CENTRE FOR DIPLOMA STUDIES
CEDS

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

UTHM
Universiti Tun Hussein Onn Malaysia

ACADEMIC PROFORMA 2025/2026

DIPLOMA IN INFORMATION TECHNOLOGY

QS WORLD UNIVERSITY RANKINGS 2026 RANKED

WE ARE RANKED #1001-1200
(Overall 8,467 Evaluated Institutions)
Malaysia ranked #28
QS World University Rankings 2026

QS WORLD UNIVERSITY RANKINGS ASIA 2025 RANKED

248
Universiti Tun Hussein Onn University of Malaysia (UTHM)

PUSAT PEMBANGUNAN AKADEMIK DAN TVET
CENTER FOR ACADEMIC AND TVET DEVELOPMENT
UNIVERSITI TUN HUSSEIN ONN MALAYSIA

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

Contents

Foreword by the Vice Chancellor

Assalammualaikum Warahmatullahi Wabarakatuh and greetings.

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

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

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

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

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

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

"With Wisdom, We Explore"

Best wishes.

PROFESSOR. DR. MAS FAWZI BIN MOHD ALI
Vice-Chancellor
Universiti Tun Hussein Onn Malaysia

Foreword by the Deputy Vice Chancellor (Academic and International)

Assalammualaikum Warahmatullahi Wabarakatuh and Salam Sejahtera, Salam Malaysia Madani.

Firstly, congratulations and a warm welcome to all new students joining Universiti Tun Hussein Onn Malaysia (UTHM) for the academic session 2025/2026. Rest assured, at UTHM, we stand out with unique qualities and offerings that set us apart from others. We are fully committed to upholding our promises and ensuring you receive an exceptional educational experience. We are committed to your success with unwavering dedication, striving tirelessly to exceed your expectations.

Secondly, I extend my gratitude and congratulations to the Centre for Academic Development and TVET (CAD) and the faculties for their successful publication of this academic proforma. It is indeed a valuable resource that offers concise information about the various programs available. This proforma offers concise information about the various programs available and serving as a guiding tool for students, as well as assisting them in effectively planning their learning journey. By providing essential details and insights, it empowers students to make knowledged-based decisions and navigate their educational paths with clarity.

In addressing the nation's academic priorities, the Ministry of Higher Education Malaysia (MoHE) has recently initiated enhancements to academic infrastructures and infostructures, as well as emphasizing digitalization. These efforts are geared towards achieving conducive, safe, efficient, and high-quality education, while maintaining innovation, flexibility, and global competitiveness.

Additionally, to sustain students' interest and enrollment, several impactful steps being taken including hybrid programs and shortening the duration of study. Therefore, as an institution under MoHE, please anticipate our efforts toward these beneficial programs. Furthermore, we remain agile and committed to promoting Technical and Vocational Education and Training (TVET)-based academics as part of our vision to transform into a Global Technopreneur University (GTU) by 2030.

From our specific perspective, it is crucial to enhance, strengthen, and uphold our own programs and human capital. All our programs, totaling 110, are accredited by the Malaysian Qualification Agency (MQA) and their respective professional bodies. This accreditation is maintained through our qualified staff, both academic and non-academic, who undergo continuous upskilling and reskilling initiatives.

In conclusion, I sincerely hope that the initiatives implemented by UTHM will offer you invaluable experiences in exploring and acquiring competencies. With the introduction of this proforma, I envision outstanding academic accomplishments and success for each of you. This stage signifies a pivotal opportunity for you to positively impact both our nation and the global community.

Best wishes,

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

Foreword from Dean

Assalamualaikum Warahmatullahi Wabarakatuh and Warm Greetings

Congratulations and a warm welcome to Universiti Tun Hussein Onn Malaysia (UTHM), a distinguished leader in TVET higher education. We are honored to have you join the Centre for Diploma Studies (CeDS), where we are committed to nurturing you into skilled semi-professionals in the fields of engineering, science, and technology.

At CeDS, our core mission is to manage and operate high-quality diploma programs that align with the dynamic needs of today's industries. Our vision is to produce graduates who will actively contribute to Malaysia's national development, equipped with a broad, well-rounded academic foundation. We offer seven diverse programs in civil engineering, mechanical engineering, electrical engineering, chemical engineering, applied science, information technology, and animation technology, each designed to meet the latest industry trends.

In response to the growing demands of the digital economy, Industry 4.0 (IR 4.0), and the adoption of Artificial Intelligence (AI) technologies, we have continuously aligned our programs to ensure that they provide a comprehensive education that bridges the skills gap in the workforce. As Malaysia advances in its digital transformation agenda outlined in the 12th and 13th Malaysia Plans (RMK12 & RMK13), we strive to ensure that our graduates are equipped with the technical know-how and problem-solving capabilities needed to succeed in a technology-driven future.

