UTHM
Universiti Tun Hussein Onn Malaysia

Center for Diploma Studies
CEDS
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#UTHMJohor

ACADEMIC PROFORMA 2016/2017

Universiti Tun Hussein Onn Malaysia
Batu Pahat, Johor
MALAYSIA

Diploma of Applied Science (DAU)

QS STARS RATED FOR EXCELLENCE 2015
QS STARS RATED FOR EXCELLENCE 2015 TEACHING
QS STARS RATED FOR EXCELLENCE 2015 INNOVATION
QS STARS RATED FOR EXCELLENCE 2015 FACILITIES

Technically Above The Rest

Centre for Diploma Studies
Universiti Tun Hussein Onn Malaysia
86400 Batu Pahat, Johor

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

Contents

Foreword from the Vice Chancellor

Assalammualaikum Warahmatullahi Wabarakatuh and Warm Grettings

Our utmost gratitude to Allah the Almighty, I am able to share and pen down a couple of words and advices to readers of this proforma especially to new students of Universiti Tun Hussein Onn Malaysia (UTHM) whom had just enrolled in this 2016/2017 Academic Session.

Congratulations and welcome to the new students and thank you for believing in UTHM for your continuing endeavour in the search of knowledge towards the success in your future career and life betterment.

For your information, University leadership continues to strive in the search of, designing, and adapting the effective and efficient approaches that would able to produce the highest impact towards making UTHM a top Higher Education Institution. The success in obtaining “QS STARS RATED FOR EXCELLENCE 2015”☆☆☆ and UTHM was recognized as the Top 300 in the QS World University Ranking by Subject 2015 for Mechanical, Aeronautical and Manufacturing Engineering, have proven that UTHM continues creating excellence. These successes have convinced the University that these are due to the alignment of University's vision and mission which are continually strengthen and improve.

As the Vice Chancellor, I gave full confidence that UTHM is currently on the right track in the effort towards the success of the 10 Shifts identified in the Malaysia Education Blueprint (Higher Education). Based on the details outlined in the Malaysia Education Blueprint (Higher Education), UTHM is committed in producing human capital and disseminating knowledge to meet the needs of the industry and the community as well as to nurture creative and innovative human capital.

Last but not least, I believe that you will become graduates of the University that will successfully continue the University excellence tradition. When you graduated, you will become the member of society that will not only be able to apply the knowledge gained but also be able to contribute service and expertise for the importance and the needs of Religion, Race and Nation.

"**WITH WISDOM WE EXPLORE**"

PROFESSOR DATUK DR. MOHD. NOH BIN DALIMIN
Vice-Chancellor
Universiti Tun Hussein Onn Malaysia

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

Assalammualaikum Warahmatullahi Wabarakatuh and Warm Greetings

I would like to take this opportunity to express the utmost congratulations and well done to you as the new students whom have been successfully been selected to pursue studies at Universiti Tun Hussein Onn Malaysia for this 2016/2017 session.

I would also like to congratulate Centre for Academic Development and Training that has successfully produced the proforma which will be used as a guide for students in planning the studies beginning from the first semester until the end of the studies at this University.

Detailed planning which is effectively implemented at every semester as well as early preparation of students before attending lectures is very important in ensuring the readiness of learning process. Apart from that, the preparation for co-curriculum program also is important in shaping the personality and social development of students.

I hope that the publication of this proforma can be fully utilized by you in planning your studies at the University and you are capable of obtaining the best results as well as attaining excellent success.

Last but not least, I would like to wish All the Best and I pray that you will achieve excellent success in your studies at the University and thus can contribute as the human capital towards religion, race and Nation development.

Thank you.

PROFESSOR DR. WAHID BIN RAZZALY
Deputy of Vice Chancellor (Academic and International)
Universiti Tun Hussein Onn Malaysia

Foreword from the Dean Centre for Diploma Studies

Assalamualaikum Warahmatullahi Wabarakatuh and Warm Greetings

Congratulation to all new students and welcome all of you to the Centre for Diploma Studies (CeDS), UTHM for the Academic Session of 2016/2017. All of you are the chosen ones from those who are still looking for a place to study in a university. You have made the right choice by joining us the 15th Public University in Malaysia. I welcome all of you to the CeDS and we are always ready to support and train you to be a semi professional in the field of science and technology.

As a centre, we are responsible in 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 increase in the near future in phase with the increase needs of the nation manpower. I believe you have chosen a suitable programme that suits your qualification and dreams for future. Final year CeDS students will stand a chance to further their study in any Bachelor Programmes in the UTHM depending on the requirements stated by the faculties.

In term of infrastructure, the teaching and learning facilities provided in UTHM have been recognised by the QS Star Rating thus fulfill the standard required by the accreditation bodies. Besides that, the rigorous development of the UTHM campus currently, is to ensure conducive learning environment for students. Students will be able to use various facilities including libraries, dormitories, cafeteria, stadium, wireless internet network and all other facilities.

I hope that as a new student in the diploma programme in UTHM, you will use this proforma as a guide and reference to plan and thus completing your diploma studies with excellence.
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Wishing You Success.

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

University Vision

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

University 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 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
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

Tan Sri (Dr.) Ir. Jamilus bin Md Hussin
Pengerusi Lembaga Pembangunan Industri Pembinaan (CIDB Malaysia),
Pengerusi KLIA Premier Holdings

Members

Professor Datuk Dr. Mohd. Noh bin Dalimin
Vice Chancellor
Universiti Tun Hussein Onn Malaysia

Tan Sri Dato' Sri Sufri bin Hj Mohd Zin
Group Managing Director
TRC Synergy Berhad

Associate Professor Dr. Arham bin Abdullah
Director
Industrial Relation Division
Ministry of Higher Education Malaysia

Datuk Dr. Pang Chau Leong
Department of Skills Development
Ministry of Human Resources

Datuk Hj. Mohlis bin Jaafar
Head of Director
Department of Polythechnic Education
Ministry of Higher Education Malaysia

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

Datuk Mat Noor Nawi
Chairman
Exim Bank Berhad

Puan Mazula binti Sabudin
Director
Student Entry Management Division
Ministry of Higher Education Malaysia

Secretary

Encik Abdul Halim bin Abdul Rahman
Registrar
Universiti Tun Hussein Onn Malaysia

Senate Members

Chairman

Professor Datuk Dr. Mohd. Noh bin Dalimin
Vice-Chancellor

Members

Professor Dr. Wahid bin Razzaly
Deputy Vice-Chancellor (Academic and International)

Professor Dr. Hashim bin Saim
Deputy Vice-Chancellor (Research and Innovation)

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

Professor Dr. Ahmad Tarmizi bin Abd. Karim
Assistant Vice-Chancellor (Development, Management Facility and ICT)

Profesor Dato' Dr. Abdul Razak bin Hj. Omar
Assistant Vice-Chancellor (Community and Industrial Relations)

Professor Dr. Hj. Ismail bin Abdul Rahman
Dean Centre for Graduate Studies

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

Dr. Afandi bin Ahmad
Dean Faculty of Electrical and Electronic Engineering

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

Dr. Mohd Lizam bin Mohd Diah
Dean Faculty of Technology Management and Business

Associate Professor Dr. Ahmad bin Esa
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
Acting Dean Faculty of Science, Technology and Human Development

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

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

Associate Professor Dr. Azme bin Khamis

Dean Center for Academic Development and Training

Professor Dr. Rosman bin Md. Yusoff
Dean Centre for General Studies and Co-Curricular
Director Institute for Social Transformation and Regional Development

Madam Robijah binti Kamarulzaman
Dean Centre for Language Studies

Professor Dr. Rosziati binti Ibrahim
Dean Research and Development Centre

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

Professor Dr. Yusri bin Yusof
Director of International office/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 Science, Technology and Human Development

Mr. Abdul Halim bin Abdul Rahman
Secretary/Registrar

Mdm. Azizah binti Nasri
Bursary (Acting)

