UTHM
Universiti Tun Hussein Onn Malaysia

ACADEMIC PROFORMA
2018 / 2019
ppd.uthm.edu.my

DIPLOMA IN ELECTRICAL ENGINEERING

Pusat Pengajian Diploma
Universiti Tun Hussein Onn Malaysia
86400, Parit Raja, Batu Pahat, Johor

Technically
Above The Rest

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

Contents

Foreword from the Vice Chancellor	4
Foreword from the Deputy Vice Chancellor (Academic and International)	5
Foreword from the Dean of the Centres for Diploma Studies	6
University Vision	7
University Mission	7
University Education Philosophy	7
University Logo	7
Chancellor	8
Pro Chancellor	8
University Board of Directors	9
University Senate Members	10
Centres for Diploma Studies	12
Faculty Vision	12
Faculty Mission	12
Faculty Visiting Professors	14
Faculty Industrial Advisors	14
Faculty Staff Directory	15
Programme Aims	18
Programme Educational Objectives (PEO)	18
ProgrammeLearningOutcomes (PLO)	19
Curriculum Structure	20
Synopsis of the University Courses	22
Synopsis of the Faculty Courses	24
Career & Further Education Prospect	39

Foreword from the Vice Chancellor

Assalamualaikum Warahmatullahi Wabarakatuh and Greetings

Congratulations and welcome to all new students. We appreciate your trust in us and thank you for choosing to be with UTHM in continuing your endeavour for success in your future careers and prosperous lives.

In line with the message given by the YBhg. Minister Ministry of Education Malaysia that wish to transform the process of teaching and learning more flexible, organic, dynamic and effective, several initiatives and innovations in delivery methods have been and will be implemented at UTHM by combining conventional methods with on-line / virtual meetings by introducing Full Online Classroom (FOC), Smart Class Room, Flip Learning, Massive Open Online Courses (MOOC) and more. In fact, the approach through Science, Technology, Engineering and Mathematics (STEM) will be enhanced to uphold the science and technology in line with the development of the Industrial Revolution 4.0. Additionally, elements such as fun, happiness, affection and courtesy will be applied in all curriculum at UTHM to ensure learning and teaching processes can achieve the University's aspirations in producing emotional, mental and physical equilibrium students based on the paradigm of tauhid.

For your knowledge, the top University's leadership continues to seek, design and adapt effective and efficient approaches that can have a big impact towards making UTHM a renowned Higher Education Institution. The achievement of four stars in the "QS STAR RATING 2017" and UTHM was recognized as Top 300 in QS World University Ranking by Subject 2017 in Mechanical, Aeronautical and Manufacturing Engineering and Electrical and Electronic Engineering categories, proving that UTHM continues to create excellence. These achievements convince us that they were the results of our effort in continuously strengthening and aligning the University mission and vision.

Lastly, I believe that you are the ones who will continue the University tradition of excellence. Also, when you graduate later you will be members of the community who are not only able to apply knowledge that has been acquired but also able to contribute efforts, deeds and expertise for the glory of Religion, Nation and Country.

"WITH WISDOM WE EXPLORE"

Your Sincrely,

PROFESSOR Ts. DR. WAHID BIN RAZZALY
Vice-Chancellor
Universiti Tun Hussein Onn Malaysia

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

Assalammualaikum Warahmatullahi Wabarakatuh and Greetings

It gives me great pleasure to congratulate all the new students who have been successfully selected to continue their studies in Universiti Tun Hussein Onn Malaysia (UTHM) for this 2017/2018 session. Congratulations to the Centre for Academic Development and Training for publishing this proforma that will function as a guide for students to plan their studies from the first semester until the end.

For your information, higher education in Malaysia has evolved from teacher/lecturer-centred learning to student-centred learning. Several initiatives have been conducted by the Ministry and the University to develop holistic graduates who are balanced in their knowledge and morale. In order to achieve UTHM mission and vision, a number of initiatives have been implemented such as introducing the iCGPA system, which is an integrated mechanism that combines assessment, achievement report and student's development that takes into account improvements in manners, knowledge and performance. Additional measures have also been taken to upgrade the teaching and learning quality by incorporating elements of Industry 4.0 and 2U2i in the curriculum content. This is to ensure the academic programmes offered in UTHM remain relevant to the requirements of the industry and current job market. In addition, knowledge and experience sharing sessions by local and international industrial leaders with students and the local community are carried out through the CEO@Faculty programme.

Other than that, online learning known as Massive Open Online Course (MOOC) has been introduced. The Full Online Classroom (FOC), which is implemented every semester, serves as a new initiative to give students the opportunity to explore knowledge without having to come to lecture rooms. Students also have the opportunity to leave the University for a certain period of time to participate in the Gap Year programme, which gives them the opportunity for self-reflection and exploration through volunteerism, entrepreneurship and sports programmes.

I hope the variety of initiatives that have been and will be implemented by UTHM will provide you with valuable experiences in your endeavour for knowledge and develop you to be holistic and balanced students. To ensure UTHM aspirations are achieved, it is hoped that this proforma will help you plan your studies and achieve the best results and attain excellence. Lastly, I wish you all the best and pray for your success in your studies here, with the hope that you will be able to contribute to the development of Religion, Nation and Country.

