Curriculum II

Synopsis

The course offers various form of activities for student of bachelor's degree and Diploma. Eight fields of activities offer are Public Speaking, Entrepreneurship, Sports, Community Services, Volunteership, Leadership, Culture and Innovation.

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 assessment, marketing plans, operational plans, financial planning and business management plans.

References

1. Norliza Ghazali & Raudah Mohd Adnan: Perniagaan dan Keusahawanan (2016) Penerbit UTHM
2. Sarimah Hanim Aman Shah & Cecilia Soon Teik Lan (2016). Entrepreneurship. (4th ed). Oxford Fajar
3. Mohd Nor Hakimin Bin Yusoff & Fakhrul Anwar Zainol. (2020). Rancangan Perniagaan Untuk Keusahawanan. Penerbit UMK
4. Kamal M.Y., Lukman Z.M. & Mazdan Ali Amaran. (2019). Keusahawanan Konsep Dan Asas Pengurusan. UNIMAS Publisher.

5. Abdul Aziz Ab Latif, Izaidin Abdul Majid, Mohd Abdullah Jusoh, Mohd Isnain Ali, Nur Asyikah Azahari, Mohamad Naim Idris (2018). Asas Keusahawanan: Perusahaan Mikro, Kecil Dan Sederhana. UMK Publisher.

Synopsis of Center Core Course

DAE 10102 Occupational Safety and Health

Synopsis

Introduce 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. (KPG1390.M34 2001 rw N2)
2. Tony Boyle. (2019) Health and Safety: Risk Management. 5 th Ed. London: Taylor and Francis Group.Call number: T55. B69 2019
3. Mark A. Friend and James P. Kohn. (2018). Fundamentals of occupational safety and health. 7th ed. Lanham: Bernan Press. Call number: T55. F74 2018.
4. Stig Ole Johnsen, & Thomas Porathe. (2021). Sensemaking in Safety Critical and Complex Situations: Human Factors and Design. CRC Press.
5. Malaysia, Legal Research Board. (2019). Occupational Safety and Health Act 1994 (Act 514) and regulations and orders. International Law Book Services. Call number: KPG1390 .M34 2019 rw

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. Gustafson, R.D. and Hughes, J. (2017) College algebra. Boston, MA: Cengage Learning. ISBN: 9781305652231
2. Larson, R. (2016) College algebra. Boston, MA: Cengage Learning. ISBN: 978137282291
3. Miller, M. (2014) Beginning algebra. New York: McGraw-Hill. ISBN : 9780073384481
4. Nafisah@Kamariah Md. Kamaruddin el. al. (2010). DAS 10103 Algebra. Centre for Science Studies, UTHM Publisher.
5. Raji et al. (2002) Matematik asas. Skudai, Johor, Malaysia: Penerbit Universiti Teknologi Malaysia. ISBN: 98302567

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 are units 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.Kramer, L. (2007). College Physics. 8th ed. San Francisco, CA: Pearson. QC23.2. K72 2007

5.Thomas L.Floyd (2009). “Principles of Electric Circuits Conventional Current Version” 7th Edition.Prentice Hall (TK454.F56 2007)

DAE 12003 Engineering Mathematics Synopsis

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. Mendelson, Elliott. 2022. Schaum's Outline of Calculus. 7th ed. New York: McGraw Hill. https://www-accessengineeringlibrary-com.ezproxy.uthm.edu.my
2. Abd. Wahid Md. Raji. (2018). Differential Equations for Engineering Students. Johor Bahru. UTM Publication. TA347.A32 2018.
3. Roland E. L. (2014). Calculus. Boston, MA: Brooks Cole, Cengage Learning. [QA303.2. L377 2014]

