UTHM
Universiti Tun Hussein Onn Malaysia

ACADEMIC PROFORMA

2020/2021

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CENTRE FOR DIPLOMA STUDIES
CEDS

DIPLOMA IN APPLIED SCIENCES

QS STARS™ RATING SYSTEM ★ ★ ★ ★

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

QS STARS™ RATING SYSTEM ★ ★ ★ ★ ★ Teaching
QS STARS™ RATING SYSTEM ★ ★ ★ ★ ★ Employability
QS STARS™ RATING SYSTEM ★ ★ ★ ★ ★ Facilities
QS STARS™ RATING SYSTEM ★ ★ ★ ★ ★ Social Responsibility
QS STARS™ RATING SYSTEM ★ ★ ★ ★ ★ Inclusiveness

UTHM Produces Professionals

PUSAT PENGAJIAN DIPLOMA
UTHM KAMPUS PAGOH, HAB PENDIDIKAN TINGGI PAGOH
KM1, Jalan Panchor, 84600, Panchor, Johor.

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Universiti Tun Hussein Onn Malaysia
September 2020

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Foreword from the Vice Chancellor

Assalammualaikum Warahmatullahi Wabarakatuh dan Selamat Sejahtera.

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

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

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

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

Wishing You Success.

“DENGAN HIKMAH KITA MENEROKA”

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

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

Assalammualaikum Warahmatullahi Wabarakatuh dan Selamat Sejahtera.

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

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

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

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

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

“DENGAN HIKMAH KITA MENEROKA”

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

Foreword from the Dean

Assalamualaikum Warahmatullahi Wabarakatuh and Warm Greetings

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

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

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

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

Wishing You Success.

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

Vision

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

Mission

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

University Education Philosophy

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

University Logo

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

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

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

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

Symbolism:

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

Chancellor

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

Pro Chancellor I

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

Pro Chancellor II

YBhg. Tan Sri Dr. Ali Hamsa

University Board of Directors

Chairman

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

Members

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

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

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

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

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

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

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

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

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

Secretary

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

Senate Members

Chairman

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

Members

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

En. Abdul Halim bin Abdul Rahman
Pendaftar / Setiausaha Senat

En. Norzaimi bin Hamisan
Bendahari

Pn. Zaharah binti Abd Samad
Ketua Pustakawan

Pn. Norliah binti Yaakub
Penasihat Undang-Undang

Centre for Diploma Studies

Centre Vision

Excellent in providing multidisciplinary education in science and technology

Centre Mission

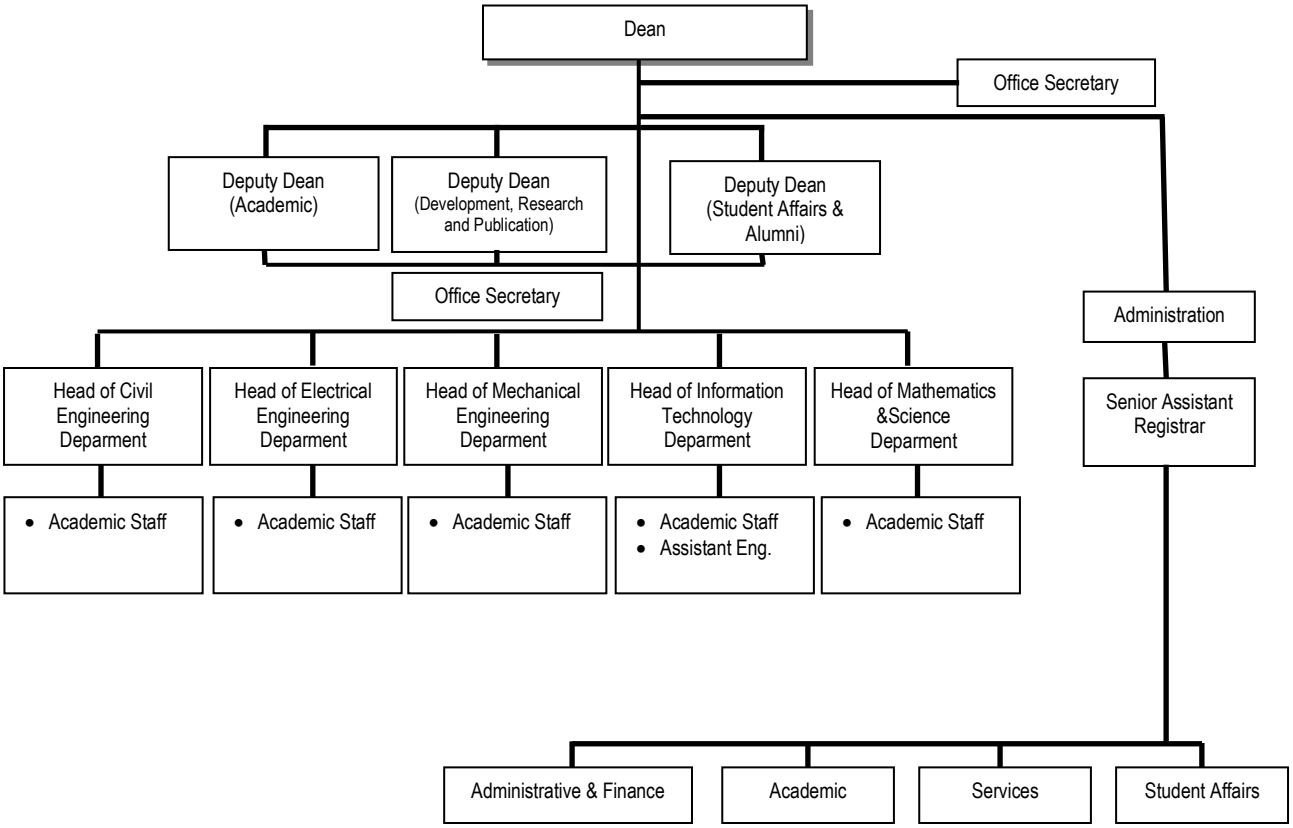
Producing graduates who contribute to national development through
a holistic academic program