"WITH WISDOM WE EXPLORE"

Your Sincrely,

PROFESSOR DR. ISMAIL BIN ABDUL RAHMAN
Deputy of Vice Chancellor (Academic and International)
Universiti Tun Hussein Onn Malaysia

Foreword from the Dean of Centre for Diploma Studies

Assalamualaikum Warahmatullahi Wabarakatuh and Warm Greetings

Congratulations and welcome to all of you that have made the right choice of taking the first step in joining UTHM. 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 science and technology.

As a centre, we're responsible for running and operating the diploma programmes for UTHM and our centre has a clear vision and mission in developing and strengthening all the diploma programmes offered. Currently, we have nine (9) diploma programmes being offered and the number of programmes will be increasing in the near future in phase to the increase needs of the nation manpower. I believe you have chosen a suitable programme that suits your qualifications and dreams. Furthermore, with the study duration of 2 years and 9 months the student will be successfully completed their studies in a shorter time and can be offered a direct entry to the bachelor's degree programmes in UTHM with respective to the terms and condition imposed.

In terms of infrastructure, the teaching and learning facilities provided for UTHM have been recognised to fulfil the standard required by the accreditation bodies. In addition, the rapid development of the campus UTHM now will ensure comfort to students with various facilities including a library, residential colleges, cafeterias, sports activities, networking, wireless internet and other amenities.

I hope that as a candidate of the diploma programme in UTHM, you will use this proforma as a guide to select a suitable course which is in line with your future needs. For the new student who will be pursuing the diploma programme in UTHM, I strongly advised to using this document to plan and thus completing your diploma studies with excellence.

Wishing You Success.

Your Sincrely,

ASSOCIATE PROFESSOR 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 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 of Johor
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
Chief Secretary to the Government of Malaysia

University Board of Directors

Chairman

Members

YBhg. Professor Ts. Dr. Wahid bin Razzaly
Vice-Chancellor
Universiti Tun Hussein Onn Malaysia

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

YBhg. Datuk Dr. Pang Chau Leong
Alumni Representative, Universiti Tun Hussein Onn Malaysia

YBhg. Dato' Zainal Abidin bin Mat Nor
Deputy Secretary of Public Asset Management Division, Ministry of Finance

YBhg. Datuk Mat Noor bin Nawi
Chairman, Exim Bank Berhad

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

YBhg. Professor Dr. Mustafa bin Mat Deris
Professor Faculty of Computer Science and Information Technology
Universiti Tun Hussein Onn Malaysia

YBhg. Professor Dr. Arham bin Abdullah
Director, Industrial Relation Division, Department of Higher Education
Ministry of Higher Education Malaysia

Alternative Member

Mdm. Mazula binti Sabudin
Director of Student Enrollment Management Division
Department of Higher Education
Ministry of Higher Education Malaysia

Secretary

Mr. Abdul Halim bin Abdul Rahman
Registrar
Universiti Tun Hussein Onn Malaysia

Senate Members

Chairman

Professor Ts. Dr. Wahid bin Razzaly
Vice Chancellor

Members

Professor Dr. Ismail bin Abdul Rahman
Deputy Vice Chancellor (Academic and International)

Professor Ts. Dr. Ruzairi bin Abdul Rahim
Deputy Vice Chancellor (Research and Innovation)

Associate Professor Dr. Asri bin Selamat
Deputy Vice Chancellor (Student Affairs and Alumni)

Professor Dato' Dr. Abdul Razak Hj. Omar
Provost of UTHM Pagoh Branch Campus

Associate Professor Dr. Wan Fauziah binti Wan Yusoff
Assistant Vice-Chancellor (Financial Sustainability)

Associate Professor Dr. Afandi bin Ahmad
Assistant Vice-Chancellor (Strategic Planning and Corporate Relations)

Professor Dr. Ahmad Tarmizi bin Abd Karim
Dean Centre for Graduate Studies

Associate Professor Dr. Abd Halid bin Abdullah
Dean Faculty of Civil and Environmental Engineering

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

Associate Professor Dr. Shahruddin bin Mahzan @ Mohd Zin
Dean Faculty of Mechanical and Manufacturing Engineering

Associate Professor Dr. Mohd Lizam Bin Mohd Diah
Dean Faculty of Technology Management and Business

Professor Ts. Dr. W Mohd Rashid Bin W Ahmad
Dean Faculty of Technical and Vocational Education

Associate Professor Dr. Nazri bin Mohd Nawi
Dean Faculty of Computer Science and Information Technology

Associate Professor Dr. Mohd Kamarulzaki bin Mustafa
Dean Faculty of Applied Science and Technology

Associate Professor Dr. Ishak bin Baba
Dean Faculty of Engineering Technology

Associate Professor Dr. Mohamad Zaky bin Noh
Dean Centre for Diploma Studies

Professor Dr. Azme bin Khamis
Director Centre for Academic Development and Training

Professor Dr. Rosman bin Md. Yusoff
Dean Centre for liberal and co-currricular studies

Professor Dr. Noraini Binti Kaprawi
Director International Office

Ir. Shamrul-Mar bin Shamsuddin
Director Development and Mainteance Office

Professor Ir. Dr. Amir Hashim bin Mohd Kassim
Faculty of Civil and Environmental Engineering