4. Arif, Mohamed. (2013). Calculus. Oxford, U.K: Alpha Science Int'l. [QA303.2 A74 2013] 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 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. Potter, M. C., Nelson, E. W., Best, C. L., & McLean, W. G. (2021). Statics. McGraw-Hill
2. Meriam, J. L., Kraige, L. G., & Bolton, J. N. (2020). Statics, John Wiley & Sons, Inc.
3. Nafisah@Kamariah Md. Kamaruddin el. al. (2015). Statistics (DAS20202). Pusat Pengajian Diploma, UTHM Publisher.
4. Wadpole - Mayer. Probability And Statistics for Engineers and Scientists. Prentice Hall. 2007. TA340. W35 2007
5. Douglas C. Montgomery & George C. Runger (2011). Applied Statistics and Probability for Engineers. John Wiley. QA276.12 .M664 2011

DAE 22102 Supervision Management Synopsis

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 the staff recruitment process, staff 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 environment issues.

References

1. Supervision Today! Stephen P. Robbins, David A. DeCenzo, Robert M. Wolter. 7th Edition, 2013
2. Lester, A. (2017). Project Management, Planning and Control: Managing Engineering, Construction and Manufacturing Projects to PMI, APM and BSI Standards Seventh Edition. Butterworth-Heinemann, Elsevier.
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 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; Construction 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)

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 an 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 10202 Electrical Wiring

Synopsis

The course provides students with basic skills in electrical engineering laboratories such as assembling, installing, inspecting, and testing 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
2. .M52 2004 a
3. Linsley, Trevor (2008). Basic Electrical Installation Work, 5th ed. Oxford: Newnes. Shelf No: TK452. L564 2008.
4. Linsley, Trevor (2008). Advanced Electrical Installation Work, 5th ed. Oxford: Newnes. Shelf No: TK452. L564 2008. Shelf No: TK452. L56 2008
5. Smith, Robert L.; Herman, Stephen L. (2008). Electrical Wiring Industrial, 13th ed. Clifton Park, NY: Delmar Cengage Learning. Shelf No: TK3283. S64 2008
6. 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 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 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

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 TK454. D67 2011
5. Boylestad, Robert L. (2010) Introductory Circuit Analysis 12th ed. Shelf No: TK454. B69 2010.

DAE 20102 Computer Programming

Synopsis

This course introduces the programming development environment and enhances their skills in problem solving and program coding related to the 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 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 2010Mark A. Atwater, 2019. “Materials and Manufacturing: An Introduction to How They Work and Why It Matters,”, 1st Edition, McGraw Hill

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

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. Simon Monk (2014). Programming Arduino Next Steps: Going Further with Sketches,Mc Graw Hill Education

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 32303 Electric Machines and Drives

Synopsis

This course introduces the knowledge of electrical machines and drives. The topics include DC machine; structure, electromagnetic force, 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 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
3. ed. Indianapolis, IN: Wiley. [TJ211. S24 2011]
4. Gupta, A.K., Arora, S.K., (2016). Industrial Automation and Robotics: An Introduction, Mercury Learning & Information.
5. Manesis, S. Nikolakopoulos, G., (2018). Introduction to Industrial Automation, CRC Press, Taylor & Francis Group.
6. Miller, Rex. & Miller, M.R., (2017). Robots and Robotics: Principles, Systems, and Industrial Applications, McGraw Hill Professional.

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 32603 Communication Engineering

Synopsis

This course is about the exposure to the basic concepts in electronic communication systems 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: MacGraw 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 31001 Electrical Engineering Project I

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 types of electrical engineering technologies, methodologies of research and project development through a series of lectures. Hopefully after this introduction students are able to select the best project suited to industrial trends and standard. Students are required to form a project team group consisting of a number of students as per department requirement. Students are guided through 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 the end of semester.

References

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

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 development 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 industrial training in the electrical engineering field for 20 weeks. They will be trained by the agency/organization such as planning, management, design, field investigation, evaluation, and assessment in related industries.