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

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

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

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



Organisational chart of the Centre for Diploma Studies

Centre External Examiner and Industrial Advisor

Department of Sciences and Mathematics

External Examiner

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

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

Industrial Advisor

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

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

Faculty Staff Directory

Administration

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

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

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

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

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

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

Senior Assistant Registrar
Cik Norfaizah binti Sai
BSc. Human Resources (UPM), STPM (SM.Ungku Aziz, Sabak Bernam), SPM(SM.Convent Klang)

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

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

Senior Administrative Assistant (Clerical & Operation) Student Affairs and Alumni
Ismade bin Niam
STPM (SM Tun Sardon Rengit)

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

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

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

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

Department of Sciences and Mathematics

Academic Staff

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

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

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

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

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

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

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

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

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

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

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

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

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

Pn. Norazreen binti Sharip

MSc (Physics)(UTM), BSc (Health Physics)(UTM)

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

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

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

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

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

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

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

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

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

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

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

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

Programme Name

Diploma in Applied Sciences (DAU)

Programme Aims

Diploma in Applied Sciences is to produce semi – professional's human resource based on the following PEO.

Programme Educational Objectives (PEO)

These are the PEOs for Diploma in Applied Science:

The objective of the program is to produce semi-professionals human resource that:

PEO1: Apply theoretical and practical knowledge in solving pure and applied science problems.

PEO2: Practise knowledge effectively, professionally and ethically in issues of pure and applied science

PEO3: Interact with professionals and the community effectively to carry out leadership responsibilities in an organization.

PEO4: Develop career development and entrepreneurship in lifelong learning.

Programme Learning Outcomes (PLO)

These are the PLOs for Diploma in Applied Sciences:

PLO 1	Apply knowledge of applied sciences and mathematics in sciences and technology.
PLO 2	Identify problem and generate alternative solutions to mathematical problems, pure science and applied science.
PLO 3	Apply scientific knowledge, skills, essential tools and techniques, technology in the practice of applied science.
PLO 4	Collaborate as a member in diverse learning and working communities in sciences and technology team.
PLO 5	Interact with professionals and the community effectively both in written or oral forms.
PLO 6	Use a broad range of information, media and technology applications.
PLO 7	Demonstrate skill in numerical, graphical and visual data.
PLO 8	Developing a potential of leadership skill and professionalism in group effectively.
PLO 9	Recognize effectively in self-directed lifelong learning and professional pathways.
PLO 10	Demonstrate entrepreneurial competency skills for career development.
PLO 11	Practicing knowledge professionally, ethically and humane in the context of applied science and society.

Curriculum

Table 1: Summary of curriculum for Diploma in Applied Sciences.

Tahun	Semester	Kod Kursus	Kursus	Kredit	Jumlah
	Khas	UQI 10402 / UQI 11502	Pengantar Pengajian Islam / Pengantar Pengajian Moral	2	7
		UQU 10403	Pengantar Kenegaraan dan Pembangunan Malaysia	3	
		UWB 1**02	Bahasa Asing	2	
1	I	UHB 10302	English for Academic Survival	2	18
		UQ* 1***1	Co-Curriculum I	1	
		DAS 10103	Algebra	3	
		DAS 16403	Cell Biology	3	
		DAS 12303	Physical chemistry	3	
		DAU 10103	Physics Mechanics	3	
		DAS 20803	Calculus	3	
	II	UHB 20302	Academic Communication	2	18
		UQ* 1***1	Co-Curriculum I	1	
		DAS 12503	Organic Chemistry	3	
		DAS 26503	Microbiology	3	
		DAU 10303	Optic	3	
		DAS 10503	Statistics I	3	
		DAU 10203	Fundamentals of electric and electronic	3	
2	I	UHB 30502	English for Workplace	2	20
		DAS 22403	Analytical Chemistry	3	
		DAU 21303	Fundamentals of Food Science and Technology	3	
		DAU 16103	Computer Technology and Multimedia	3	
		DAS 20703	Statistics II	3	
		DAU 25102	Final Year Project I	2	
		DAU 24202	Introduction to Modern Physics	2	
		DAU 18102	Occupational Safety and Health	2	
	II	UQI 11402	Falsafah dan Isu Semasa	2	18
		DAN 20103	Perniagaan dan Keusahawanan	3	
		DAU 22303	Enviromental Chemistry	3	
		DAU 34403	Ordinary Differential Equation	3	
		DAU 23302	Analytical Instrumentation	2	
		DAU 22102	Waste Management	2	
		DAU 35203	Final Year Project II	3	
3	I	DAU 25309	Industrial training	9	9
Jumlah Kredit Keseluruhan					**90**

Synopsis of University Courses

Tahun	Semester	Kod Kursus	Kursus	Kredit	Jumlah
	Khas	UQI 10402 / UQI 11502	Pengantar Pengajian Islam / Pengantar Pengajian Moral	2	7
		UQU 10403	Pengantar Kenegaraan dan Pembangunan Malaysia	3	
		UWB 1**02	Bahasa Asing	2	
1	I	UHB 10302	English for Academic Survival	2	3
		UQ* 1***1	Co-Curriculum I	1	
	II	UHB 20302	Academic Communication	2	3
		UQ* 1***1	Co-Curriculum I	1	
2	I	UHB 30502	English For Workplace	2	2
	II	DAN 20103	Perniagaan dan Keusahawanan	3	5
		UQI 11402	Falsafah dan Isu Semasa	2	
3	I	-	-	-	-
				Jumlah Kredit	**20**

Synopsis of Courses

UQU 10403 Introduction to Nationhood and Development of Malaysia

Synopsis

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

References

1. Modul Pengantar Kenegaraan dan Pembangunan Malaysia, (2018). Parit Raja : Penerbit UTHM
2. Mardiana Nordin dan Hasnah Hussin. (2014). Pengajian Malaysia. Shah Alam :Oxford Fajar
3. Mohamed Suffian Hashim. (1994). Mengenal Perlembagaan Malaysia. Edisi Kedua. Kuala Lumpur: Dewan Bahasa dan Pustaka.
4. Nazaruddin Haji Mohd Jail, Ma'rof Redzuan, Asnarulkhadi Abu Samah dan Ismail Hj Mohd Rashid. (2004). Pengajian Malaysia: Kenegaraan dan Kewarganegaraan.
5. Nazri Muslim. (2015). Islam dan Melayu: Tiang Seri Hubungan Etnik di Malaysia. Bangi: Penerbit UKM.