Mr. Haji Bharun Narosid bin Mat Zin
Chief Librarian

Centre for Diploma Studies

Centre Vision

Excellentin providingmultidisciplinaryeducationinscienceandtechnology

Centre Mission

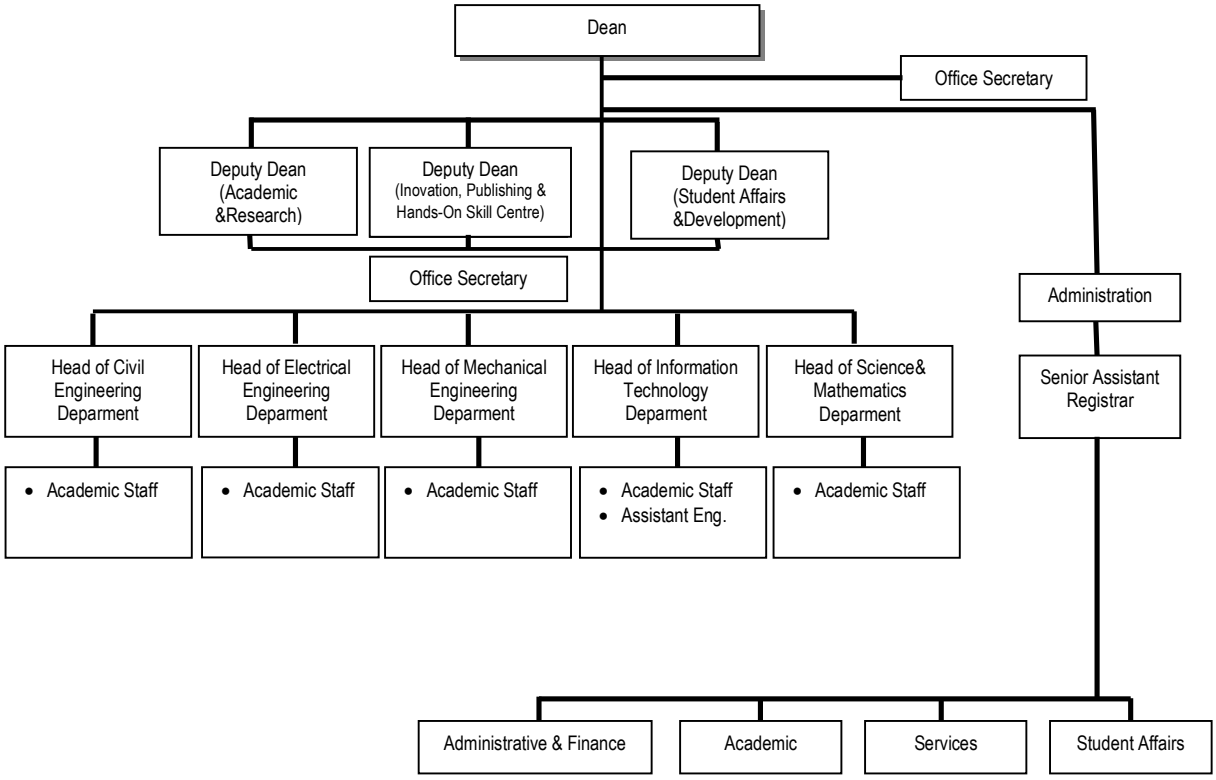
Producinggraduates whocontributeto national development throughaholisticacademicprogram

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 department 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 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 Science and Mathematics

External Examiner

Assoc. Prof. Dr. Wan Muhammad Saridan bin Wan Hassan
Ph.D (Medical Physics) (University of Aberdeen, UK),
M. Sc. (Physics) (University of California, USA),
B.Sc. Ed. (Hons) (Physics) (UTM)

Industrial Advisor

En. Miskandar bin Mat Sahri
Head of Unit
Protein and Food Technology
Malaysian Palm Oil Berhad

Faculty Staff Directory

Administration

Dean
Prof. Dr. Hj. Ismail bin Abdul Rahman
Ph.D (The University of Manchester, UK) MSc. (Bldg. Serv. Engineering) (Heriot Watt, UK), B.Eng. (Hons) (Civil Engineering)(UTM), Dip. (Civil Engineering)(UTM)

Deputy Dean (Academic and Research)
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 Development)
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)

Deputy Dean (Innovation, Publication and Hands-On Skill Centre)
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)

Senior Assistant Registrar
Eaddy bin Zainal Abidin
BSc. (Forestry) (UPM), Dip (Forestry) (UPM)

Assistant Administrative Officer (Academic and Research)
Mohd Zukhairi bin Husin
Dip. (Computer Science) (UiTM)

Assistant Administrative Officer (Administrative and Finance)
Nur Izzati Hazwani binti Muhammad Ridwan
Dip. (Tech. Managemant) (UTM)

Administrative Assistant (Clerical & Operation) Student Affairs and Development
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
Siti Hawa binti Ismail
STPM (SMK Bandar Mas)

Administrative Assistant (Clerical & Operation) Academic and Research
Nor Nizaha binti Mahadi
SPM (SM Tun Sardon Rengit)
Administrative Assistant (Clerical & Operation) Academic and Research
Mohd Afizal bin Abd. Aziz

Dip. (Teknologi Pembuatan) (ADTEC), Dip. (Manufacturing Tech.) (ADTEC), SPM (SMK Syed Abu Bakar)

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

Department of Science and Mathematics

Academic Staff

Head of Department
Pn. Aida binti Muhamad
MEng (Civil Engineering) (UTHM), BSc.(Hons). (Chemistry) (UKM)

Hj. Zulkifli bin Senin
MEd. (Educational Technology) (UTM), BSc. & Ed. (Chemistry) (UTM), Dip.Sc & Ed. (Chemistry) (UTM)

Hj. Suhaimi bin Makminin
MSc. (Chemistry Education) (UTM), BSc. (Chemistry) (UKM), Dip.Ed. (Chemistry) (UKM)

Hjh. Saffiah binti Abdullah Khir
MSc. (Chemistry) (UTM), BSc. (Food Science) (Leeds University, UK)

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

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

Pn. Masrianis binti Ahmad
MSc. (Magnetic Material and Superconductors) (UPM), BSc. (Material Science) (UPM)

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)

Hj. Mohd Lokoman bin Kasiran
MSc (Chemical Physics) (East Anglia, UK), BSc. (Chemistry) (UKM)

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

Pn. Norhazimah binti Abdul Halim
MEng (Bioprocess) (UMP), BEng (Chemical)(Biotechnology)(UMP)

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

Pn. Dilaeleyana binti Abu Bakar Sidik
MEng (Chemical)(UTM), BEng (Chemical)(UMP)

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

Cik Norazreen binti Sharip
MSc (Physics)(UTM), BSc (Health Physics)(UTM)

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

Cik Norain Binti Ahmad Nordin
MSc. (Mathematics) (UTM), BSc. (Industrial Mathematics) (UTM)

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

Cik Nuramirah Binti Juma'at.
MSc. (Mathematics Engineering) (UTM), BSc. (Mathematics) (UTM)

Pn. Norhaliza binti Abu Bakar
MSc. (App. Mathematics) (UPM), BSc. with Education (Honours) Mathematics (UPM)

Programme Name

Diploma in Applied Sciences (DAU)

Programme Aims

Diploma in Applied Sciences is to produce semi – professionals human resourcebased 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 Science:

PLO1 : Apply basic knowledge of science and mathematics in science and technology. (K-Knowledge)

PLO2 : Apply knowledge, skills, techniques and tools of science and technology comprehensively in the practice of applied sciences. (PS – Practical Skill)

PLO3 : Interact with professionals and communities effectively in writing, verbal and ICT. (CS – Communication Skill)

PLO4 : Provide effective solutions to the problems of mathematics, pure science and applied science. (CTPS-Critical Thinking Problem Solving)

PLO5 : Practice teamwork efficiently in solving tasks. (TS- Team Skill)

PLO6 : Practise the concept of lifelong learning and manage information competently. (LLL&IM-Longlife Learning and Information Management)

PLO7 : Develop potential entrepreneurial skills for career development. (ES-Entrepreneurship Skill)

PLO8 : Apply knowledge of applied science professionally and ethically in their work, community and country for the prosperity of mankind. (M&PE-Moral and Professional Ethics)