All of our diploma programs are accredited by the Malaysia Qualifications Agency (MQA), ensuring the highest standards of education. Moreover, four of our engineering programs have received the prestigious accreditation from the Board of Engineers Malaysia (BEM), further reinforcing the quality and relevance of the education we offer.

UTHM is renowned not only for its world-class teaching facilities but also for its commitment to creating a conducive learning environment. Our campus infrastructure, which is continuously upgraded, includes state-of-the-art libraries, residential colleges, cafeterias, sports facilities, wireless internet, and more. These facilities are designed to support your academic journey and personal growth.

As you embark on your educational journey at UTHM, we encourage you to utilize this proforma as a guide to help you plan your studies and make the most of the opportunities available to you. Together, let us prepare for the future and contribute to shaping Malaysia's digital landscape.

Wishing you success in your studies and beyond.

"WITH WISDOM WE EXPLORE"

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

Vision

To be a global technical university in sustainable technology and transportation

Mission

Provide technical solution for industry and community based on tauhidic paradigm

Education Philosophy of University

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

Logo of University

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

Symbolism:

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

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

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

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

Chancellor

HIS ROYAL HIGHNESS
TUNKU ISMAIL IBNI SULTAN IBRAHIM
Tunku Mahkota Johor

Pro-Chancellor

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

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

Board of Directors of University

Chairman

YBhg. Dato' Sri Ibrahim bin Ahmad

Members

YBhg. Prof. Dr. Mas Fawzi bin Mohd Ali
Vice-Chancellor, Universiti Tun Hussein Onn Malaysia

Mrs. Mahfuzah binti Baharin
Deputy Under-Secretary,
(Sector of Tax Incentive & Sectoral) TSBC (GCS) Tax Division
Ministry of Finance Malaysia
YB. Dato' (Dr.) Haji Nooh bin Gadot
Advisor, Johor Islamic Religious Council
YBhg. Datuk Md Jais bin Haji Sarday
Board Member, Universiti Tun Hussein Onn Malaysia

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

YBhg. Datuk Haji Mohd Lassim bin Burhan
Board Member, Universiti Tun Hussein Onn Malaysia
YBrs. Ir. Ts. Abdul Rahman bin Bahasa
Chief Executive Officer, Recove Group
YBrs. Encik Hasry bin Harun
Chief Executive Officer, Malaysia Rail Development Corporation

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

YBrs. Mohamad Irza bin Dahari @ Zahari
Administration and Diplomatic Officer, Department Of Higher Education

Secretary

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

Members of Senate

Chairman

Prof. Dr. Mas Fawzi bin Mohd Ali
Vice Chancellor

Members

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

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

Prof. Ts. Dr. Abdul Rasid bin Abdul Razzaq
Deputy Vice Chancellor (Student Affairs and Alumni)

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

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

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

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

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

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

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

Ts. Dr. Mohd Hasril bin Amiruddin
Dean, Faculty of Technical and Vocational Education

Prof. Ts. Dr. Mohd Farhan bin Md. Fudzee
Dean, Faculty of Computer Science and Information Technology

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

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

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

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

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

Prof. Dr.Abd Rahman bin Ahmad
Dean, Johor Business School

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

Assoc. Prof. Dr. Badaruddin bin Ibrahim
Director, Malaysia Research Institute for Vocational Education and Training

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

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

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

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

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

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

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

Prof. Dr. Ahmad Jais bin Alimin
Faculty of Mechanical and Manufacturing Engineering

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

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

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

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

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

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

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

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

Ts. Dr. Khalid bin Isa
Director, Student Development Centre

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

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

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

Mr.Ismail bin Harun
Bursar / Chief Financial Officer (CFO)