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 11402 Philosophy and Current Issues

Synopsis

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

References

1. Al-Attas, S.M. Naquib. (1991). The Concept of Education in Islam. Kuala Lumpur: ISTAC.
2. Al-Farugi, I.R. (1994). Al-Tawhid: Its Implications for Thought and Life, (2nd Ed.). Herndon: IIIT.
3. Phillips, D.C. (Ed.) (2014). Encyclopaedia of Educational Theory and Philosophy, (1st Ed.). SAGE Publication.
4. Dzulkifli, A.R. & Rosnani, H. (2019) Pentafsiran Baharu Falsafah Pendidikan Kebangsaan dan Pelaksanaannya Pasca 2020. Kuala Lumpur: IIUM Press.
5. Hospers, J. (1997). An Introduction to Philosophical Analysis, (4th Ed.). London: Routledge.

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 personal and academic activities in the context of tertiary education.

References

1. Clark, R. C. (2004). Graphics learning: Proven guidelines for planning and evaluating visuals in training materials. San Fransisco, CA: Pfeiffer. LB1043.5 .C52 2004
2. Dunne, E. (1994). Talking and learning in groups. London: Routledge. LC6519 .D86 1990 N1
3. Galanes, G. J. (2013). Effective group discussion: Theory and practice (14th ed.). New York: McGraw-Hill. HM736 .G34 2013
4. Greasley, P. (2011). Doing essays and assignments: Essential tips for students. Thousand Oaks, CA: Sage Publication. LB1047.3 .G73 2011

5. Lim, P. L. (2014). Listening & notetaking skills 2 (4th ed.). Boston: National Geographic Learning. PE1128 .L55 2014

UHB 20302 Academic Communication

Prerequisite Course: UHB 10302 English for Academic Survival

Synopsis

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

References

1. Anderson, P.V. (2014). Technical communication : a reader-centered approach. Boston : Cengage Learning.PE1475 .A52 2014
2. Fairbairn, Gavin J. (2011). Reading, Writing and Reasoning; A Guidefor Studerzrs. Maidenhead: Open University Press, 2011. LB2395 .F34 2011
3. Jordan, R. R. (2003). Academic Writing Course; study skills in English (3rd ed.). Essex: Longman. PE1408 .J67 2003.
4. Langan, John. (201I). College Writing Skilts (8th ed.). New York: McGraw-Hill. PE1471 .L36 2011.
5. Lewis, Jill. (2002). Reading for Academic Success : Reading and Strategies. Boston: Houghton Mifflin. LB2395.3 .L48 2002.

UHB 30502 English for Workplace

Prerequisite: UHB 20302 Academic Communication

Synopsis

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

References

1. Allen, J. G. (2004). The complete Q and A job interview book (4th ed.). Hoboken, NJ: John Wiley. HF5549.5.16 . A44 2004.
2. Corfield, R. (2008). Preparing the perfect job application: Application forms and letters made easy. New Delhi: Kohan Page. HF5383 .C67 2008.
3. Haynes, M. E. (2009). Meeting skills for leaders: Make meetings more productive (4th ed.). Rochester, NY: Axzo Press. HD30.3 .H39 2009.
4. Wendleton, K. (2014). Mastering the job interview and winning the game (5th ed.). Boston: Cengage Learning. HF5549.5.I6 .W46 2014.
5. Wrathall, J. (2011). Event management: Theory and practice. North Ryde, N.S.W: McGraw-Hill. GT3405 .W72 201.

UWB 102 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* 101 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

UQ* 101 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.

DAN 20103 Business and Entrepreneurship

Synopsis

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

References

1. Norliza Ghazali & Raudah Mohd Adnan: *Perniagaan dan Keusahawanan,* Penerbit UTHM, 2016

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

DAS 10103 Algebra

Synopsis

This course covers topics that use properties in mathematics that are in real numbers such as esponents, logarithms and radicals. Students also solve polynomial problems such as quadratic equations, inequalities and absolute values. Partial fractions will also be introduced as well as numerical methods such as the method of division of equations and Sekan for nonlinear equations. Next, the course also describes the sequence and series of arithmetic and geometric series. The algebraic method used is binomial expansion. Next students will study the topic of trigonometry for the ratio of any angle and equation of trigonometry. In the topic of matrices, students use arithmetic operations and starting line operations. To solve the system of linear equations students use inverse matrices, Gauss-Jordan elimination, numerical method solutions and Gauss-Seidel methods. At the end of this course, students learn the lines and plane equations in vector topics as well as various methods in solving complex numbers such as arithmetic operations, polar shapes, Euler formulas and De Moivre theorems.

References

1. Nafisah@Kamariah Md. Kamaruddin el. al. (2015). 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

DAS16403 Cell Biology

Synopsis

The Cell Biology course will cover structure and function of the cell. We will study on chemistry of living things that involve in cell biology. We will discuss the chemistry behind living things, macromolecules of cells and type of cells. Topics such as cell organelle, membrane structure, composition and transport of membrane; cell energy and metabolisms; cell communication and cell continuity will be covered. Experiments will be carried out in this course that will give a better understanding about the biology of cells.