PLO9 : Develop the potential as a leader individually or in groups effectively. (LS-Leadership Skill)

Curriculum Structure

Table 1. Diploma in Applied Science (DAU)

Year	Semester	Course Code	Courses	Credit	Total
1	Special	UWS 10403	Pengantar Kenegaraan dan Pembangunan Malaysia	3	7
		UWA 10402 /UWA 10202	Pengantar Pengajian Islam/Pengajian Moral	2	
		UWB 10102	Academic English	2	
	I	UWB 10402	Technical Communication I	2	17
		UQ* 1***1	Co-Curriculum I	1	
		DAY 10102	Keselamatan dan Kesihatan Pekerjaan	2	
		DAS 10103	Algebra	3	
		DAS 14103	Physics I	3	
		DAS 12303	Physical Chemistry	3	
		DAU 16103	Computer Technology and Multimedia	3	
	II	UWB 20502	Technical Communication II	2	16
		UWA 10502	Theology and Science	2	
		UWB 1**02	Foreign Language	2	
		UQ* 1***1	Co-Curriculum II	1	
		DAS 12403	Analytical Chemistry	3	
		DAS 14203	Physics II	3	
		DAS 16103	Biology: Forms and Functions	3	
	III				
2	I	DAS 20502	Statistics	2	18
		DAS 22503	Organic Chemistry	3	
		DAS 26203	Cell Biology	3	
		DAS 24603	Physics III	3	
		DAU 25403	Fundamentals of Food Science and Technology	3	
		DAU 10102	Fundamentals of Forensic Science	2	
		DAU 23102	Aromatherapy	2	
	II	DAS 20803	Calculus	3	16
		DAU 22202	Renewable Resources	2	
		DAS 26302	Human Structure and Functions	2	
		DAS 20903	Research and Statistical Methods	3	
		DAU 21202	Food Quality Assurance and Safety	2	
		DAU 24102	Fundamentals of Health Physics	2	
		DAU 25102	Final Year Project I	2	
	III	DAU 25304	Industrial Traning	4	4
3	I	DAU 30203	Crime Scientific Investigations	3	17
		DAU 32303	Environmental Chemistry	3	
		DAU 33202	Herbs, Vitamins and Minerals	2	
		DAU 34203	Physics for Life Sciences	3	
		DAU 35203	Final Year Project II	3	
		DPK 20103	Perniagaan dan Keusahawanan	3	
				Total Credit	**95**

Synopsis of University Courses

Year	Sem	Course Code	Courses	Credit	Total
1	Special	UWS10403	Nationhood and Current Development of Malaysia/ *Malaysian Studies and Culture	3	7
		UWA10102/ UWA10202	Islamic Studies/Moral Studies	2	
		UWB 10102	Academic English	2	
	I	UWB10402	Technical Communication I	2	3
		UQ*1***1	Co-curriculum I	1	
	II	UWB20502	Technical Communication II	2	7
		UWA10502	Theology and Science	2	
		UWB1xx02	Foreign Language	2	
		UQ*1***1	Co-curriculum II	1	
2	I				
	II				
	III				
3	I	DPK 20103	Business and Entrepreneurship	3	3
Total Overall Credit					**20**

Synopsis of Courses

UWS10403 Nationhood and Current Development of Malaysia

Synopsis

This course will provide students a fundamental concept, the processes of formation and development of Malaysia. The topics covered include the concept of state, Malacca Kingdom, implication of imperialism and colonization, spirit of patriotism and nationalism, independence and formation of Malaysia. Besides, students will also be exposed to the constitution of Malaysia, Malaysian Government System, Economic and Social Development Policy as the main policy in the national development. At the end of the course students will able to appreciate the roles and responsibilities of a good citizen to the country.

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]
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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]

UWA10402 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. Harun Din (Dr.) (2001),Manusia Dan Islam, cetakan pertama, Kuala Lumpur: Dewan Bahasa dan Pustaka. (BP174. M36 1990)
2. Ismail Haji Ali, (1995), Pengertian dan Pegangan Iktikad yang benar: Ahli Sunnah Wal Jamaah: Kuala Lumpur: Penerbitan al-Hidayah. (BP166.78. P46 1995)
3. Mustafa Abdul Rahman (1998), Hadith 40, Kuala Lumpur: Dewan Pustaka Fajar. (BP135. A2 M87 1998)
4. Mustafa Haji Daud (1989), Institusi Kekeluargaan Islam, Kuala Lumpur: Dewan Pustaka dan Bahasa. ((BP188.3. F3.M87 1989)
5. Paizah Haji Ismail (1991), Undang-undang Jenayah Islam, Kuala Lumpur: Dewan Pustaka Islam, Angkatan Belia Islam Malaysia. (BP144. P35 1991)

UWA10202 Moral Studies

Synopsis

This course explains on concepts of moral, aspects of moral and its importance in daily lives, Western moral theories and moral values of great religions of the world, moral values in work and current 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].

UWB10102 Academic English

Synopsis

Academic English focuses on fulfilling students' academic requirements such as the acquisition of reading, writing, speaking and listening skills in English. The course also provides opportunities for students to acquire note taking and study skills. Students will be reinforced on aspects of English language oral and written skills that are most relevant to them in their academic work. By the end of the course, students should be able to use English for wide range of academic activities.

References

1. Koh, Soo Ling (2005). MUET Moments: Malaysia University English Test. Petaling Jaya: Pearson. No. panggilan: PE1128.K63 2005.
2. Swan, Michael & Walter, Catherine (2004). How English Works: A Grammar Practice Book. Oxford: Oxford University Press. No. panggilan: PE1128.S92 2004.
3. Richards, Cynthia (2002). Panduan dan Praktis MUET: Malaysian University English Test. Petaling Jaya: Longman. No. panggilan: PE1128.P26 2002.
4. Majlis Peperiksaan Malaysia (2002). Koleksi Kertas Soalan MUET (800) December 2001. Petaling Jaya: Pearson Education Malaysia Sdn. Bhd. No. panggilan: PE1128.K643 2002.
5. Pfeiffer, William S. (2000). Technical Writing: A Practical Approach. New Jersey: Prentice-Hall. No. panggilan: PE1475.P47 2000.

UWB 10402 Technical Communication I

Prerequisite :UWB 10102 Academic English

Synopsis

This course introduces students to what technical communication comprises of. At this level, students will learn different types of technical definition and description; and also different types of reports which include informational and analytical reports. Students will also go through the basic skills of writing process in producing those document such as analyzing audience, collecting data, and organizing information. In addition, grammer, usage, and mechanics of the report are emphasized throughout to ensure that students produce good quality documents. Finally, students will also hanve on-going oral presentation in either small groups or to the whole class.

References

1. Finkelstein, L.(2008). Pocket Book of Technical Writting for Engineer and Scientist. 3rd ed. BostonL McGraw Hill Higher Education. (call no:T11.F56 2008)
2. Kolin, P.C(2009). Succesful Writing at Work. 9th ed. Wadsworth: Engage Learning Company. (call no. PE1408.K64 2009)
3. Salbiah Seliman et al.(2008). English Comunication for Learner in Engineering. Petaling Jaya: Prentice Hall. (call no: T10.5.S26 2008)
4. Lakshmy Anantha Krisnan et al. (2006). Engineering Your Report: From Start to Finish. Singapore: Peearson. (call no. T11.E64 2006)
5. Blicq, R. & Moretto, L. (2007). Technically-Write! Canada: Pearson Educetion (call no: T11.B54 2004)

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.

DAY 10102 Occupational Safety and Health

Prerequisite Courses: None

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. 3rd ed. New York: McGraw-Hill. Call number: T55.A57 1989.

DAS 10103 Algebra

Prerequisite Courses: None

Synopsis
This course covers topics in mathematics that uses the properties of the real numbers as exponent, logarithms and radicals. Students also solve polynomial problems such as quadratic equations, inequalities and absolute value. Partial

fractions also introduced and numerical methods such as the Bisection method and Secant for nonlinear equations. Next, the course also explains the sequence and series of arithmetic and geometric series. Algebraic method used is the binomial expansion. The topic cover in trigonometry is ratio of any angle trigonometry and trigonometric equations. Next, students use arithmetic operations and elementary row operations in matrix topic. To solve systems of linear equations in matrix, method use are matrix inverse, Gauss-Jordan elimination, numerical solution method and Gauss-Seidel methods. At the end of this course, students learn the lines and equation of the plane in vector. Lastly, variety of methods used to solve complex number in arithmetic operations such as polar form, Euler formulas and theorems of De Moivre.