Mdm. Zaharah binti Abd Samad
Chief Librarian

Mdm. Norliah Binti Yaakub
Legal Advisor

Prof. Ir. Ts. Dr. Mohd Irwan bin Juki
Pengerusi Majlis Profesor Universiti

Centre for Diploma Studies

Centre Vision

Excellent in providing multidisciplinary education in science and technology

Centre Mission

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

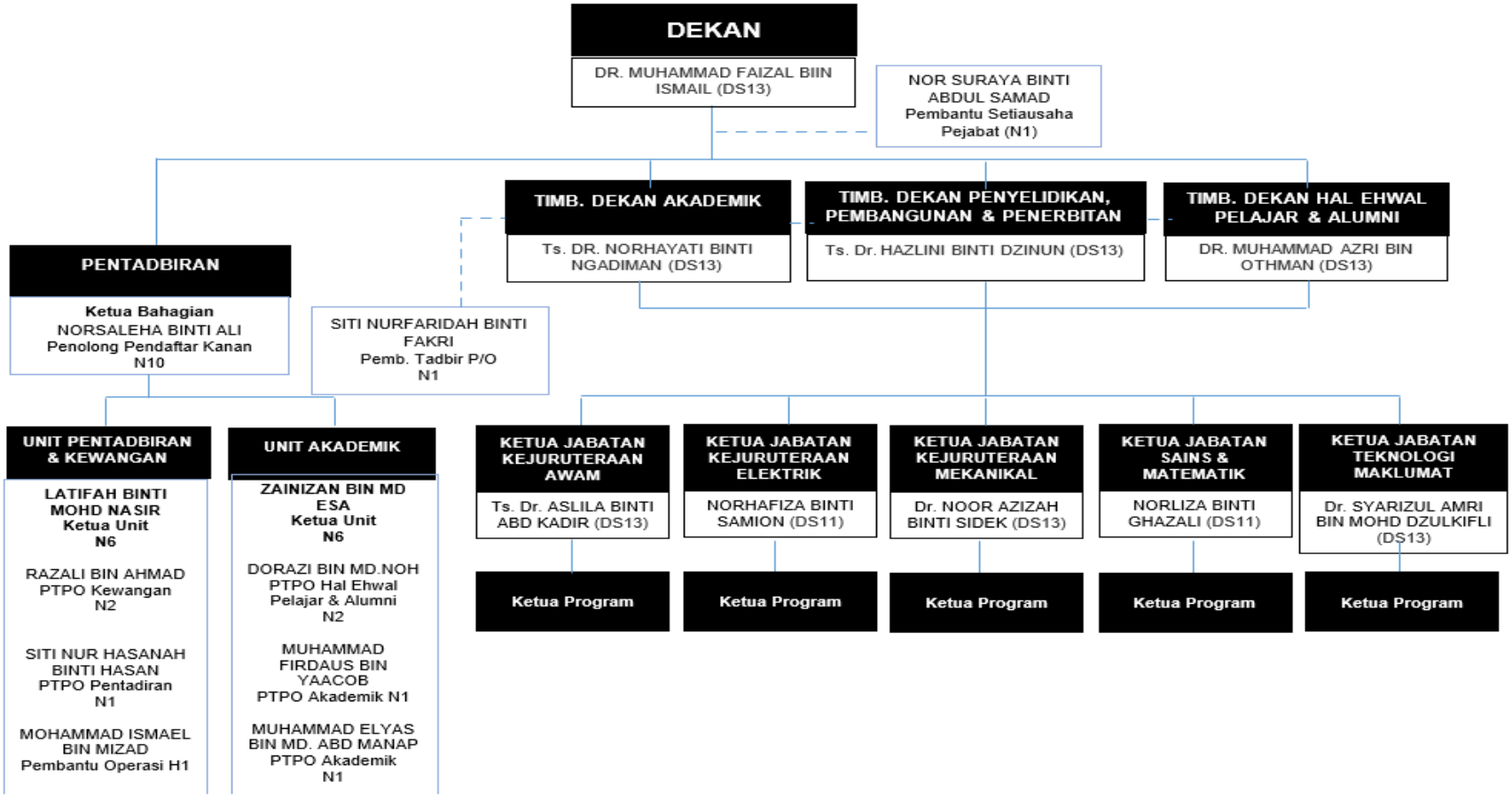
Diploma programmes had been offered in UTHM since the establishment of Pusat Latihan Staf Politeknik (PLSP) in 1994. It started with only three programmes which are managed by the respective departments. All were transferred to the corresponding faculties when Kolej Universiti Teknologi Tun Hussein Onn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

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

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

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

CARTA ORGANISASI PUSAT PENGAJIAN DIPLOMA



CeDS Organization Chart

Centre External Examiner and Industrial Advisor

Department of Information Technology

Programme External Examiner

Assoc Prof. Dr. Mohd Yazid bin Idris
PhD Network Security (UTM), MSc. Software Engineering (UTM), BSc. Computer Science (UTM)

Programme Industrial Advisor

Mr. Nizamuddin bin Ariffin
Head of Business Architecture
Petronas Dagangan Berhad (M)

Staff Directory

Administration

Dean
Dr. Muhammad Faizal bin Ismail
PhD. (Electrical Engineering) (UTM),
M. Eng. (Electrical Engineering) (UTM),
B. Eng. (Hons) (Electrical Engineering-Telecommunication) (UTM)

Deputy Dean (Academic)
Ts. Dr. Norhayati Binti Ngadiman
PhD. (Enviroment) (UKM),
Master of Technical and Vocational Education (UTHM),
B. Eng. (Mineral Resources) (USM)

Deputy Dean (Student Affairs and Alumni)
Dr. Muhammad Azri Bin Othman
PhD. (Manufacturing Engineering) (UTeM),
M.Eng (Manufacturing System) (UPM),
B. Eng. Manufacturing (Robotic & Automation) (UTeM)