References

1. Marielle Hoefnagels, (2009). Biology: Concepts and Investigations, 2nd ed. New York. Mc Graw Hill. [QH 307.2. H63. 2012
2. Raven P. H., Johnson G. B., Mason K. A., Losos J. B., Singer S. R. (2011). Biology, 9th ed. New York. Mc Graw Hill. [QH 308.2. B58.2011]

3. Alberts, Bruce, (2014). Essential of Cell Biology 4th edition. New York, NY : Garland Science. [QH581.2 .E87 2013].
4. Ross, F.C, Bailey, D and Enger, E.D (2009). Concepts in Biology. 13th. Ed. Berkshire, McGraw-Hill.
5. Becker, Ralph, (2015). Cell Biology. New York, NY : Callisto Reference. [UTHM Parit Raja: QH581.2.C44 2015].[Pagoh Edu Hub: QH581.2.C44 2015.
6. Alberts, Bruce, (2014). Essential cell biology, 4th ed. New York, NY : Garland Science. [QH581.2 .E87 2013].

DAS 12303 Physical Chemistry

Synopsis

Physical chemistry covers the mechanisms and processes of natural phenomena of physical reaction to environment or daily activities. This course is an overview of the fundamental of states of matter, atomic mass and structures, the gas properties, thermodynamics, Hess's Law, Henry's Law and Raoult's Law, the chemical equilibrium, Le Chatelier Principle, electrochemistry, the Arrhenius and Bronsted definition of acids and bases, chemical kinetics, and chemical bonding and intermolecular forces in compounds.. Finally, there is discussion of natural processes for light phenomena concept, measurement, and designing instrument.

References

1. Tuteja, A. 2007. Fundamentals of Physical Chemistry. Discovery Publishing House, New Delhi. [QD453.2 .T87. 2007]
2. Levine, I.N. 2009. Physical Chemistry, 6th. Ed. McGraw Hill, Boston. [QD453.3.L48. 2009]
3. Norbani Abdullah, et al. 1998. Kimia Fizikal Asas Matrikulasi. Penerbit Fajar Bakti, Shah Alam, Malaysia. [QD453.2.N67. 1998]
4. Jones, A. 2005. Chemistry An Introduction for medical and Health Sciences. John Wiley & Sons Ltd: England. [QP514.2 .J66. 2005]
5. Kuhn, H. et al. 2009. Principles of Physical Chemistry, John Wiley; , Hoboken, NJ. [QD453.3 .K83. 2009]
6. Davis, W. M. 2012. Physical Chemistry : a modern introduction 2nd ed. CRC Press. [QD453.3 .D38. 2012]

DAU 10103 Physics Mechanic

Synopsis

This course introduces students to mechanic physics knowledge needed related to linear motion and angular motion. The application involves the concept of SI units, vector, position, distance, displacement, speed, velocity, mass, weight, momentum and acceleration into force, work, energy, power and SHM. The courses also discuss Newton's Law and dynamics motion of body on horizontal and incline planed. The laboratory experiments are carried out on selected topics.

References

1. "Halider, 2019, Core concepts in physics : classical mechanics, ISBN 9781984620279"
2. Young, Hugh D., author, 2016 Sears and Zemansky's university physics : with modern physics / Hugh D. Young, Roger A. Freedman. Fourteenth. Global edition. ISBN 9781292100319

3. Griffith, W. Thomas, 2019. T.he physics of everyday phenomena : a conceptual introduction to physics / W. Thomas Griffith (Pacific University), Juliet W. Brosing (Pacific University). Ninth edition. ISBN 9781260085211
4. Bauer, Wolfgang, 2014, University physics,New York, NY : McGraw-Hill ISBN 9780077409623

DAS 20803 Calculus

Synopsis

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

References

1. Nafisah@Kamariah Md. Kamaruddin, Zulkarnain Md Amin, Norziha Che Him and Norzehan Mohd Shab. (2019). Calculus (DAS20803). Pusat Pengajian Diploma.
2. "Abd Wahid Md Raji,Hamisan Rahmat, Ismail Kamis, Mohd Nor Mohamad, Ong Chee Tiong, (2013). The First Course of Calculus for Science and Engineering Students. UTM Press. ISBN: 9789835208621.
3. Anton, Howard, Bivens, Irl and Davis, Stephen. (2012). Calculus, 10th Edition. Hoboken, NJ : John Wiley & Sons, ISBN: 978-0-470-64772.
4. Larson, Ron. (2011) Brief Calculus: An Applied Approach. Boston, MA, Cengage Learning. ISBN: 9781133109488. Call number: QA303.2 .L37 2011.
5. Anton, Howard, Bivens, Irl and Davis, Stephen. (2013). Calculus : early transcendentals. Hoboken, NJ : John Wiley & Sons. ISBN: 9781118092408. Call number: QA303.2 .A57 2013.
6. "Anton, Howard, Bivens, Irl and Davis, Stephen. (2012). Calculus, 10th Edition. Hoboken, NJ : John Wiley & Sons, ISBN: 978-0-470-64772.
7. "Anton, Howard, Bivens, Irl and Davis, Stephen. (2013). Calculus : early transcendentals. Hoboken, NJ : John Wiley & Sons. ISBN:9781118092408. Call number: QA303.2 .A57 2013.
8. "Larson, Ron. (2011) Brief Calculus: An Applied Approach. Boston, MA, Cengage Learning. ISBN: 9781133109488. Call number: QA303.2 .L37 2011.

DAS 12503 Organic Chemistry

Synopsis

This course deals primarily with the basic principles to understand the structure and reactivity of organic molecules. Emphasis is on substitution and elimination reactions and chemistry of the carbonyl group. The course covers the introduction to organic molecules, stereochemistry, organic reactions, alkanes, alkenes, alkynes and radical reactions.