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

DAS 14103 Physic I

Prerequisite Courses: None

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 course also discusses Newton's Law and dynamics motion of body on horizontal and incline plane. The laboratory experiments are carried out on selected topics.

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

DAS 12303 Physical Chemistry

Prerequisite Courses: None

Synopsis

The course introduces students to physical chemistry which include topics on states of matter, atomic mass and structures, the gas properties and gas laws, thermodynamics and thermochemistry, solution and solubility and related laws, chemical equilibrium, electrochemistry, acids and bases, chemical kinetics, Quantum mechanics and electronic structure of atoms as well as chemical bonding and intermolecular forces in

compounds.

References*:*

1. Foulkes, F.R. (2013). *Physical Chemistry for Engineering and Applied Science*. Boca Raton : CRC Press, Taylor & Francis Group. QD453.3 .F68 2013
2. Kuhn, H., Forsterling, Horst-Dieter & Waldeck, D.H. (2009). *Principles of Physical Chemistry,* John Wiley; , Hoboken, NJ. QD453.3 .K83 2009
3. Levine, I.N. (2009). *Physical Chemistry, 6th. Ed*. McGraw Hill, Boston. QD453.3 .L48 2009
4. Tuteja, A. (2007). *Fundamentals of Physical Chemistry*. Discovery Publishing House, New Delhi. QD453.2 .T87 2007
5. Abdullah, N.,Abdul Latif, L. & Ithnin, R. (1998). *Kimia Fizikal Asas Matrikulasi*. Penerbit Fajar Bakti, Shah Alam, Malaysia. QD453.2 .N67 1998

DAU 16103 Computer Technology And Multimedia

Prerequisite Courses: None

Synopsis

This course provides the 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 multimedia technology and the design of multimedia presentation.

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

UWB 20502 Technical Communication II

Prerequisite Course(s): UWB 10402 Technical Communications I

Synopsis

This course emphasises on task- based learning approach and focuses on developing students' delivery of speech in oral interactions and presentations. Importance is given on mastery of self-directed learning, team-work, research, oral presentations, reasoning and creativity. This course also enables students to acquire knowledge and skills necessary for conducting and participating in meetings, including writing of meeting documents. Students will also be exposed to the techniques of writing job application letters, resumes and conducting job interviews.

References

1. Brantley, Clarice Pennebaker (2005). Effective Communication for Colleges (10th ed.) Ohio: Thomson Learning. HF5718.B72 2005
2. Cheesebro,T, O'Connor, L. & Rios, F. (2007). Communication skills: Preparing for Career Success (3rd ed.) Upper Saddle River, NJ: Pearson. HF5718.C53 2007
3. Gurak, L. J. & Lannon, J. M. (2010). Strategies for Technical Communication in the Workplace. New York: Longman Publishing Group. HF5718.G87 2010
4. Hanim Kamarudin, Mohammad Talha Mohamed Idris, Zulida Abdul Kadir, Noor Shahariah Saleh, & Norashikin Abdul Hamid (2012). Technical Communication II: Teching Modul UWB20502. Batu Pahat: Penerbit UTHM.
5. Mohammad Talha Mohamed Idris & Zulida Kadir (2009). Technical Communication II: Teaching Modul UMB 1122. Batu Pahat: UTHM.
6. Zulida Abdul Kadir (2006). Technical Communication II: Teaching Modul UMB 1122. Batu Pahat: UTHM. T11.Z84 2006

UWA 10502 Theology 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. Ghazali Darussalam, 2001, Tamadun Islam dan Tamadun Asia, Kuala Lumpur: Utusan Publication. DS36.86 .G52 2001 N1
2. Harun Din, 2003, Manusia dan Islam, Kuala Lumpur: Dewan bahasa dan Pustaka BP166.7 .H37 2003
3. Hussain Othman, Akidah ketuhanan dan Sains, 2007, Batu Pahat : Penerbit Universiti Tun Hussein Onn Malaysia BP166.2 .H87 2007
4. Maurice Bucaille, 2006, The Bible, The Quran and Sceince : The holy Scriptures examined in the light of modern knowledge, Gombak: A.S Noordeen BP190.5.S3 .B834 2006
5. Mir Aneesuddin, 2000, terj: Fatwa al-Quran Tentang Alam Semesta, cet.1, Jakarta: Serambi BP134.N3 .A53 2000
6. Mohammed Ali Albar, 1993, terj: Rusli Haji Nordin, cet. 2, Perkembangan Manusia Menurut al-Quran, Kuala Lumpur: Crescent News KL, Sdn. Bhd BP190.5 .A53 1992 N1
7. Sulaiman Nordin (et. al.), 1995, Sains Menurut Perspektif Islam, Kuala Lumpur: Dewan Bahasa dan Pustaka BP134.S3 .S34 1995
8. Syed Muhammad Naquib Al-Attas, 1981, Islam dan Sekularisme, Bandung: Pustaka BP161.2 .A42 1981

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

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.

DAS 12403 Analytical Chemistry

Prerequisite Courses: None

Synopsis
The course discusses the fundamentals of analytical chemistry, basic chemical concept of quantities and concentrations, the chemical equilibrium basic approach, basic statistical analyses in data evaluation, the electrochemical methods, gravimetric analyses, the basic spectrochemical analyses of UV/Vis and IR and chromatographic separation methods and their applications.

References*:*
1. Christian, G.D. (2004). Analytical Chemistry, 6th. Ed. John Wiley & Sons, USA. QD101.2 .C47 2004
2. Skoog, D. A. et al. (2000). Introduction to Analytical Chemistry. Cengage Learning, Singapore QD75 .I57 2011
3. Mendham, J. et al. (2000). Vogel's : Textbook of Quantitative Chemical Analysis, 6th. Ed. Prentice Hall, London. D101 .V64 2000
4. Skoog, D.A. et. al. (2004). Fundamentals of Analytical Chemistry. Thomson Learning: USA. QD 75.22 .F86 2004
5. Khopkar, S.M. (2009). Basic concepts of Analytical Chemistry. New Age Science. QD75.2 .K46 2009

DAS 14203 Physics II

Prerequisite Courses: None

Synopsis
This course introduces students to mechanic physics knowledge needed related to properties of material, fluids, waves and sounds, thermal physics, light and optics. The application involves the concept of density, pressure, Archimedes Principle, Pascal Law, buoyancy in fluid, type of elastic modulus and thermal properties, application of wave such as interference, diffraction and polarization. The course also discusses light and optics such as geometrical optics. The laboratory experiments are carried out on selected topics.

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: Pacific Grove, CA: Thomson Learning. QC21.3 .S47 2006 v.2
3. 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
4. Urone, P. P. (2001). College Physics. 2nd Ed. USA: Pacific Grove, CA: Brooks/Cole. QC23 .U76 2001.
5. Kramer, L. (2007). College Physics. 8th ed. San Francisco, CA : Pearson. QC23.2 .K72 2007

DAS 16103 Biology : Form and Functions

Prerequisite Courses: None

Synopsis

Biology Forms and Functions is the study of the structure and function of the cells. In this course, students will be provided with the knowledge on different areas of cellular biology, the chemistry of living things, cell structure and function, cell membrane and transport, glycolysis, respiration and photosynthesis. The course will also discuss on genetics code and inheritance.