Professor Dr. Sulaiman bin Hj Hassan
Faculty of Mechanical and Manufacturing Engineering

Professor Dr. Maizam binti Alias
Faculty of Technical and Vocational Education

Professor Dr. Jailani bin Md Yunos
Faculty of Technical and Vocational Education

Professor Dr. Hj. Mustafa bin Mat Deris
Faculty of Computer Science and Information Technology

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

Professor Datin Dr. Maryati binti Mohamed
Faculty of Applied Science and Technology

Professor Dr. Rosman bin Md Yusoff
Faculty of Applied Science and Technology

Mr. Abdul Halim bin Abdul Rahman
Registrar/Secretary

Mdm. Azizah binti Nasri
Bursary

Mr. Hj. Bharun Narosid bin Mat Zin
Chief Librarian

Centre for Diploma Studies

Centre Vision

Excellent in providing multidisciplinary education in science and technology

Centre Mission

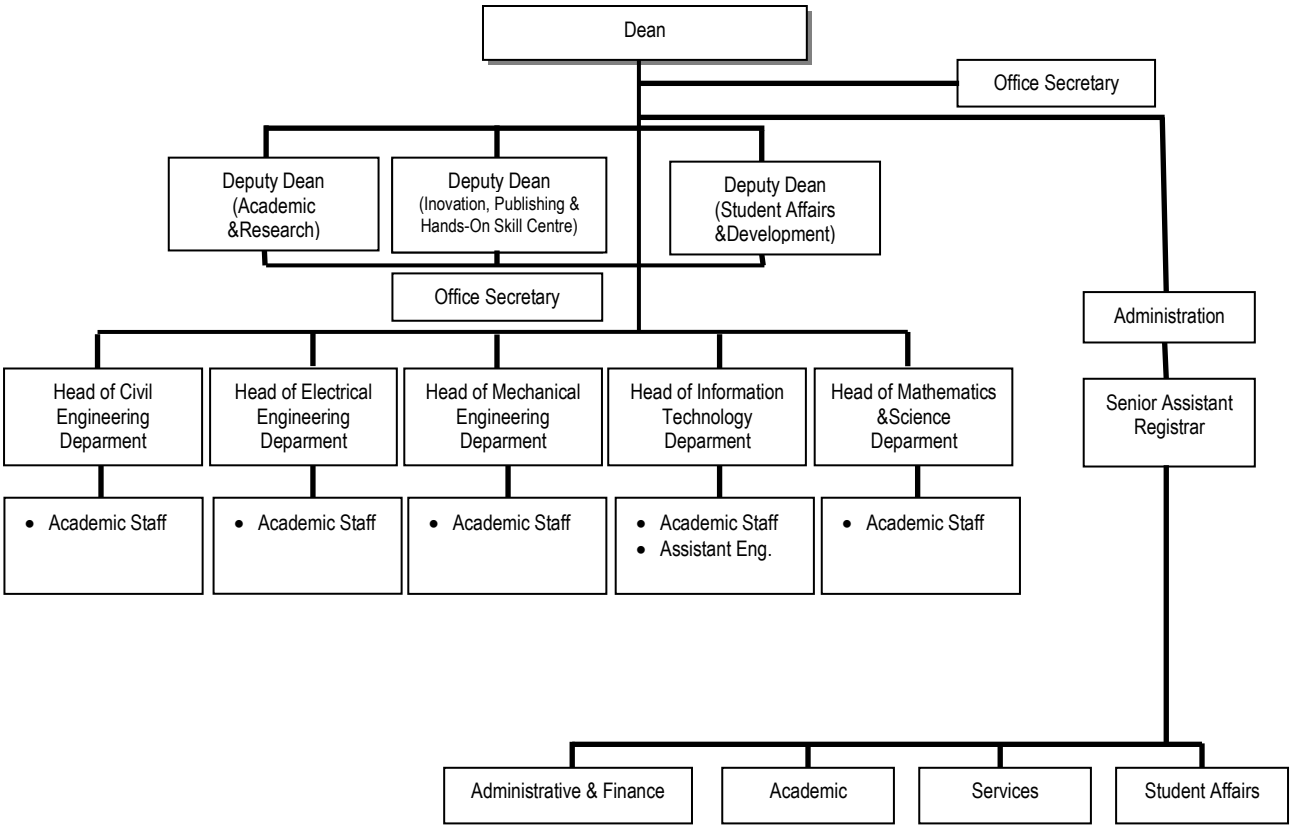
Producing graduates who contribute to national development through a holistic academic program

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 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 achieve equilibrium in the academic excellence, co-curricullum and the individual development of its graduate such that to achieve the quality needed to fulfill the global occupational market. Until now the Centre for Diploma Studies, have offered nine (9) 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 Electrical Engineering

External Examiner

Professor Dr. Mohamad Kamal bin A Rahim
Ph.D (Elect Eng.) (Univ of Birmingham, UK), MSc (Communication Eng.)(NSW, Aust.,),
B. Eng. (Electrical and Electronic Engineering) (University of Strathclyde,UK),
Dip. (Electrical and Electronic Engineering)(UiTM),