References

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

Career and Further Education Prospect

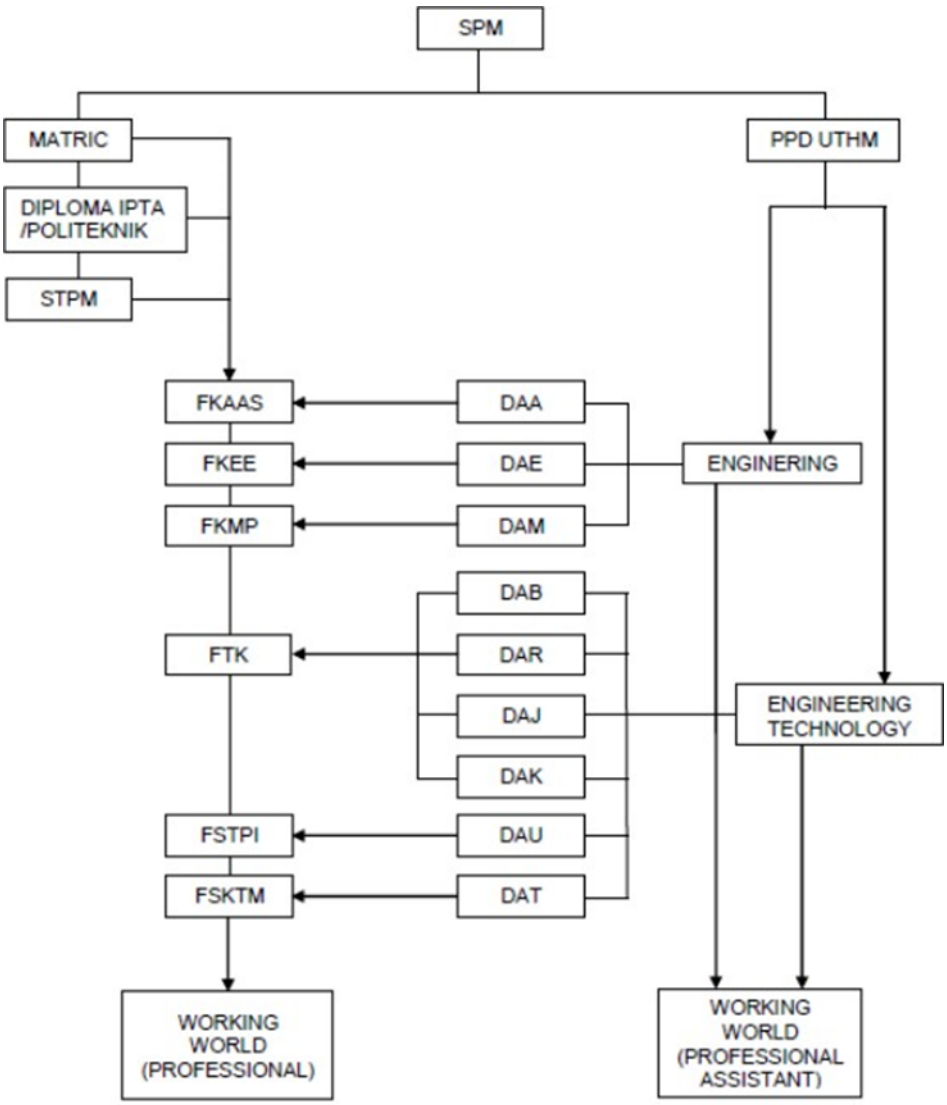
Diploma Electrical Engineering is a study focused on the application of electrical engineering in the design, testing and development of electrical equipment for transmission systems, control of machines, appliances, and high-power systems.Graduates are prepared for their future role in the economy by 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.

Upon successful completion of the diploma course, the graduates have the opportunity to either further their study in the degree-level program or apply for a job in electrical and electronic engineering as a technician or an assistant engineer.