References*:*

1. Campbell, N.A and Reece, J.B (2009). Biology 8th. ed. San Francisco, Pearson Benjamin Cummings. QH308.2 .C35 2009
2. Belk, C and Maier, V.B (2010). Biology : Science for Life. 3rd. ed. New Jersey, Pearson. QH307.2 .B44 2010
3. Mader, S.S (2012). Essentials of Biology. Boston. McGraw-Hill. QH308.2 .M325 2012
4. Ross, F.C, Bailey, D and Enger, E.D (2009). Concepts in Biology. 13th. Ed. Berkshire, McGraw-Hill. QH308.2 .E53 2009
5. Raven, P.H (2011). Biology. Dubuque, IA : McGraw-Hill. QH308.2 .B58 2011

DAS 20502 Statistics

Prerequisite Courses: None

Synopsis

The course covers topics such as an introduction to statistics and probability statistics. In the introduction topic, students are introduced to the measure of central tendency, mean, median and mode while the measure of dispersion such as range, variance and standard deviation. The topic of probability contains independent event, conditional probability and Bayes theorem. Next, the course involves discrete and continuous variables, probability distribution functions and cumulative distribution function and also expectation and variance. Three new probability distributions introduced are Binomial, Poisson and normal distribution, and the approximation for; Binomial distribution to Poisson and normal approximation. Next, students learn the sampling distribution and estimation for single mean and the difference between the two mean. At the end of this course, students learn hypothesis testing for the mean and the difference between the two mean. And simple linear regression with graphical methods, method of least squares, the coefficients of determination and correlation coefficient.

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
5. Douglas C. Montgomery, George C. Runger & Norma Faris Hubele. (2004) Engineering Statistics. John Wiley. QA276.12 .M66 2004

DAS 22503 Organic Chemistry

Prerequisite Courses: None

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 Organuc Chemistry 4th Ed.* New York: John Wiley.
   QD253.2 .B76 2011
2. Carey, F. A. and Giuliano, R.M. 2001. *Organic Chemistry 7th. Ed.* McGraw Hill.
   QD251.3 .C37 2011
3. Smith, J.G. (2008). *Organic Chemistry for Matriculation.* New York: McGraw Hill. QD253.2 .S65 2008
4. Smith, J.G. 2008. *Organic Chemistry 3rd. Ed.* New York: McGraw Hill, QD253.2 .S64 2008
5. Solomons, T. W. G. and Fryhle, C. B. (2011). *Organic Chemistry 10th , Ed.* Hoboken, NJ: John Wiley. QD253.2 .S64 2011

DAS 26203 Cells Biology

Prerequisite Courses: None

Synopsis

This course aim to provide student's knowledge on evolutions, diversity of living things. This course begins with the fundamentals of Evolution & Taxonomy. The mechanisms behind the development of species, ecosystems and biodiversity will be explored. Each Kingdom of Life will be discussed.

References*:*

1. Campbell, N.A and Reece, J.B (2009). Biology 8th. Ed. San Francisco, Pearson Benjamin Cummings. QH308.2 .C35 2009
2. Belk, C and Maier, V.B (2010). Biology : Science for Life. 3rd. ed. New Jersey, Pearson. QH307.2 .B44 2010
3. Mader, S.S (2012). Essentials of Biology. Boston. McGraw-Hill. QH308.2 .M325 2012
4. Ross, F.C, Bailey, D and Enger, E.D (2009). Concepts in Biology. 13th. Ed. Berkshire, McGraw-Hill. QH308.2 .E53 2009

5. Krebs, Charles J (2008) The ecological world view. Wallingford, CABI QH541 .K734 2008

DAS 24603 Physics III

Prerequisite Courses: None

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, magnetic force on current due to a straight wire, current loop, solenoids and electromagnetic induction involving Faraday's Law and Lenz's Law. Modern Physic also apart in this course involving of quantization of light, photoelectric effect and Compton effect, atom structure, energy level, line spectrum of hydrogen atom, wave-particle duality, de Broglie hypothesis, generation and diffraction of x-ray. The laboratory experiments are carried out on selected topics.

References*:*

1. Giambattista, A., Richardson, B. M., Richardson, R. C. (2007). College Physics 2nd Ed. New York: Mc Graw Hill.
2. Serway, R. A., Faughn, J. S., Moses, C. J. (2003). College Physics. 6th Ed. USA: Pacific Grove, CA: Thomson Learning.
3. Bueche, F. J., Hecht, E., Hademenos, G. J. (2000). College Physics: based on Schaum's Outline of college physics. New York: McGraw-Hill.
4. Urone, P. P. (2001). College Physics. 2nd Ed. USA: Pacific Grove, CA: Brooks/Cole.

DAU 25403 Fundamentals of Food Science and Technology

Prerequisite Courses: None

Synopsis

This course introduces students to the fundamentals of food science and technology. It provides a review of the biological and chemical concepts that are important in food science and technology. Students will be introduced to food composition, food groups and their constituents. Food microbiology, food chemistry, food safety, quality factors in foods, and a brief introduction to food spoilage, processing, preservation, sensory evaluation and packaging are included. Brief discussions on the processing of meat, poultry and vegetables are also included.

References*:*

1. Berk, Zeki. (2009). Food *Process Engineering and Technology*. Amsterdam, Elsevier.
   TP370.B47 2009
2. Fellows, P.J. (2009). *Food Processing Technology; Principles and Practice* 3rd Edition. London : Woodhead Publishing
   TP370.F44 2009
3. Brown, A. (2004). *Understanding food: principles and preparation*. 2nd.

Edition. Belmont, CA : Thomson Learning.
TX354.B76 2004
4. Murano, P.S. (2003). *Understanding food science and technology*. Belmont, CA : Thomson Learning.
TP370.M87 2003
5. Parker, R. (2003). *Introduction to food science*. Australia, Delmar : Thomson Learning.
TP370.P37 2003

DAU 10102Fundamental of Forensic Science

Prerequisite Courses: None

Synopsis

This course introduce students in the forensic science, analytical in forensic, instrumentation used in forensic sciences and analytical approach for drugs.

Reference:

1. Andrew R. W. Jackson, Julie M. Jackson. (2008). Forensic science. Pearson Prentice Hall, Harlow. HV8073 .J32 2008
2. Ayn Embar-Seddon, Allan D. Pass. (2009). Forensic science. Pasadena, CA: Salem Press. HV8073 .F67 2009
3. Suzanne Bell. (2006) . Forensic chemistry. Pearson. Upper Saddle River. RA1057 .B44 2006
4. David E. Newton. (2007). Forensic chemistry. Facts on file. New York. RA1057 .N48 2007
5. James, S. H. (2009). Forensic science : an introduction to scientific and investigative techniques. CRC. HV8073 .F68 2009

DAU 23102 Aromatheraphy

Prerequisite Courses: None

Synopsis

This course introduces students to the introduction and history of aromatherapy, fundamentals of essential oils, production methods in extraction of essential oils, and the use of essential oils.

References*:*

1. Jenkins, N. (2006). Aromatherapy in essence. Hodder Arnold Group, London. RM666.A68 .J46 2006
Lawless, J (2002). The Encyclopedia of Essential Oils, Element Books, UK.
2. ISBN-10 Lavabre, M (1996). The Aromatherapy Workbook, Inner Traditions/Bear & Co. RM666.A68 .L38 1990, ISBN : 0892813466
3. Harding, J. (2001). Secrets of Aromatheraphy, Dorling Kindersley, London. RM666.A68 .H37 2001 k
4. Can Baser, K.H. and Buchbauer, G. 2010. Handbook of essential oils: Science, technology, and applications, CRC, Boca Raton. ISBN : 9781420063158

DAS 20803 Calculus

Prerequisite Courses: None

Synopsis

This course explains in detail topics related to algorithms. The first topic is function. It includes a description of the relationship and functions, sketching graphs of algebraic functions, piecewise function, trigonometric functions, exponential functions, logarithmic functions, hyperbolic functions and inverse functions. The second topic describes the limit of a function, one-sided limit, limit at infinity and continuity. Further topics include the differentiation techniques such as sum and differences, product and quotient rule. Next, it includes chain rule, differential of the exponential function, logarithms, implicit, parametric, inverse trigonometric and higher derivatives. The next topic is the differentiation applications involving rate of change, maximum and minimum problems, sketching graphs and L'Hopital rule. At the end 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. Finally, the topic of integration of applications which is area, volumes by cylindrical shells, arc length and surface area.