Industrial Advisor

Mr. Engr. Muhammad Rusydan bin Amir Hamzah
Senior Manager
MK Management , Unit 3-45, D'Plazza Mall
Jalan Mahsuri
11900 Bayan Lepas, Pulau Pinang
M.Eng.(Biomedical), Universiti Malaya (UM),B. Eng. (Electrical), Universiti Tun Hussein Onn Malaysia (UTHM), Diploma Engineering (Electronics), UTHM

En. Rizan bin Hj.Ali
Senior M&E Inspector
62A,Jalan Impian Putra,
Taman Impian Putra,
43000 Kajang ,Selangor.
M.B.A. Dublin Metroplolitan University
B.B.A M.B.A. Dublin Metroplolitan University
B.Engineering (Electrical), Universiti Teknologi Malaysia (UTM)
Diploma in Electronics Engineering (Power), UTM

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)
Pn. Mariam bt. Abdul Hamid
MSc. Management (Information Technology) (UTM), B.Information Technology (UiTM) Diploma (Electronic) (UiTM), SPM (SM.Tasik Utara,Johor Bahru)

Deputy Dean (Development , Research and Publication)
Hj. Jahaya bin Kesot
MSc. (Civil Engineering) (UTHM), BSc. (Civil Engineering) (Univ. of Miami, USA)

Office Secretary
Rusnani binti Saji
Dip. (Secretarial Science) (Politeknik Sultan Ahmad Shah, Kuantan)

Office Secretary
Nor Irmawanis binti Zainal Abidin
Dip. (Secretarial Science) (UiTM)

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)

Administrative Assistant (Clerical & Operation) Student Affairs and Alumni
Jaiganesh a/l Jaganathan
BSc (Management) (OUM), SPM (SMK Dato Bentara Luar)

Administrative Assistant (Clerical & Operation) Administrative and Finance
Ismade bin Niam
STPM (SM Tun Sardon Rengit)

Administrative Assistant (Clerical & Operation) Services Unit
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) Academic
Abu Bakar Siddeq bin Abd Jabar
SPM (SMK Tinggi Batu Pahat)

General Office Assistant
Dayang Fatimah binti Pohhaini
STPM (SM Munsyi Sulaiman), SPM (SMK Datin Onn Jaffar)

Department of Electrical Engineering

Academic Staff

Head of Department
Zaurin bin Ali
B. Eng. (Hons)(Electrical Engineering)(UTM), Diploma (Electrical Engineering)(UTM) Cert. (Education) (Maktab Perguruan Kinta, Ipoh Perak), Cert.(Electrical Installation & Maintenance- Single Phase and Three Phase) (JPK),Cert. (Basic Electrician)(Domestic and Industry)(MLVK), Cert. (Intermediate Electrician (Domestic & Industry) (MLVK), Cert.(Internal Evaluator) (MLVK)

Hjh. Fauziah Binti Abdullah
B. Sc. (Industrial Technology)(University of Wisconsin, USA), Dip. (Electrical Engineering, Communication)(UTM), Cert. (Electronic Engineering, Communication)(PUO)

Hj. Mohd. Azlan bin Abdul Shukor
M. Sc. (Electrical Power Engineering)(University of Strathclyde, Scotland, UK),
B. Sc. (Electrical and Electronic Engineering)(University College Cardiff, Wales, UK), Post Graduate Certificate of Education(TTTC)

Hj. Zulkarnain bin Md. Amin
B. Sc. (Electrical Engineering)(University of Bridgeport, Connecticut, USA), A. Sc. (Electrical Engineering)(DCC, SUNY, New York, USA), Post Graduate Certificate of Education(TTTC), Cert. (Microprocessor System Design)(JICA, Sendai, Japan), Cert. (Computer Networking)(SIEMEN, Manheim, Germany), Cert. (Supervisory Management)(SEAMEO VOCTECH, Brunei)

Hj. Mohd Hamim bin Hj Sanusi@Ikhsan
Master (Information Technolgy, Management)(UTM), B. Eng. (Hons)(Electrical Eng.)(UTHM), Certificate (Electrical Eng.)(Polimas)

Hj. Mohd Kamal bin Jaafar
M. Eng (Electrical)(UTHM), B. Eng. (Hons)(Electrical Eng., Instrumentation) (UTM), Diploma (Electrical Eng., Communication)(UTM), Certificate (Radio)(ALAM)

Norhafiza bt Samion
B. Eng. (Hons)(Electrical Engineering.) (UTHM), Diploma (Electrical Engineering)(UTM)

Hjh. Ziana bt Che Ros
M. Eng (Electrical)(UTHM), B. Eng. (Hons)(Electrical Engineering.) (UTM), Diploma (Electrical Engineering)(UiTM)
Eddy Irwan Shah bin Shadon
M. Eng (Electrical)(UTHM),B.Eng.(Hons) (Electrical Telecommunication)(UTM),

Muhammad Faizal bin Ismail
M. Eng. (Electrical)(UTM), B. Eng. (Hons)(Electrical Engineering.) (UTM)

Nor Faezah binti Adan
M. Eng (Electrical)(UTHM), B. Eng. (Hons)(Mechatronic) (University of Leeds)

Mohd Sabani bin Hj.Mohd
B. Eng. (Hons)(Electrical Engineering)(UKM)

Nadira binti Johari Halim Shah
B. Eng. (Hons)(Electrical Power Engineering.) (UTHM), Diploma (Electrical Engineering with Education)(UTHM)