Deputy Dean (Development , Research and Publication)
Ts. Dr. Hazlini binti Dzinun
PhD (Gas Engineering) (UTM),
M. Eng. (Civil Engineering–Environment) (UTM),
B. Eng. (Hons)(Chemical Engineering) (UTM)

Office Secretary
Nor Suraya binti Abdul Samad
BSc. Computational Mathematics(UiTM),
Diploma in Computer Science (UiTM)

Administrative Assistant (Deputy Dean Secretary)
Siti Nurfaridah binti Fakri
Dip. (Hotel & Catering Management) (Politeknik Sultan Ibrahim)

Senior Assistant Registrar
Puan Norsaleha Binti Ali
M. Business Administration (UiTM), Bach. (Hons). Business Management (Finance),
Diploma in Banking (UiTM)

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

Assistant Administrative Officer (Administrative and Finance)
Zainizan bin Md Esa
Dip. (Islamic Management & Administration) (Kolej Tek. Islam Antarabangsa Melaka)

Administrative Assistant (Clerical & Operation) Student Affairs and Alumni
Dorazi bin Md Noh
Malaysian Certificate of Education SMK Dato' Sulaiman,

Administrative Assistant (Clerical & Operation) Administrative and Finance
Razali bin Ahmad
Malaysian Certificate of Education Sek Tinggi Batu Pahat

Administrative Assistant (Clerical & Operation) Administrative
Siti Nur Hasanah binti Hasan
Diploma in Science UiTM

Administrative Assistant (Clerical & Operation) Academic
Muhammad Elyas Bin Md. Abd Manap
Malaysian Certificate of Education (SMK Taman Indah, Tampin)

Administrative Assistant (Clerical & Operation) Academic
Muhammad Firdaus bin Yaacob
Malaysian Certificate of Education (SMK KhirJohari)

General Office Assistant
Mohammad Ismael Bin Mizad
Lower Secondary Assesment, Sek Men. Kebangsaan Dato' Bentara Luar

Department of Information Technology

Academic Staff

Head of Department
Dr. Syarizul Amri bin Mohd Dzulkifli
PhD. Information Technology (UTHM), MSc. Information Technology Management (UTM), BSc. Computer (UTM)

Ts. Inv. Dr. Rafizah binti Mohd Hanifa
P. Tech., PhD. Electrical Engineering (UTHM), MSc. Information Technology (UUM), BSc. Computer Science (USM), Post Graduate Diploma in Higher Education (UTHM)

Ts. Inv. Dr. Shelena a/p Soosay Nathan
P. Tech., PhD. Information Technology (UUM), MSc. Information Technology (UUM), BSc. (Information Technolgy) (UUM), Post Graduate Diploma in Higher Education (UTHM)

Dr. Hazwani binti Rahmat
PhD. Software Engineering (UPM), MSc. Computer Science (UPM), BSc. Information Technology (UTHM), Dip. Information Technology (KUITTHO)

Dr. Muhamad Hanif bin Jofri
PhD. Information Technology (UTHM), MSc. Information Technology (UTHM), BSc. Information Technology (UTHM)

Ts. Dr. Noordiana binti Kasim @ Kassim
P. Tech., PhD. Mechanical Engineering (UTHM). MSc. Mechanical Engineering (UTHM), BSc. Information Studies (UiTM), Post Graduate Diploma in Higher Education (UTHM)

Dr. Zuraida binti Ibrahim
PhD. Educational Technology (UTHM), MA Visual Communication and New Media (UiTM), BSc. Information Technology (UKM)

Ts. Dr. Mazniha binti Berahim
P. Tech., PhD Information Technology(UTHM), MEd. Mathematics (UTM), BSc. Computer Science (UTM), Dip. Information Technology (UTM)

Ts. Mohd Hatta bin Mohamed Ali @ Md Hani
P. Tech., MSc. Information Technology (UiTM), BSc. Software Engineering (UPM), Dip. Computer Science (UPM), Post Graduate Diploma in Higher Education (UTHM)

Ts. Rosni binti Ramle
P. Tech., MSc. Information Technology (UiTM), BSc. Business Computing (UiTM), Post Graduate Diploma in Higher Education (UTHM)

Inv. Juliana binti Mohamed
MSc. Information Technology (UTHM), BSc. Multimedia (UUM)

Hj. Hannes bin Masandig
MSc. Information Technology (UiTM), Adv. Dip. Mechanical Engineering (UiTM), Dip. Mechanical Engineering (UTM)

Mr. Abdul Halim bin Omar
MSc. Information Technology (UTHM), BSc. Information Technology (UTHM)

Miss Bakhreza binti A. Talip
MSc. Interaction Design (University of Queensland), BSc. Computer Science (UTM)

Mr. Fawwaz bin Mohd Nasir
MPhil. Computer Science (UTM), BSc. Computer Science (Hons) (UTM)