References

1. Brown, W. H. and Poon, T. (2011). Introduction to Organic Chemistry 4th Ed. New York: John Wiley. QD253.2 .B76 2011
2. Carey, F. A. and Giuliano, R.M. 2017. Organic Chemistry 10th. Ed. McGraw Hill. QD251.3 .C37 2017
3. McMurray, John. (2015). Organic Chemistry: with biological applications. McGraw Hill. QD253.2 .S65 2008
4. Smith, J.G. 2015. Organic Chemistry 3rd. Ed. New York: McGraw Hill, QD31.3.M35 2015
5. Solomons, T. W. G. and Fryhle, C. B. (2016). Organic Chemistry 10th , Ed. Hoboken, NJ: John Wiley. QD251.S64 2016
6. Rice, Joseph E. Organic Chemistry concepts and application QD 415.R52. 2014.

DAS 26503 Microbiology

Synopsis

The Microbiology course covers the fundamental principles of microbiology. The structure, physiology and ecology of viruses, bacteria, fungi and protists will be discussed. Aspects of microbiology that are important in health, sanitation and food processing are also discussed. The basic microbiology laboratory skill will be applied via practical experiments in laboratory.

References

1. Harley, J.P. 2011. Laboratory Exercises in Microbiology. 8th Ed. McGraw-Hill/Higher Education, USA. [QR41.2 .H37 2011].
2. Willey J., Sherwood, L. and Woolverton, C. 2011. Prescott's Microbiology. 8th Ed. McGraw Hill, USA. [QR41.2 .W54 2011].
3. Tortora, G.J., Funke,B.R. and Case, C.L. 2010.Microbiology: An Introduction. 10th Edition. Benjamin-Cummings Publishing Company. USA. [QR41.2 .T67 2010]
4. Madigan, M.T., Martinko, J.M., Stahl, D.A. and Clark, D.P. 2009. Brock Biology of Microorganisms. 12th Edition. Pearson International, USA. [QR41.2 .B76 2009].
5. Black, J.G. 2008. Microbiology: Principles and Explorations. 7th Edition. John Wiley & Sons, USA. [QR41.2 .B52 2008].

DAU 10303 Optic

Synopsis

Optics covers the mechanisms and processes of light propogation and natural phenomena of light prior to environment or daily activities . This course is an overview of technology and engineering approaches to emphasis on fundamental principles of light ray. Theory and conceptual design of optical systems for in common practices are discussed, as well as ray theory, interference, and diffraction. The concept, quantity derivation, and calculation, are presented, including reflection, diffraction, superposition process of light. This course covers the technology related to industrial optical analysis and calculation. Finally, there is discussion of natural processes for light phenomena concept, measurement , and designing instrument.

References

1. Pedrotti, F.L., Pedrotti, L.M. and Pedrotti, L.S., 2017. Introduction to optics. Cambridge University Press.
2. Young, H.D., Freedman, R.A. and Ford, A.L., 2013. University Physics with Modern Physics Technology Update. Pearson Education.
3. Halliday, D., Resnick, R. and Walker, J., 2013. Fundamentals of physics. John Wiley & Sons.
4. Ling, S.J., Sanny, J., Moebs, W., Friedman, G., Druger, S.D., Kolakowska, A., Anderson, D., Bowman, D., Demaree, D., Ginsberg, E. and Gasparov, L., 2016. University Physics Volume 2.

DAS 10503 Statistic I

Sinopsis

This course cover topic introduction of statistics, which are students will know some basic terms in statistics and the role of statistics. Students also learn type of variable, sources of data and scale of measurement. It also introduces how to organizing and graphing data such as frequency table, pie chart, histogram and bar chart. Then, it emphasizes on descriptive statistics, which includes measures of central tendency, measures of variability and measures of position. Students will introduce with the research fundamental include research design, research question and how to sampling the data. After that, they will learn how to model the data and find the relationship between variables.

References

1. Lau, Too Kya (2015). Statistics. Selangor : Herald Printer, 2015. HA29 .L28
2. Douglas C. Montgomery & George C. Runger (2002). Applied Statistics and Probability for Engineers. John Wiley.
3. Allan G.Bluman (2007) Elementary Statistics, A step by Step Approach. MacGraw Hill Int EditionPrentice Hall. TA330 .J352 2001

DAU 10203 Fundamentals of Electric and Electronic

Synopsis

This course introduces students to electric and magnetism knowledge needed related to electric on charge, field, potential, current and circuit. The application involves the vector resultant, velocity, drift velocity, current density, resistance, Ohm's Law, resistivity and conductivity, temperature dependence of resistance, capacitors, capacitance, electromotive force (emf), energy, electric power, internal resistance, serial and parallel resistance, terminal potential difference and Kirchhoff's Law. The course also discuss the magnetism in force of moving charge, Biot-Savart rule, magnetic force on current due to a straight wire, current loop, solenoids and electromagnetic induction involving Faraday's Law and Lenz's Law.

References

1. Godse, A.P. (2013). Basic Electronics. [TK7816 .G62 2013]
2. Kothari D. P. (2014). Basic electronics. [TK7816 .K67 2014]
3. Alpha Science International Ltd. (2015). Integrated electronics. [TK7819.I57 2015]
4. Ravish Aradhya H.V.(2013). Basic Electronics. [HF5415.1255 .R38 2013]

DAS 22403 Analytical Chemistry

Synopsis

The course discusses the fundamentals of analytical chemistry, basic chemical concept of quantities and concentrations, titrimetry method, basic spectrophotometry analyses of UV/Vis and FTIR and chromatographic separation methods and their applications of HPLC and GC.

References

1. Skoog, Douglas A (2014),Fundamentals of analytical chemistry, Belmont, CA : Cengage - Brooks/Cole , ISBN : 9780495558286, QD75.4.E4 .C76 2014
2. Crouch, Stanley R (2014), Applications of Microsoft Excel in Analytical Chemistry, Pacific Grove, Calif. : Brooks/Cole Cengage Learning, ISBN : 781285087955, QD75.22 .F86 2014
3. Lewis, Jaylen (2012), Electro - Analytical Chemistry, London : Auris Reference, QD115 .E434 2012
4. Barboz, Alistair (2012), Analytical chemistry, Nottingham : Auris Reference, ISBN : 9781781541425, QD75 .A52 2012
5. Khopkar, S.M. (2009). Basic Concept of Analytical Chemistry,3rd Ed.London : New Age Science, QD75.2.K46 2009

DAU 21303 Fundamentals of Food Sciences and Technology

Synopsis

The course provide students the basic knowledge of food science and technology which is a part of applied science knowledge.