Nabiah binti Zainal
M.Eng. (Electrical) (KUiTTHO), B.Eng. (Hons) (Electrical) (UTM),
Dip. (Communication)(UTM)

Eddy Irwan Shah bin Shadon
M. Eng (Electrical)(UTHM),B.Eng.(Hons) (Electrical Telecommunication)(UTM),

Mohd Nurul Al-Hafiz bin Sha'abani
Msc. (Electrical Engineering)(Universiti Teknikal Malaysia Melaka (UTeM), Malaysia)
Bac. of Mechatronic Eng. (Hons) (Universiti Teknikal Malaysia Melaka (UTeM), Malaysia)

Azli bin Yusop
B.Eng.(Hons) (Electrical Power)(UTM), Diploma (Electrical Eng. Power) (UTM), Cert. (Chargeman (AO). (STM), Cert.(Electrical Installation & Maintenance- Single Phase and Three Phase) (JPK)

Mohd Muzaffar bin Zahar
M.Eng (Electrical) (UTM), B.Eng. (Hons)(Electrical)(UTM)

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

Mohamad bin Md Som
Master (Information Technolgy, Management)(UTM),B.Eng.(Computer)(UTM).

Ahmad Shukri bin
M.Eng. (Electrical) (KUiTTHO), B.Eng.(Hons) (Electrical)((KUiTTHO).

Ahmad Alabqari bin Ma'Radzi
MSc. (Micro Eng. & Nanoelectronic) (UKM),B.(Microelectronic)(UKM).

Tengku Nadzlin bin Tengku
Master (Electrical,Electronics & Information Engineering) (Nagaoka University of Technology, Japan) B. (Electrical,Electronics & Information Engineering) (Nagaoka University of Technology, Japan)

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 as professional technician practices.

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 basic knowledge of mathematics, science and engineering in Electrical Engineering.

PLO 2 Apply knowledge, skills, techniques and latest engineering hardware comprehensively in Electrical Engineering field.

PLO 3 Interact with professionals and community effectively in written and spoken.

PLO 4 Produce effective solutions in Electrical Engineering problems.

PLO 5 Able to engage as an individual or group to carry out technical tasks within an organization.

PLO 6 Identify the career development needs through lifelong learning.

PLO 7 Applying entrepreneurial practices for career development.

PLO 8 Practicing knowledge in a professional, ethical and humane in the field of Electrical Engineering.

PLO 9 Demonstrate effective leadership responsibilities within the organization.

PLO10 Design safe and efficient solutions, system, components and processes that meet desired needs within realistic constrants.

PLO11 Produce effective solutions in Electrical Engineering problems

PLO12 Realize the impact of Electrical Engineering technician work to the society and environment, also practice it for sustainable development.

PLO13 Demonstrate knowledge in a professional, ethical and humane, respective to the Electrical Engineering technician practice and solution.

Curriculum

Table 1: Summary of curriculum for Diploma in Electrical Engineering

Year	Semester	Course Code	Courses	Credit	Total
	Special	UWB 1**02 UQU10403 UQI10402/ UQI10202	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 21203	Co-curriculum I English for Academic Survival Algebra Physic for Electrical Engineering Electrical Technology Computer and Multimedia Technology Digital Electronics	1 2 3 3 3 3 3	18
	II	UQ* 1XXX1 UHB 20302 DAE 13303 DAE 10102 DAE 20103 DAE 11103 DAE 21303 DAE 10201	Co-Curriculum II Academic Communication Engineering Mathematics I Occupational Safety & Health Computer Programming Circuit Theory Electronic Electrical Engineering Laboratory I	1 2 3 2 3 3 3 1	18
	III	DAE 21403 DAE22102 DAE 21502	Electrical Measurement & Instrumentation Supervision Management Computer Aided Design	3 2 2	7
2	I	UHB 30502 DAE 23403 DAE 32003 DAE 32203 DAE 32303 DAE 21901 DAE 32103	English for Workplace Engineering Mathematics II Industrial Electronics Mikrocontroller Electrical Machines and Drives Electrical Engineering Laboratory II Control System	2 3 3 3 3 1 3	18
	II	UQI 10502 DAE 23602 DAN 20103 DAE 3XXX3 DAE 32603 DAE 32704 DAE 32801	Devine Faith and Science Statistics Business and Entrepeneurship Elective* Communication Engineering Electrical Engineering Project Electrical Engineering Laboratory III	2 2 3 3 3 4 1	18
	III				
3	I	DAE 23908	Industrial Training (16 weeks)	8	8
			Total Credit		**94**
		 DAE 32403 DAE 32503	**Elective Subjects (Select 1 out of 2)** Electrical Power System Robotics and Automation System	 3 3	

Synopsis of University Courses

Year	Sem	Course Code	Courses	Credit	Total
	Special	UWB 10*02	Foreign Language	2	7
		UQU 10403	Nationhood and Current Development of Malaysia/ *Malaysian Studies and Culture	3	
		UQI 10402/ UQI 10202	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	2
	II	UQI 10502	Devine Faith and Science	2	5
		DAN 20103	Business and Entrepreneurship	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]

UQI10202 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 2009ª].
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 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

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 13303 Engineering Mathematics I

Synopsis

Function: Relation and function, graph, algebra function, piecewise function, trigonometry, exponent, logarithm, hyperbolic and its inverse. Limits: Limit of functions. One-sided limits. Limits at infinity. Continuity. Differentiation: Techniques of differentiation: Sum and differences rule, product rule, quotient rule. Chain rule. Differentiation of exponent functions, logarithm functions, implicit functions, parametric equations, inverse trigonometric functions and higher derivatives. Application of differentiation: Rates of change. Maximum and minimum problem, graph sketching. L' Hôpital's Rule. Laplace Transforms:Definition. Properties: linearity, first shift, and multiply with t^n. Inverse LaplaceTransforms: Definition and properties. Initial and boundary value problems.