Mrs. Mariam binti Abdul Hamid
MSc. Management Information System (UiTM), BSc. Information Technolgy (UiTM), Post Graduate Diploma in Higher Education (UTHM)

Mr. Mohd Suhaimi bin Md. Yasin
MA.Phil (Seni Kreatif) (UMS), BA.Hons (Seni Kreatif) (UMS)

Mr. Mokhtar bin Yahya
MA. Art and Design (Design Technology) (UiTM), BA. Art and Design (Industrial Design) (UiTM), Dip. Art and Design (Industrial Design) (UiTM)

Dr. Rosfuzah binti Roslan
PhD. Educational Technology (UPM), MSc. Computer Science (UTM), BSc. (Computer) (UTM), Dip. (Computer Science) (UTM)

Mr. Muhammad Fazrulhelmi Bin Ahmad
MEd. Technical and Vocational (UTHM), BEd. Vocational (Multimedia Creative) (UTHM), Dip IT (Network System) (Politeknik Mersing)

Mr. Mohamad Fazirul Rafiq Bin Afandi
MSc Edu (Multimedia) (UPSI), BSc Design (Animation) (UPSI), Dip. Computer Graphic Design (Kolej Poly-Tech MARA Batu Pahat)

Mrs. Mizani Binti Mohamad Madon
MSc Computer Science (UTHM), BSc Computer Science (UTHM)

Ms. Fauziah Binti Abdul Razak @ Lapochik
MSc Information Security (UTM), BSc Industrial Engineering (UNISEL), Dip. Information Technology **(**UTM)

Dr. Junita Binti Sulaiman
PhD Edu Technical and Vocational (UTHM), MEd. Technical and Vocational (UTHM), BSc. Computer Science (Software Development) (UTeM), Dip. In IT(Politeknik Johor Bahru)

Ms. Amirah Barieah Binti Amran
MEd. Technical and Vocational (UTHM), BSc. Computer Science (UTeM)

Technical Staff

Tc. Muhd Amin bin Saad
Dip. Electronic Engineering (Computer) (Politeknik Sultan Idris Shah Selangor)

Mr. Ammirul Daniel bin Azizan
Dip. Electronic Engineering (Communication) (Politeknik Ibrahim Sultan)

Mr. Mohd Niza bin Shamsudin
Dip. Electronic Engineering (Politeknik Ibrahim Sultan), Cert. Electric and Electronic Engineering (Politeknik Kota Melaka)

Mr. Muhamad Hisamuddin bin Pasori
Cert. Electric and Electronic Engineering (Politeknik Johor Bahru)

Programme Name

Diploma in Information Technology (DAT)

Programme Aims

To produce a semi-professional workforce in solving ICT problems whether in the public, private or self-employed sectors. The program also prepares students to continue their studies to a bachelor's degree at a local or foreign university.

Programme Educational Objectives (PEO)

PEO 1 Prepare computer technicians with basic numeracy and technical skills to solve well-defined and routine computing problems in line with industry requirements.

PEO 2 Prepare computer technicians who possess supervisory abilities, as well as strong interpersonal and communication skills, enabling them to effectively engage in diverse environments.

PEO 3 Prepare computer technicians who have a commitment to lifelong learning and an entrepreneurial mindset for self and career development.

PEO 4 Prepare computer technicians who are committed to ethical conduct and professional practices in the organisation and society.

Programme Learning Outcomes (PLO)

PLO 1 Explain concepts, principles and theories relating to Information Technology.

PLO 2 Apply design and architecture to Information Technology solutions using appropriate tools and techniques.

PLO 3 Perform support and development tasks on Information Technology solutions related to job functions.

PLO 4 Demonstrate effective interaction with stakeholders and society in a work-related environment.

PLO 5 Exhibit effective communication with stakeholders and society in a work-related environment.

PLO 6 Use appropriate digital tools on computing related to job functions.

PLO 7 Apply appropriate numerical skills in computing related to job functions.

PLO 8 Demonstrate supervisory skills and responsibility in executing instructions related to job functions.

PLO 9 Commit to principles of lifelong learning in academic and career development.

PLO 10 Demonstrate an entrepreneurial mindset in performing tasks.

PLO 11 Commit to professional and ethical practices in executing instructions related to the job and organisational functions.