References

1. Murano, P.S. 2003. Understanding food science and technology. Belmont CA: Wadsworth. Thomson Learning. [TP370.M87 2003]
2. Parker, R. 2003. Introduction to food science. Albany NY: Delmar. [TP370.P37 2003]
3. Fellows, P.J. 2009. Food Processing Technology; Principles and Practice 2nd edition. CRC Press, Boca Raton. [TP370.F44 2000]
4. Brown, A. 2004. Understanding food: principles and preparation. 2nd. Ed. Belmont CA: Wadsworth, Thomson Learning [TX354.B76 2004]
5. Berk, Z. 2009. Food Process Engineering and Technology. Elsevier, Amsterdam. [TP370.B47 2009]

DAU 16103 Computer Technology and Multimedia

Synopsis

This subject will provide relevant information covering the history of computer technology, hardware, software and computer networks. In addition, students will also be exposed particularly to the development of information and multimedia technology project by designing a website with multimedia elements.

References

1. Stallings, William (2011), Data and computer communications, London : Pearson Education, TK5105 .S73 2011
2. Forouzan, Behrouz A.(2012), Data communications and networking ,New York, NY : McGraw-Hill, TK5105 .F67 2012
3. Banerji, Ashok (2010), Multimedia technologies, New Delhi : Tata McGraw Hill, QA76.575 .B36 2010
4. Vaughan, Tay (2011), Multimedia : making it work, New York, NY : McGraw Hill, QA76.575 .V38 2011
5. Bing, Benny (2013), Broadband wireless multimedia networks, Hoboken, New Jersey : Wiley, K5105.775 .B56 201

DAS 20703 Statistic II

Synopsis

This course covers topics in probability where students are introduced to the probability of an events, conditional and independent events. Students also solve random variable problem such as expected value, variance and standard deviation on discrete and continuous random variable. Then, students enhanced their prior knowledge of random variable to solve Binomial, Poisson and normal distribution. They then studied the central limit theorem and used them to find the normal approximation to Binomial and Poisson distribution. Next, this course also explain on the sampling distribution of single and two means. After that, students are exposed to the concept of estimation and confidence interval for single and difference of two means and also hypothesis testing.

References

1. Nafisah@Kamariah Md. Kamaruddin el. al. (2010). 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.

DAU 24202 Introduction to Modern Physics

Synopsis

Modern Physics covers the quantum field in optics and mechanics . This course introduces students to basic modern physics knowledge that begins with brief historical background of modern physics, arises from failures of classical physics. Further, the concept of special relativity regarding the relationship between space and time is discussed. In addition, this course also discuss quantum theory, atomic structure, the particle matter of nature, and few experiments conducted to confirm atomic structure and the discovery of x-rays properties.

References

1. Husin Wagiran (2003). Fizik Moden. UTM Publisher.
2. Young, H.D., Freedman, R.A. and Ford, A.L., 2013. University Physics with Modern Physics Technology Update. Pearson Education.

3. Halliday, D., Resnick, R. and Walker, J., 2013. Fundamentals of physics. John Wiley & Sons.
4. Ling, S.J., Sanny, J., Moebs, W., Friedman, G., Druger, S.D., Kolakowska, A., Anderson, D., Bowman, D., Demaree, D., Ginsberg, E. and Gasparov, L., 2016. University Physics Volume 2.

DAU 18102 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. Occupational Safety and Health Act and Regulations.
3. MDC Publishers Printer Sdn. Bhd. 2001. Call number: KPG1390.M34 2001 rw N2."
4. Factories and Machinery Act & Regulations. MDC Publishers Printer
5. Sdn. Bhd. 2001. Call number: KPG1390.A31967 .A4 2001 rw N1."
6. Ismail Bahari (2006). Pengurusan Keselamatan dan Kesihatan Pekerjaan.
7. Edisi ke-2.. McGraw Hill Education (Malaysia). Call number: T55.I85 2006."
8. Davies, V. J. and Tomasin K. (2006). Construction Safety Handbook. 2nd ed. London: Thomas Telford. Call number: TH443.R43 2006.

DAU 22303 Environmental Chemistry

Synopsis

Environmental science is the foundation of the increased environmental understanding today and chemistry plays a major role in this. These substances may be natural or man-made, and there is increasing interest in the interface between man-made systems and the natural environment. The course discusses the chemical basis of environmental science via studies in the areas of water, earth and atmosphere.

References

1. Beard, J. M. (2013). Environmental Chemistry. 2nd. Ed. Boca Raton : Taylor & Francis. TD193.B42 2013
2. Kumar, Uday (2013). Concepts in Environmental Chemistry TD193.K82 2013
3. Harnung, S.E. (2012). Chemistry and the Environment TD193.H39 2012
4. Hanrahan, G (2012). Key Concepts in Environmental Chemistry TD193.H38 2012

5. X. Li (2011), Green Energy: basic concepts and fundamental. TJ808 .L59 2011
6. Smith K.A. & Mullins C.E. (2000), Soil and Environmental Analysis: Physic Method (2nd Ed), S592.3 .S64 2004 +O105:AK110"

DAU 34403 Ordinary Differential Equation

Synopsis

Ordinary differential equation is an introductory subject to differential equations. Topics include first and second order ordinary differential equations (ODEs), Laplace transform and its inverse. Students will learn how to classify and solve first order and second ODEs, use the techniques of Laplace transform to solve ODEs with specified initial and boundary conditions. Lastly students will learn on how to apply the knowledge in real life problem.