References

1. NurhanaBinti Mohamad. (2018). *Engineering Mathematics I (DAS 10303).* Centre for Diploma Studies, UTHM Publisher.
2. Abd Wahid Md Raji. (2013). *The first course of calculus for science and engineering students*. UTM Publication. [QA303 .F57 2013]
3. Arif, Mohamed. (2013). *Calculus.* Oxford UK. [QA303.2 .A74 2013.
4. Zill, Dennis G. (2013). *Differential equations with boundary-value problems.*Bostan, MA: Brooks/Cole, Cengage Learning. [QA371. Z54 2013]
5. Steward, James. (2012). *Calculus.*BCengage Learning, Belmont, CA. [QA303.2 .S73 2012]

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 20103 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 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 10201 Electrical Engineering Laboratory I

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 21403 Electrical Measurement and Instrumentation

Prerequisite: DAE 11003 Electrical Technology

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

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 21502 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.
7. 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.

DAE 23403 Engineering Mathematics II

Synopsis

This course explains in detail topics related to calculus. At the start of the course students understand the topic of integration as the inverse of differentiation. The techniques used are the method of substitution, by parts, partial fractions, rule schedule, numerical methods (Trapezoidal and Simpson rules) and improper integration of integration at infinity.Next, the topic of integration of applications which is area, volumes by cylindrical shells and arc length. In the next topic, students will introduced to the first order ordinary differential equation and generate their knowledge to differentiate between separable, linear, homogeneous and exact equation. Next, students will apply the knowledge to solve any application in real life that related to ODEs. Later on, they will extend their differential equation knowledge to higher order

which is second order ODEs using method undetermined coefficient and variation of parameter.

References:

1. Abd. Wahid Md. Raji and Mohd Nor Mohamad. (2008). Differential Equations. Malaysia. UTM Publication.
2. Anton, H., Bivens, I. and Davis, S. (2002). Calculus. 7th Ed. New York. John Wiley. QA303 .A57 2002.
3. James, Glyn. Modern Engineering Mathematics third edition. (2001). Prentice Hall, Essex. TA330 .J352 2001
4. Thomas, G. B., Finney, R.L. and Weir, M.D. (2001). Thomas' Calculus and analytic geometry 9th Edition, Addison Wesley Publishing, Boston. QA303 .T46 1996.

DAE 32003 Industrial Electronics

Synopsis

This course aims at developing an in-depth understanding of the concepts, theory and applications of electronic devices and circuits used in the manufacturing and process industries. Topics include introduction to the types of electromechanical control devices, ladder diagrams, DC motor controllers, stepper motors and programmable logic controller.

References

1. Rehg, James A.;Sartori, Glenn J. (2006). Industrial Electronics. Upper Saddle River, NJ: Pearson. Shelf No: TK7881 .R43 2006
2. Rehg, James A.;Sartori, Glenn J. (2009). Programmable Logic Controllers, 2nd ed. Upper Saddle River, NJ: Pearson. Shelf No: TJ223.P76 .R43 2009
3. Bartelt, Terry (2006). Industrial Control Electronics: Devices, Systems and Applications, 3rd ed. Clifton Park, NY: Thomson. Shelf No: TK7881 .B37 2006
4. Wilamowski, Bogdan M.; Irwin, J. David (2010). Fundamentals of Industrial Electronics. Boca Raton: Taylor & Francis. Shelf No: TK7881 .F86 2010
5. Gurevich, Vladimir (2008). Electronic Devices on Discrete Components for Industrial and Power Engineering. Boca Raton: CRC. Shelf No: TK7881.15 .G87 2008

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

Prerequisite: DAE 11003 Electrical Technology

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 21901 Electrical Engineering Laboratory II

Synopsis

This course provides hands-on experience for the student to understand the material presented in the following subjects::
DAE 32103 Control System
DAE 32303 Electrical Machines and Drives.
.

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
6. Wildi, Theodore (2006). Electrical Machines, Drives, and Power Systems, 6th ed. Upper Saddle River, NJ: Pearson. Shelf No: TK2182 .W54 2006
7. Rajput, R. K. (2006). Electrical Machines, 4th ed. New Delhi: Laxmi Publications. Shelf No: TK2182 .E43 2006
8. Salam, M. Abdus (2005). Fundamentals of Electrical Machines. Oxford: Alpha Science. Shelf No: TK2000 .S34 2005
9. 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
10. 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

UQI 10502 Devine Faith and Science

Synopsis

This course focuses on the concept of two basic things which are holding religious beliefs and looking at different views in science. As a result of this, the existence of the relationships between them can be distinguished through discussions based on the holistic concept of knowledge.