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

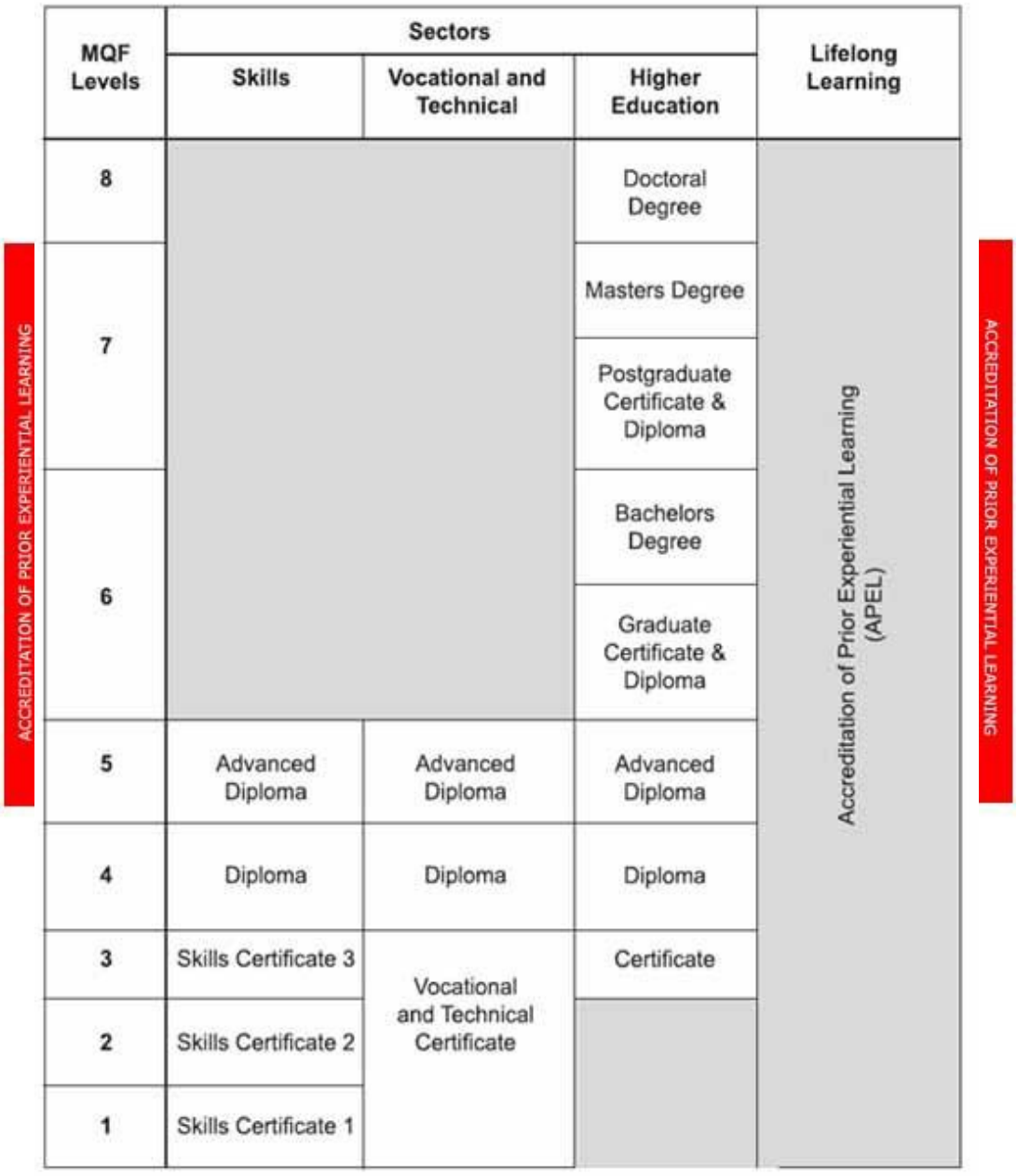
- Authority/ Utilities Example: Energy Commission, DOSH, Niosh, TNB, IPPs
- Engineering in manufacturing, consultancy, research & development and academic.
- Procurement and Business Development Example: Sales and Project
- Construction Examples: Project Management
- Testing and Commissioning

The figures below show examples of jobs and career pathways in the Centre of Diploma Studies (CeDS) UTHM and according to the Malaysian Qualification Framework (MQA).



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

MALAYSIAN QUALIFICATIONS FRAMEWORK: QUALIFICATIONS AND LEVELS



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