Curriculum Structure

Table 1: Summary of Curriculum for Diploma in Information Technology

Year	Semester	Course Code	Courses	Credit	Total
	Special	UQU 11402	Integrity dan Anticorruption	2	7
		UHB 11*02	Foreign Language	2	
		DAT 10003	Ethics and Safety in Computing	3	
1	I	UQ* 1***1	Co-Curriculum 1	1	20
		UQI 10402	Islamic Studies / Moral Studies	2	
		UHB 13002	Introduction to English Communication	2	
		DAT 10203	Discrete Mathematics	3	
		DAT 11103	Algorithm Design	3	
		DAT 10703	Computer Architecture	3	
		DAT 10903	Operating Systems	3	
	II	UQ* 1***1	Co-Curriculum 2	1	20
		UQI 11402	Philosophy and Current Issues	2	
		UHB 23002	English for Career Development	2	
		DAT 11203	Algebra and Calculus	3	
		DAT 11503	Programming Fundamentals	3	
		DAT 10803	System Analysis and Design	3	
		DAT 21603	Intelligent User Experience Design	3	
2	I	DAT 20803	Cyberpreneurship	3	19
		DAT 20103	Database	3	
		DAT 21303	Web Development	3	
		DAT 21503	Mobile Application	3	
		DAT 21703	Statistics and Probability	3	
		DAT 21803	Object Oriented Programming Languages	3	
		DAT 21101	Diploma Project 1	1	
	II	DAT 22503	System Paradigms	3	16
		DAT 22103	Cloud Computing	3	
		DAT 22303	Advanced Networking	3	
		DAT 22203	Integrated System Technology	3	
		DAT 22104	Diploma Project 2	4	
3	I	DAT 30108	Industrial Training	8	8
Overall Total Credit					**90**

University Courses

Table 2: Summary of University Courses

Year	Semester	Course Code	Courses	Credit	Total
	Special	UQU 11402	Integrity dan Anticorruption	2	4
		UHB 11*02	Foreign Language	2	
1	I	UQ* 1***1	Co-Curriculum 1	1	5
		UQI 10402	Islamic Studies / Moral Studies	2	
		UHB 13002	Introduction to English Communication	2	
	II	UQ* 1***1	Co-Curriculum 2	1	5
		UQI 11402	Philosophy and Current Issues	2	
		UHB 23002	English for Career Development	2	
Overall Total Credit					**14**

Synopsis of University Courses

UQU 11402 Integrity and Anticorruption

Synopsis

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

References

1. Mohamad Tarmize Abdul Manaf (2020). Nota Pencegahan rasuah. Bahagian Pendidikan Masyarakat, Suruhanjaya Pencegahan Rasuah Malaysia. Putrajaya.
2. Mohamad Tarmize Abdul Manaf et al. (2020). Kursus Integriti dan Rasuah IPT. Bahagian Pendidikan Masyarakat, Suruhanjaya Pencegahan Rasuah Malaysia. Putrajaya.
3. Mohd Firdaus Ramlan (2021). Tumbuk Rusuk: Pengkisahan Dari Tirai Besi. Akademi Kajian Rantau Nusantara Akar. Batu Caves, Selangor.
4. Pusat Governans, Integriti dan Antirasuah Nasional (2019). Pelan Antirasuah Nasional 2019-2023. Jabatan Perdana Menteri, Putrajaya
5. Syed Hussein Alatas (1999). Corruption and the Destiny of Asia. Simon and Schuster Asia
6. Syed Hussein Alatas. (2009). Rasuah: Sifat, Sebab dan Fungsi. Kuala Lumpur: Dewan Bahasa dan Pustaka.
7. Zulkanain Abdul Rahman, Ahmad Kamal Ariffin Mohd Rus & Noor Ain Mat Noor (2017). Sejarah Perjuangan SPRM: Satu Perjalanan. Universiti Malaya, Kuala Lumpur.

UHB 11*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

UHB 13002 Introduction to English Communication

Synopsis

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

References

1. Argentar, D. M., Gillies, K. A. N., Rubenstein, M. M., & Wise, B. R. (2020). Reading and writing strategies for the secondary English classroom in a PLC at work: A guide to closing literacy achievement gaps and improving student ELA standards skill development. Solution Tree.
2. Bottomley, J., Maude, K., Pryjmachuk, S., & Waugh, D. (2019). Communication skills for your education degree. Critical Publishing.
3. Brownlie, F. (2019). Grand conversations, thoughtful responses: A unique approach to literature circles. Portage & Main Press.
4. Raymond Murphy (2019). English Grammar in Use Books and Interactive eBooks 5th edition: A self- study Reference and Practice Book for Intermediate Learners of English (5th). Cambridge University Press.

UHB 23002 English for Career Development

Prerequisite Course: UHB 13002 Introduction to English Communication

Synopsis

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

References

1. Md. Zamin, A. A., et al. Workplace Communications for Graduating Students: A Quickguide, ISBN978-967-19771, Printed by Ultimate Print Sdn Bhd.
2. Shivananda,S., Doddawad, V. G. The Usefulness Of Hybrid Platform Meetings For Research Ethics Committees Review Meetings. Volume 127, 2022, ISSN1368-8375. https://doi.org/10.1016/j.oraloncology.2022.105811.
3. Standaert, W., Muylle, S., Basu, A. Business Meetings in A Postpandemic World: When and How to Meet Virtually. Volume 65, Issue 3, 2022, Pages 267-275, ISSN 0007-6813, https://doi.org/10.1016/j.bushor.2021.02.047.
4. Standaert, W., Muylle, S., Basu, A. How Shall We Meet? Understanding The Importance of Meeting Mode Capabilities for Different Meeting Objectives. Volume 58, Issue 1, 2021, 103393, ISSN 0378-7206, https://doi.org/10.1016/j.im.2020.103393.
5. Termini, C. M., et al. Using Virtual Interviewing to Create A More Accessible Hybrid Academic Job Market. Volume 184, Issue 26, 2021, Pages 6217- 6221, ISSN 0092-8674, https://doi.org/10.1016/j.cell.2021.11.027.