References*:*

1. Zulkifli Senin (2015). Calculus. Pusat Pengajian Diploma, UTHM.
2. Abd Wahid Md Raji (et al.). (2006). Calculus, UTM & PP Sains.
3. Anton, Bivens, I., Davis, S. Calculus. (7th ed). (2002). John Wiley & Sons,Inc, USA.
4. James, Glyn. Modern Engineering Mathematics third edition. (2001). Prentice Hall, Essex.
5. Finney, R.L., Weir, M.D. and Giordano, F.R. (2001). Thomas' Calculus 10th Edition, Addison Wesley Publishing, Boston.

DAU 22202 Renewable Resources

Prerequisite Courses: None

Synopsis

The course focuses on the principles of renewable energy sources and applications, the benefit and disadvantages of the energy sources. The course discussess the fundamentals and principles of renewable energy such as solar energy, hydropower energy, wind energy, biomass and biofuel. The alternative energy such as wave energy, tidal energy, OTEC and geothermal energy and the energy storage and distributions are also discussed.

References*:*

1. John Twidell & Tony Weir. (2006). Renewable Energy Resources. 2nd ed. New York : Taylor and Francis Group. TJ808 .T84 2006
2. V.V.N Kishore. (2009). Renewable Energy Engineering and Technology. Principle and Practice. Earthscan, London. TJ808 .R52 2009
3. Sorensen, Bent. (2004). Renewable energy : its physics, engineering, use, environmental impacts, economy and planning aspects. 3rd ed. Burlington, MA : Elsevier Academic Press TJ163.2 .S67 2004
4. Godfrey Boyle.(2004). Renewable energy. Oxford University Press. TJ808 .R46 2004
5. Nelson, V. (2011). Introduction to renewable energy. Boca Raton, FL : CRC Press
   TJ808 .N44 2011

DAS 26302 Human Structure and Functions

Prerequisite Courses: None

Synopsis

The human structure and functions provides an overview of basic human anatomy includes human organization and regulation to achieve homeostasis, human organization and regulations, movements and support system, cardiovascular system, digestive system and nutrition, respiratory system, urinary system and excretion, nervous system structure and function, nerve signals and transmission, sense, hormones and the endocrine system and the human reproductive system and development.

References*:*

1. Campbell, N.A and Reece, J.B (2009). Biology 8th. ed. San Francisco, Pearson Benjamin Cummings. QH308.2 .C35 2009
2. Belk, C and Maier, V.B (2010). Biology : Science for Life. 3rd. ed. New Jersey, Pearson. QH306.2 .B44 2010
3. Mader, S.S (2012). Essentials of Biology. Boston. McGraw-Hill.. QH308.2 .M325 2012
4. Ross, F.C, Bailey, D and Enger, E.D (2009). Concepts in Biology. 13th. Ed. Berkshire, McGraw-Hill. QH308.2 .E53 2009
5. Raven, P.H (2011). Biology. Dubuque, IA : McGraw-Hill. QH308.2 .B58 2011

DAS 20903 Research and Statistical Methods

Prerequisite Courses: None

Synopsis

The topics discussed in the course are research fundamental, research topics, questions and designs, understanding the research area, resources for literature review, survey of findings and methodology of past research, research planning and instrument. The course also covers the sampling technique, data analysis of qualitative and quantitative research, the reliability and validity of collected data, and the correlation and regression analysis. The simple linear regression, least square method, coefficient of determination and multiple regressions are also explained.

References*:*

1. Nafisah@Kamariah Md. Kamaruddin el. al. (2013). Research and Statistics Methods. Pusat Pengajian Diploma, UTHM Publisher.
2. Bell, Judith (1999). Doing your research Project. Open University Press.
3. Neuman, William Lawrence. (2000). Qualitative and Quantities Approaches. Allyn & Bacon.
4. Creswell, J.W. (2002) Educational Research – Planning, Conducting and Evaluating Quantitave and Qualitaive Ressearch. Merill Prentice Hall.

DAU 21202 Food Quality Assurance and Safety

Prerequisite Courses: None

Synopsis

The course discusses on the food quality and safety, food laws and regulations, food standards, the ISO Quality Systems Standards, GMP, HACCP prerequisite programs, 7 principles of HACCP and the regulatory agencies in Malaysia.

References*:*

1. Besterfield, D.H. (2009). *Quality Control.*8th ed.Upper Saddle River, NJ : Pearson.
   TS156 .B47 2009
2. Luning, P.A. (2007). *Safety in the agri-food chain*. Wageningen Academic Publishers
   TX537.S33 2007
3. Alli, I. (2004). *Food quality assurance : principles and practices*. CRC Press.
   TP372.5 .A45 2004
4. Gould, W.A. & Gould, R.W. (2001). *Total Quality Assurance for the Food Industries*. 3rd. Ed.London : Woodhead Publishing.
   TP372.6.G68 2001
5. Schmidt, R.H. & Rodrick, G.E. 2003. *Food safety handbook*. Hoboken, NJ : John Wiley.
   TP373.5 .S35 2003

DAU 24102 Fundamentals of Health Physics

Prerequisite Courses: None

Synopsis

This course introduces students to the knowledge required in the field of science and technology. The topics discussed are radioactivity such as radioactivity transformation mechanism, the transformation kinetics and natural in radioactivity. Analyze the application of radiation matter interaction when interaction with types of particles radiation such as alpha rays, beta rays and gamma rays. The concept of unit and measurement in radiation such as dosimetry, units, source strength, gamma rays specifications, beta radiation, internal radioisotope sediment, mean lifetime – age determination with radioisotopes and uses. Discuss the effect of radiation in biological and human body system relate to dose response feature, basic internal biological dosimetry, dose limitation systems, unit of radiation dose Sievert and Rem. State the radiation safety guide according to standardisation organisation, radiation protection philosophy and basic criteria security radiation (ICRP). Determine the health physics instrumentation for radiation detectors, particles counters instrumentation, dose measurement instrumentation, neutron measurements and calibration. Syntheses types of radiation protector such external radiation protector, internal radiation protector and critical radiation protector.

References*:*

1. Anshika Tuteja. 2007. Fundamentals of Physical Chemistry. Discovery Publishing House, New Delhi.
2. Ira N. Levine. 2009. Physical Chemistry, 6th. Ed. McGraw Hill, New York.
3. Norbani Abdullah et al. 1998. Kimia Fizikal Asas Matrikulasi. Penerbit Fajar Bakti, Shah Alam, Malaysia.

DAU 25102 Final Year Project I

Prerequisite Courses: None

Synopsis

The student is required to do a research project in the final year of study in a field related to technology and applied science. The project is divided into two stages, Final Year Project 1 (FYP1) and Final Year Project 2 (FYP2). The FYP1 brings 2 credit hours carried out in the Semester II of the second year study. The student is required to prepare and present the proposal in the FYP1 Seminar held at the end of the semester.

References*:*

1. Thesis writing guideline, UTHM.
2. Guideline for Implementation of Diploma Engineering Project, UTHM

DAU 25304 Industrial Training

Prerequisite Courses: None

Synopsis

Students has to undergo an industrial training programme as a trainee assistant in any applied sciences field at any organization listed by the Centre of Diploma Studies for 10 weeks duration. During the period, the industrial supervisor will assess the student performance and at least once by the appointed supervisor form the Centre of Diploma Studies. The students will be trained by the agency and organization on site, planning, management, design, field investigation and
assessment in related industries.

References*:*

1. Buku Panduan Pelaksanaan Program Latihan Industri Universiti, UTHM

DAU 30203 Crime Scientific Investigation

Prerequisite Courses: None

Synopsis

The course covers the criminal investigation function, the evidence classification, Locard's exchange principle, note taking and report writing, Crown brief, the interviewing witnesses and victim, interrogation of suspects, the objective of crime scene investigation, the burning bridges theory of CSI, Locard's exchange principle, crime scene security scenario, crime scene search method, specialized investigative technique, informant management, informants, initial informant evaluation, intelligence information v. evidence, informant confidentiality and security.