References

1. Mohd. Arip Hj. Kasmo, (2005). Pasak; Pengukuhan Akidah Menerusi Penghayatan Sains Dalam al-Quran, cet.2, Negeri Sembilan: Penerbitan Awan Biru.
2. Sulaiman Nordin, et. al., (1995). Sains Menurut Perspektif Islam, Kuala Lumpur: Dewan Bahasa dan Pustaka.
3. Ghazali Darussalam, (2001). Tamadun Islam dan Tamadun Asia, Kuala Lumpur: Utusan Publication.

4. Haron Din,et. al., Jilid 3, (1994). Manusia dan Islam, Kuala Lumpur: Dewan Bahasa dan Pustaka.
5. Mir Aneesuddin, (2000). terj: Fatwa al-Quran Tentang Alam Semesta, cet.1, Jakarta: Serambi.

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

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 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

(Elective 1)

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 32503 Robotic and Automation System

(Elective 2)

Synopsis

This course aims to introduce automation and robotic systems in terms of concepts, theories and system applications. Topics include introduction of robotics, robotic technology, robotic classification, automation systems and applications.

References

1. Kandray, Daniel E. (2010). Programmable Automation Technologies: An Introduction to CNC, Robotics and PLCs. New York: Industrial Press. Shelf No: TS183 .K36 2010
2. Rehg, James A. (2003). Introduction to Robotics in CIM Systems, 5th ed. Upper Saddle River, NJ: Prentice Hall. Shelf No: TJ211 .R43 2003
3. Kok Kiong, Tan (2011). Drives and Control for Industrial Automation. New York: Springer. Shelf No: TS156.8 .K644 2011
4. Niku, Saeed (2011). Introduction to Robotics: Analysis, Control, Applications, 2nd ed. Indianapolis, IN: Wiley. Shelf No: TJ211 .S24 2011
5. Soloman, Sabrie (2010). Sensors and Control Systems in Manufacturing, 2nd ed. New York: McGraw Hill. Shelf No: TS158.6 .S64 2010
6. Keramas, James G. (1999) Robot Technology Fundamentals. Delmar Publishers. Shelf No. TJ211. K37 1999.

DAE 32704 Electrical Engineering Project

Synopsis

This course is intended to identify that students have achieved a satisfactory performance in various aspects of design. Students can demonstrate a good domination in various major subjects within electrical engineering field and also can manage and plan the project successfully.

References

1 .Related reference books
2. Thesis writing guideline, UTHM.
3. Guideline for Implementation of Diploma Engineering Project, UTHM

DAE 32801 Electrical Engineering Laboratory III

Synopsis

This course provides hands-on experience for the student to understand the material presented in the following subjects::
DAE 32603 Communication Engineering and
DAE 32403 Electrical Power System or
DAE 32503 Robotics and Automation System

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. Frenzel, Louis E. (2008). Principles of Electronic Communication Systems, 3rd ed. New York: McGraw-Hill. Shelf No:TK5101 .F744 2008
3. Chow, V. T. (1975). *Open-Channel Hydraulics*, Aukland: McGraw-Hill. [TC175.C56 1975]

4. Author (year). *Title*. [library reference number] – Rujukan must be latest five years if available.
5. Keramas, James G. (1999). *Robot Technology Fundamentals*. Delmar Publishers.[TJ211 .K37 1999]
6. Kandray, Daniel E. (2010). *Programmable Automation Technology: An Introduction to CNC, Robotics and PLCs.* New York: Industrial Press Inc.[[TS183 .K36 2010]
7. Niku, Saeed (2011). *Introduction to Robotics: Analysis, Control, Applications*, 2nd ed. Indianapolis, IN: Wiley. [TJ211 .S24