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.

UQ* 101 Co-Curriculum I**

Synopsis

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

UQ* 101 Co-Curriculum II**

Synopsis

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

Synopsis of Centre Core Course

DAT 20803 Cyberpreneurship

Synopsis

This course is designed to provide students with the basic knowledge of entrepreneurship and cyberpreneurship as well as to increase students' interest in getting into cyber entrepreneurship. Besides that, it will increase the understanding and knowledge about cyber entrepreneurship encompassing commercialization, business idea creation, business proposal preparation, and financial and marketing strategies.

References

1. Mohd Nazri Khan, (2006). Cyberpreneurship. Pearson. Call Number: HB615 .M52 2006
2. Jack Ma, (2016). Jack Ma: Never Give Up (2016). Kanyin Publication. Call Number; HF5548.325.W65 2016.
3. E-Marketing: The Essential Guide to Marketing in a Digital World
   Link:
   https://ezproxy.uthm.edu.my/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=3508047&site=ehost-live&scope=site
4. Amazon Top Seller Secrets: Insider Tips From Amazon's Most Successful Sellers
   Link:https://ezproxy.uthm.edu.my/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=274189&site=ehost-live&scope=site
5. Dave Caffey, (2015). Digital business and E-commerce management : strategy, implementation and practice. Pearson Education Limited. Call Number ; HF5548.32 .C42 2015

Synopsis of Programme Courses

DAT 10003 Ethics and Safety in Computing

Synopsis

This course introduces students to computer ethics, health and social issues, reliability and safety of computer systems, protecting software and other intellectual property, issues on privacy, impact and computer technology control, as well as introducing professional codes of ethics.

References

1. Kauffman, K. D., & Rybicki, E. (2022). Legal Ethics (4th ed.). Delmar. ISBN: 978-0-357-62054-0.
2. Reynolds, G. W. (2019). Ethics in Information Technology (6th ed.). Cengage. ISBN: 978-1-337-40587-4. https://drive.google.com/file/d/1hjIDjEjU1bMVE-DMQe8H7HQ94vWUuhz-/view?usp=sharing
3. Holden, O. L., Norris, M. E., & Kuhlmeier, V. A. (2021, July). Academic integrity in online assessment: A research review. In Frontiers in Education (Vol. 6, p. 639814). Frontiers Media SA. https://www.frontiersin.org/articles/10.3389/feduc.2021.639814/full
4. Green, B. (2021). The contestation of tech ethics: A sociotechnical approach to technology ethics in practice. Journal of Social Computing, 2(3), 209-225. https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=9684741
5. Awari, G. K., Warjurkar, Sarvesh, V. (2022). Ethics in Information Technology : A Practical Guide. CRC Press. ISBN 10: 1032163798 / ISBN 13: 9781032163796
6. Occupational Safety and Health Act and Regulations. MDC Publishers Printer Sdn. Bhd. 2001. Call Number KPG1390.M34 2001 rw.

DAT 10203 Discrete Mathematics

Synopsis

This course introduces students to the rich mathematical structures that naturally describe much of the content of the computing area, many logical forms and mathematical thinking. It focuses on basic logic, sets, relations and functions, and graphs theory which integrates symbolic tools, graphical concepts, principles, proof techniques and numerical calculations to Information Technology.

References

1. Hanifa, R.M., Mohamad, S., Berahim, M., Mohd Nasir, F. (2024). Discrete Mathematics. Learning Module.
2. Rosen, K. H. (2019). Discrete Mathematics and its Applications (8th ed.). McGraw-Hill. ISBN: 978-1-259-67651-2.
3. [E-Book] Lipschutz, S. (2022). Schaum's Outline of Discrete Mathematics. McGraw Hill. https://www-accessengineeringlibrary-com.ezproxy.uthm.edu.my/content/book/9781264258802
4. Levin, O. (2019). Discrete Mathematics: An Open Introduction (3rd ed.). Open Textbook Library. ISBN: 978-1-79290-169-0.
5. Kwong, H. (2015). A Spiral Workbook for Discrete Mathematics. Open SUNY Textbooks. ISBN: 978-1-942341-16-1.