References*:*

1. Bill Van Allen . (2007). Criminal Investigation. In seacrh of the truth. Pearson. Prentice Hall. HV8073 .V36 2007
2. Frank M. Schmalleger .(2006). Criminal justice today : an introductory text for the 21st
3. Century. New York. Prentice Hall. HV9950 .S35 2006
4. John Muncie. (2007). Criminal justice and crime control. London. SAGE. HV7419 .C74 2007
5. John Paul Wright, Stephen G. Tibbetts, Leah E. Daigle (2008). Criminals in the making : criminality across the life course.Los Angeles , SAGE. HV6080 .W54 2008.
6. Evans C. (2009). Crime Scene Investigation. Chelsea House. HV8073 .E92 2009

DAU 32303 Environmental Chemistry

Prerequisite Courses: None

Synopsis

Environmental science is the foundation of the increased environmental understanding today and chemistry plays a major role in this. The properties and reactions of substances in the environment can profoundly influence the world we live in. 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

DAU 33202 Herbs, Vitamins and Minerals

Prerequisite Courses: None

Synopsis

This course introduces students to the use of herbs as medicines. The discussion includes introduction to natural products and their chemistry, taxonomy, the selection of plants, harvesting and extraction of active components. Classification of traditional herbs, herbal formulation and preparation, dosage and herbal remedies for several common diseases are also discussed. A brief description on traditional herbs vs modern medications, natural healing and herbal cleansing as well as plant-based vitamins and minerals.

References*:*

1. Xu, R. (2012). *Introduction to natural products chemistry*. Boca Raton : CRC PressQD415 .I58 2012
2. Liu, W.J.H. (2011). *Traditional herbal medicine research methods : identification, analysis, bioassay, and pharmaceutical and clinical studies.*Hoboken, NJ : John WileyRM666.H33 .T72 2011
3. Colegate, S.M. (2008). *Bioactive natural products : detection, isolation, and structural determination.* 2nd. Edition. Boca Raton : CRCQD415 .B56 2008
4. Aman, R. (2008). *Tanaman berkhasiat ubatan*. Kuala Lumpur : Dewan Bahasa dan PustakaQK99 .R84 2008
5. Duke, J.A. (2002). *Handbook of medicinal herbs.* 2nd. Edition . Boca Raton, FL : CRC PressQK99.A1 .D84 2002

DAU 34203 Physics for Life Science

Prerequisite Courses: None

Synopsis

This course introduces students to the knowledge required in the field of science and technology. The topics discussed areoptical lenses and devices such as optical lenses, human eye and optical devices such as magnifying glass andoptical microscope. Analyze the application of imaging wave optics by using the new light microscopes, optical activity in applicationof light polarization, Electron microscope, X-rays, diffraction and computed tomography (CT). Study the concept ofspecial relativity and quantum physics such as mass-energy and dynamics. Analyze the wave function from the Schrodinger equation, uncertainty principle of Scanning Tunneling Microscope. Syntheses the structure ofmatter such as the simple hydrogen atom, quantum numbers, spins, according to the Pauli Exclusion Principle, theperiodic table, spectroscopy of biomolecules by using lasers and their applications in biologyand medicine. Determine the nuclear physics and medical applications according to physical of nuclear size, structure, forces, bindingenergy and nuclear stability. Determine type of radiation and its measurement, half-life and radioactive. Discuss the dosimetry effect of radiation in biological systems. Synthesis types of radioisotopes and nuclear medicine.

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. Newman, J (2008). Physics of the life sciences. New York: Springer. ISBN 978-0-387-77258-5
3. Scheck, F (2007). Quantum Physics. New York: Springer. QC174.12 .S35 2007
4. Brehm, John J., Mulim, William J. (1989). Introduction to Structure of Matter: A Course in Modern Physics. Canada: John Wiley & Sons. QC21.2 .B73 1989 N1
5. Le Bellec M. (2006). Quantum Physics. Cambridge University press. QC174.12 .L33 2006

DAU 35203 Final Year Project II

Prerequisite Courses: None

Synopsis

The student is required to do a research project in the final year of study in a field related to technology and applied science. The project is divided into two stages, Final Year Project 1 (FYP1) and Final Year Project 2 (FYP2). The FYP2 brings 3 credit hours carried out in the Semester I of the third year study. The student is required to prepare and present the final report of the project in the FYP2 Seminar held at the end of the semester.

References*:*

1. Panduan Perlaksanaan Projek Sarjana Muda/Diploma UTHM.
2. Panduan Perlaksanaan Projek Diploma PPD.
3. Peraturan Akademik UTHM.
4. Panduan Penulisan Tesis UTHM.

DPK 20103 Business and Entrepreneurship

Prerequisite Courses: None

Synopsis

This course aims to provide basic knowledge and the understanding of entrepreneurship subject and business management. The course is conducted interactively to generate and stimulate students' interest in entrepreneurship.

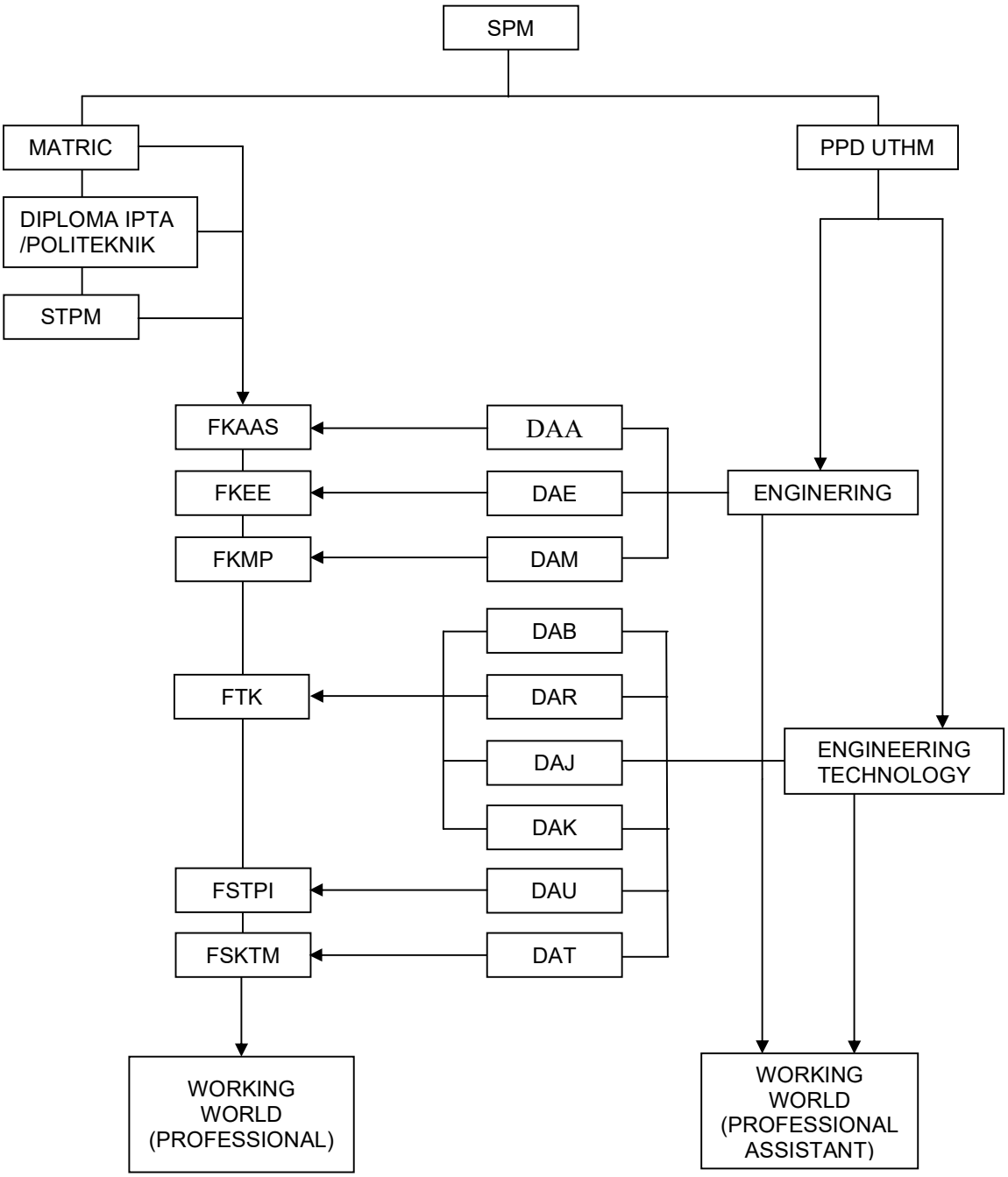
References*:*

1. Universiti Teknologi Mara. Entrepreneurship Study Group (2004). *Fundamentals of entrepreneurship. Rev. ed*. Prentice Hall. (HB615.F86 2004)
2. Norman M. Scarborough (2010), *Essentials of Entrepreneurship and Small Business Management, Sixth Edition*. Pearson. (HD62.7.S32 2010)
3. Rosli Mahmood etl. (2010), *Prinsip-prinsip Keusahawanan:Pendekatan Gunaan. 2nd ed.* Cernage Learning Asia Pte Ltd. (HB615.P74 2010)
4. Bessant J. Tidd, Joseph. (2011). *Innovation and Entrepreneurship. 2nd ed*. West Sussex: Wiley. (HD53.B48 2011)
5. Mariotti, Steve.(2012). *Entrepreneurship & Small Business Management*, Boston:Prentice Hall.(HD62.7.M38 2012)