DAE 23908 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

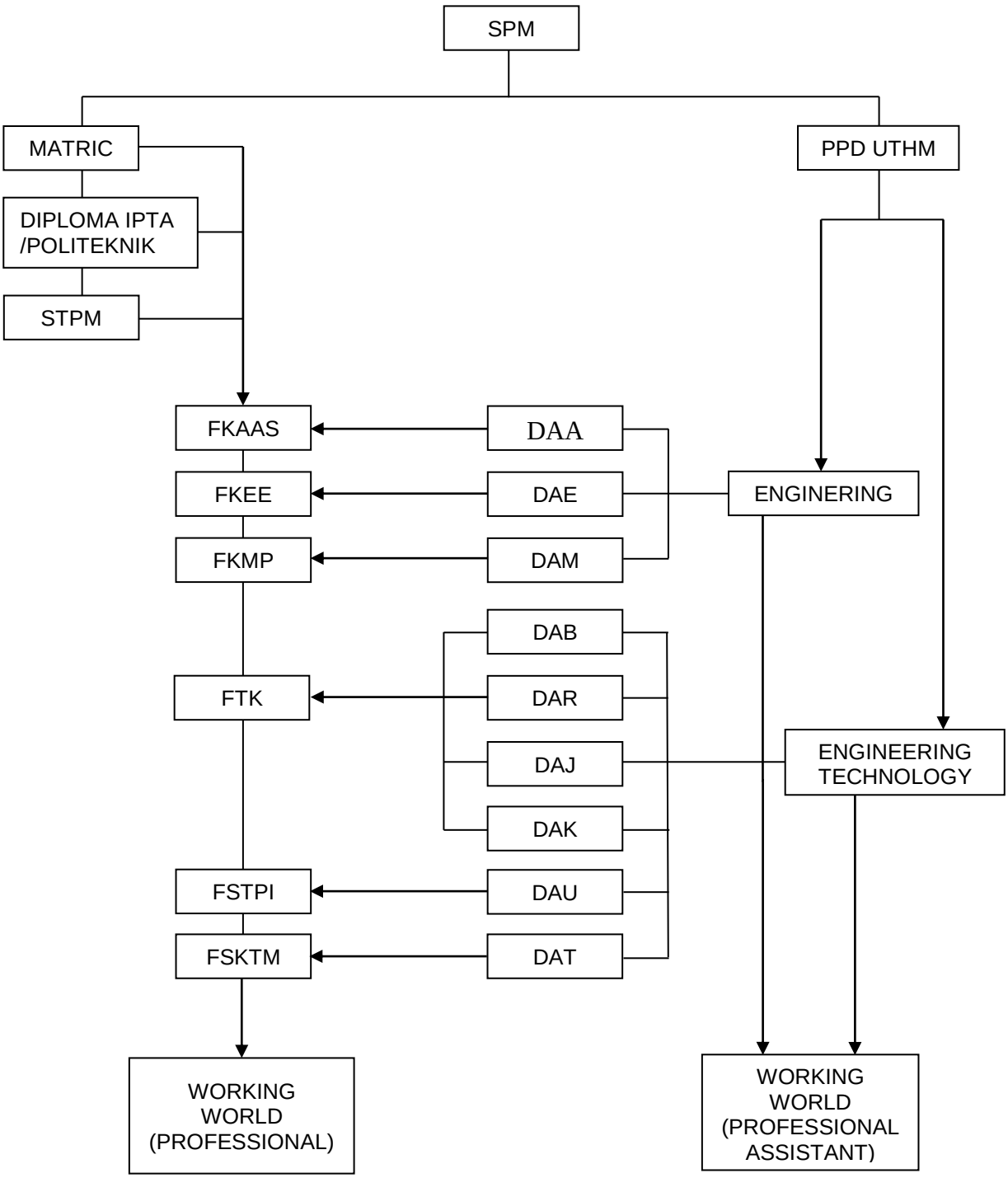
2. Engineering in manufacturing, consultancy, research & development and academic.

3. Procurement and Business Development
   Example: Sales and Project

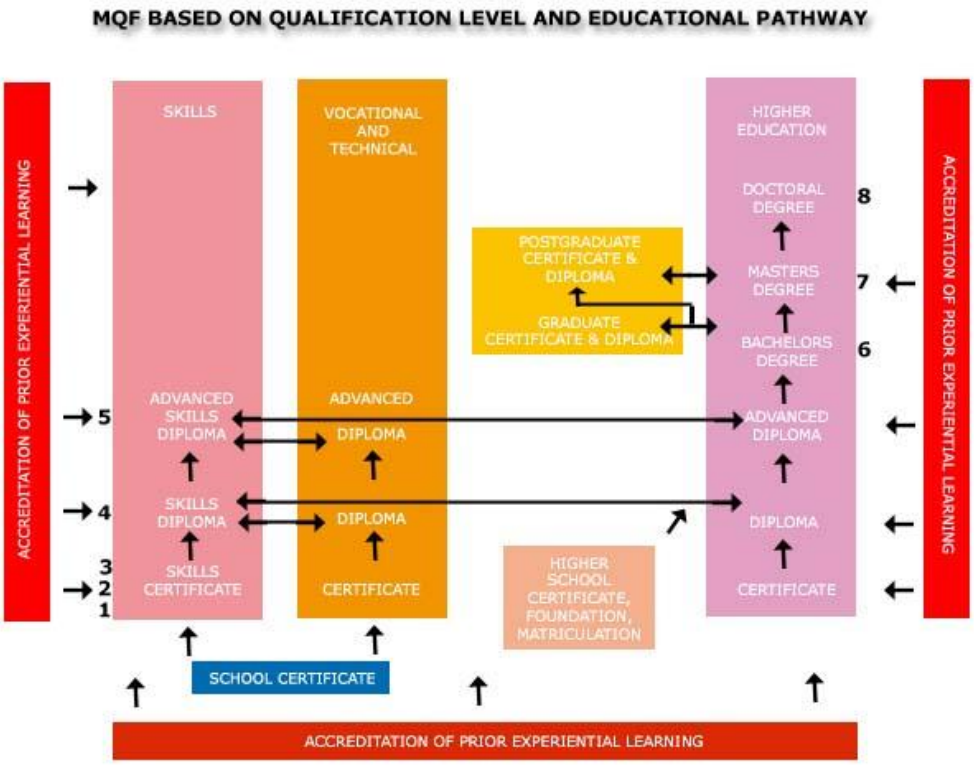
4. Construction
   Examples: Project Management

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

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

Qualifications and Levels of Education according to Malaysian Qualification Framework

Centre for Academic Development and Training
Universiti Tun Hussein Onn Malaysia
86400 Batu Pahat, Johor Darul Ta'zim
www.uthm.edu.my