References

1. Abd Wahid Md. Raji. Differential equations for engineering students. Johor Bahru : Utm Pub., 2018. ISBN: 9789835215261.
2. Xie, Wei-Chau. Differential equations for engineers. New York : Cambridge University Press, 2010. ISBN: 9780521194242.
3. Abd. Wahid Md Raji. The first course of calculus for science and engineering students.UTM Skudai : Penerbit UTM, 2013. ISBN: 9789835208621.
4. Beerends, R. J. Fourier and Laplace transforms. Cambridge : Cambridge University, 2003. ISBN: 9780521534413.
5. Dyke, P. P. G. An introduction to Laplace transforms and Fourier series. Federation,Springer-Verlag, 2000. ISBN: 9781852330156

DAU 23302 Analytical Instrumentation

Synopsis

This course will emphasise on the various sample preparation techniques, the technique for producing the calibration curve and the proper technique for basic operation of selected instruments. The method for analysing the data as well as the preparing the analysis reports will be also covered. In this course, students will operate selected analytical instruments such as Ultra Violet-Visible (UV-VIS), Fourier Transform Infrared (FTIR), Gas Chromatography (GC), and High Performance Liquid Chromatography (HPLC).

References

1. Petrozzi, Sergio, Practical instrumental analysis methods, quality assurance and laboratory management, Weinheim : Wiley-VCH-Verl., 2013. QD79.I5 .P47 2013.
2. Cazes, Jack, Ewing's analytical instrumentation handbook, 3rd edition, Boca Raton, FL : CRC Press, 2005. QD79.I5 .E94 2005
3. McMahon, Gillian, Analytical instrumentation : a guide to laboratory, portable and miniaturized instruments, Chichester : John Wiley, 2007. QD79.15.M52 2007.
4. Khandpur, R. S., Handbook of analytical instruments, New Delhi : McGraw-Hill, 1989. Q185 .K48 1989
5. Settle, Frank A., Handbook of instrumental techniques for analytical chemistry, Upper Saddle River, NJ : Prentice-Hall PTR, 1997. QD79.I5 .H36 1997

DAU 22102 Pengurusan Sisa

Synopsis

Waste management provides students with a basic understanding of the management of the different types of waste concerning resource use and conservation when attempting to satisfy ecological restraints and economic demands. This course also provide various approaches and strategies to conservation of natural resources and efforts to design and implement sustainable use of these resources.

References

1. Davies, M.L et. al. Principles of Environmental Engineering and Science; McGraw Hill; 2004.Call No.: TD145 .D38 2004
2. Vesilind, P. Aarne Heine, Lauren G. Morgan, Susan M. Introduction to environmental engineering .Call No.: TD145 .V47 2010
3. Tchobanoglous, G., F. L. Burton, and H. D. Stensel. Wastewater Engineering: Treatment and Reuse. 4th ed. Metcalf and Eddy Inc., New York, NY: McGraw-Hill, 2003. ISBN: 0070418780.
4. MWH Staff. Water Treatment: Principles and Design. 2nd ed. New York, NY: Wiley, 2005. ISBN: 0471110183.
5. Edward S. Rubin. Introduction to Engineering & the Environment. McGraw Hill; 2001. .Call No.: TA170 .R83 2001 N7
6. Bishop P.L. Pollution Prevention: Fundamentals and Practice; McGraw Hill; 2000. .Call No.: TD897 .B57 2000N81:AK87

DAU 25102 Final Year Project I

Prerequisite Course: Acquired 40% of total credit requirement for Diploma graduation

Synopsis

This course covers topics for writing proposal based on supervisor. In the proposal must include 5 chapter which are introduction, literature review, methodology, result and discussion, conclusion and recommendation. Besides that, student will undergo practical by doing in laboratory to get the result of the project. At the end of this course student will present the proposal and make some correction based on examiner recommendation.

References

1. Panduan Penulisan Tesis UTHM, (2012).
2. Panduan Pelaksanaan Projek Diloma Sains Gunaan, Pusat Pengajian Diploma, UTHM (2014).

DAU 35203 Final Year Project II

Prerequisite Course: DAU 25102 Final Year Project I

Synopsis

The aim of this course is to apply basic knowledge and increase the student skills in the process of mastery their knowledge, problem solving, project planning, innovative

design, data analysis and testing. This project should be achieved in a group with systematic and professional report writing.

References

1. Panduan Penulisan Tesis UTHM, (2012).
2. Panduan Pelaksanaan Projek Diloma Sains Gunaan, Pusat Pengajian Diploma, UTHM (2014).

DAU 25309 Industrial Training

Prerequisite Course: Acquired 60% of total credit requirement for Diploma graduation

Synopsis

Students are required to undergo an industrial training in applied science field for 18 weeks. They will be trained by the agency/organization such as planning, management, design, field investigation, evaluation and assessment in related industries.