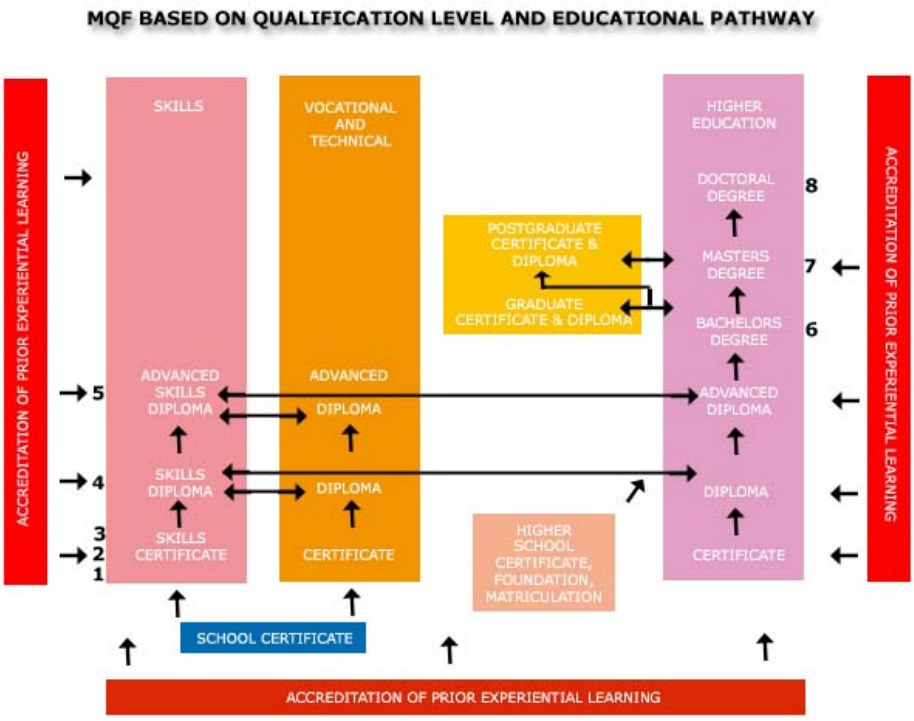
Career and Further Education Prospect

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

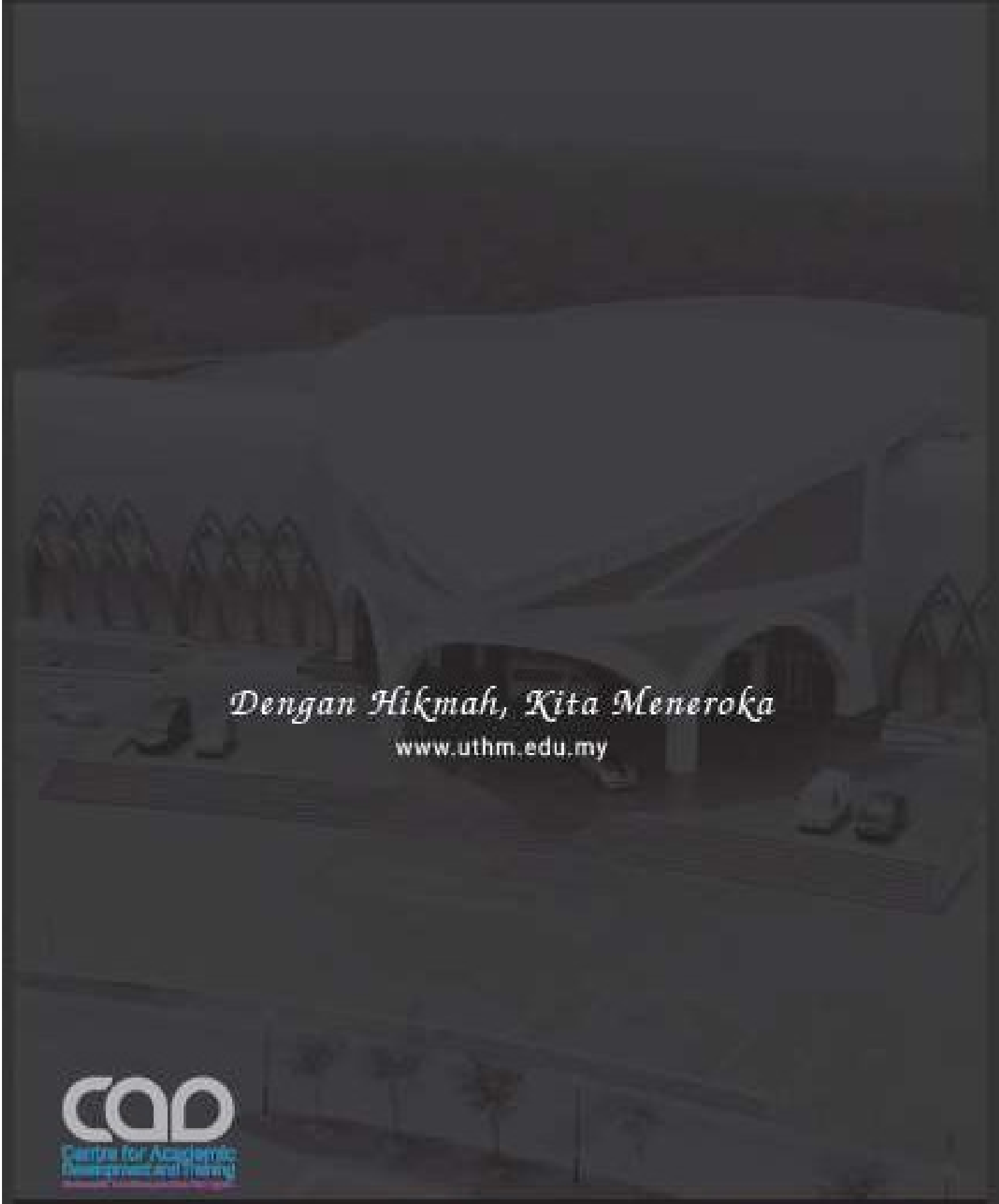


Malaysian Qualification Framework

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 rowspan="2">7</td><td>Masters Degree</td></tr>
<tr><td>Postgraduate Certificate & Diploma</td></tr>
<tr><td rowspan="2">6</td><td>Bachelors Degree</td></tr>
<tr><td>Graduate Certificate & Diploma</td></tr>
<tr><td>5</td><td>Advanced Diploma</td><td>Advanced Diploma</td><td>Advanced Diploma</td></tr>
<tr><td>4</td><td>Diploma</td><td>Diploma</td><td>Diploma</td></tr>
<tr><td>3</td><td>Skills Certificate 3</td><td rowspan="3">Vocational and Technical Certificate</td><td>Certificate</td></tr>
<tr><td>2</td><td>Skills Certificate 2</td><td rowspan="2"></td></tr>
<tr><td>1</td><td>Skills Certificate 1</td></tr>
</table>

Malaysian Qualification Framework



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