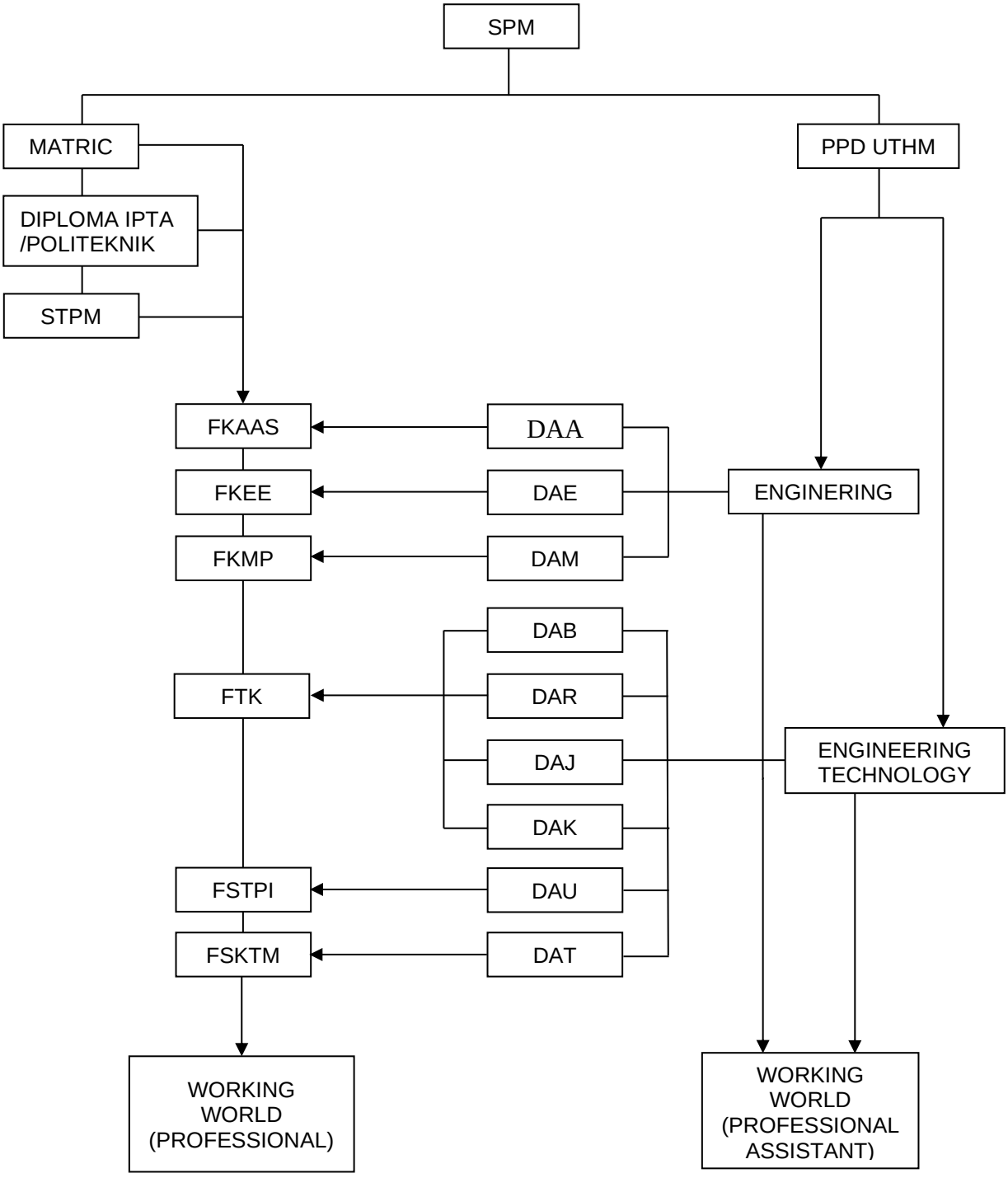
References

1. Pejabat Hubungan Universiti dan Industri, 2012. Panduan Latihan Industri (Program Sarjana Muda dan Diploma. UTHM.

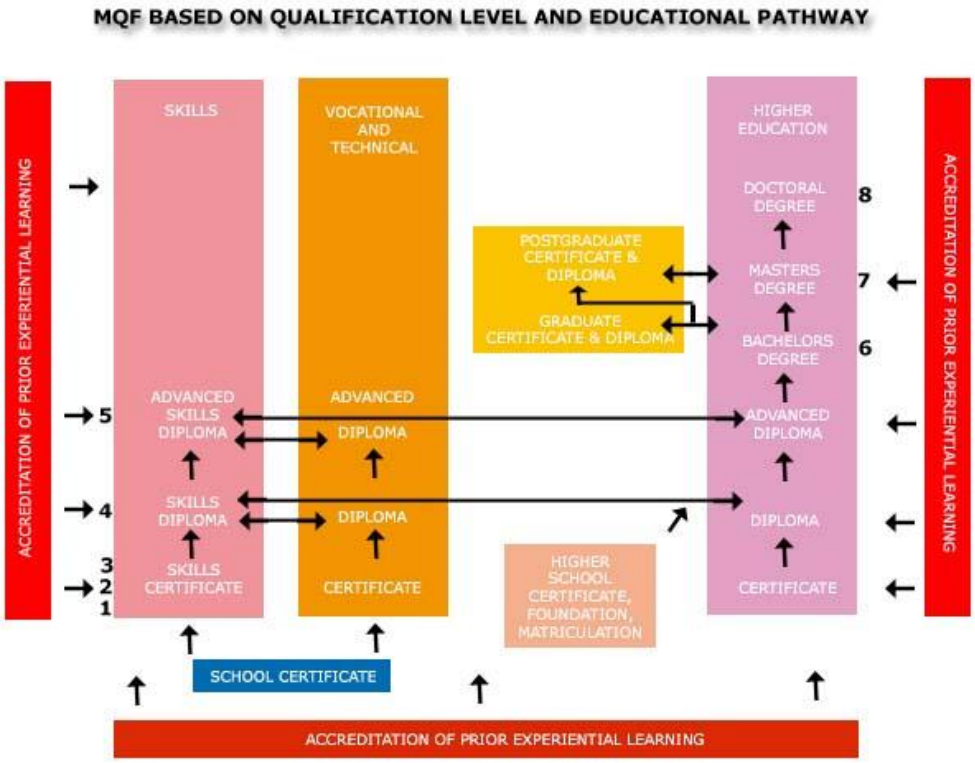
Career and Further Education Prospect

Applied science covers a broad field which include food technology, industrial chemistry, biotechnology, forensic science and applied physics. Career prospects for graduates of Diploma in Applied Sciences such as Science Officer and Assistant Laboratory Assistant in the industrial sector or research centers.

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



Malaysian Qualification Framework

MALAYSIAN QUALIFICATIONS FRAMEWORK: QUALIFICATIONS AND LEVELS

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

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