DAT 11103 Algorithm Design

Synopsis

This course emphasizes the design of algorithms for problem-solving, utilizing both textual and graphical representations. Students will be introduced to techniques for solving problems through a modular approach. The course aims to equip students with the skills to define, analyze, and design efficient algorithmic solutions.

References

1. Chaudhuri, A.B. (2020). Flowchart and Algorithm Basics: The Art of Programming. Mercury Learning and InforMation LLC. https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=6404903
2. Alsuwaiyel, M.H. (2016) Algorithms: design techniques and analysis .New Jersey: World Scientific.ISBN:9789814723640. Call Number: QA9.58 .A57 2016
3. Dubey, et al.(2023).Visualizing Algorithms: A Comprehensive Exploration of Sorting and Computational Problem-Solving. 2023 International Conference on Integrated Intelligence and Communication Systems (ICIICS), 1-6 Nov, 2023; Database: IEEE Xplore Digital Library.
4. Backhouse, R. (2011). Algorithmic Problem Solving. Wiley. ISBN: 978-0-470-68453-5. Call number: QA76.9.A43 .B32 2011.
5. Parnas, D. L (2001). Software fundamentals: Addison-Wesley, Language: English, Database: PTTA Library Catalog. Call Number: QA76.754 .P37 2001 N1.

DAT 10803 System Analysis and Design

Synopsis

This course introduces students to the essential concepts, skills, methodologies, techniques, tools, and perspectives required for systems analysis. It offers a practical approach to developing systems analysis and design skills. By the end of the course, students will be able to create a prototype design that addresses a real-life problem

References

1. Valacich, J.S.,George, J. F. 2020. Modern Systems Analysis and Design, Global Edition. 2nd Edition. eBook
2. Dennis,A., Wixom,B.,Tegarden,D. 2020. Systems Analysis and Design An Object-Oriented Approach with UML. 2nd Edition. *QA402 D464 2005
3. Wasson, Charles S. 2016. System Analysis, Design, and Development: Concepts, Principles, and Practices. 2nd Edition. QA76.9.S88. W37 2016
4. Paradice, D. 2010. Emerging Systems Approaches in Information Technologies: Concepts, Theories, and Applications. eBook Collection (EBSCOhost)

DAT 10903 Operating Systems

Synopsis

This course covers the essential components of a typical operating system and its services. Additionally, it explains the function of each manager and its role in coordinating system operational tasks.

References

1. Valacich, J.S.,George, J. F. 2020. Modern Systems Analysis and Design, Global Edition. 2nd Edition. eBook
2. McHoes, A. M. (2014). Understanding operating systems. 7th ed., Boston: Cengage Learning. [QA76.76.O63 .M46 2014].
3. Silberschatz, A., Gagne, G., & Galvin, P. B. (2021). Operating System Concepts (10th ed.). Wiley. ISBN: 978-1-119-80036-1.
4. Stallings, W. (2018). Operating Systems: Internals and Design Principles (9th ed.). Pearson. ISBN: 978-1-292-21429-0.
5. Halochkin O., Ivashko V. (2024) Basics of Operating Systems LAP LAMBERT ISBN-10 : 6207460979

DAT 11203 Algebra and Calculus

Synopsis

This course introduces the fundamental principles of algebra, forming the foundation for advanced mathematics disciplines. It emphasizes key concepts essential for understanding vector analysis, geometry, and differential and integral calculus. Additionally, the course covers the practical applications of differential and integral calculus in various contexts.

References

1. Moyer, Robert E., and Murray R. Spiegel. 2019. Schaum's Outline of College Algebra. 5th ed. New York: McGraw-Hill Education. https://www-accessengineeringlibrarycom.ezproxy.uthm.edu.my/content/book/9781260120769
2. Ryan, Mark. Calculus Essentials for Dummies, John Wiley & Sons, Incorporated, 2019. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5750072.
3. Gustafson, R.D. and Hughes, J. College Algebra. Boston, MA: Cengage Learning. 2017. ISBN:781305652231

DAT 11503 Programming Fundamentals

Synopsis

This course introduces students to the basic concepts of Computer Science and Programming. At the end of the semester, students are expected to be fairly good at basic concepts in Computer Science and proficient in computer programming using the imperative paradigm. The focus of the course will be on general programming principles/techniques, selected programming language will be the language to implement these concepts. Key procedural programming topics like variables, arrays, strings, functions, and pointers/references will be covered in detail.

References

1. Gaddis, T., Walters, J., & Muganda, G. (2022). Starting Out with C++: From Control Structures to Objects (10th ed.). Pearson.
2. Savitch, W. (2023). Problem Solving with C++ (10th ed.). Pearson.
3. Ebook.Tuleuov, Berik I.; Ospanova, Ademi B..2024 In: Beginning C++ Compilers: An Introductory Guide to Microsoft C/C++ and MinGW Compilers.:119-130; Berkeley, CA: Apress,
4. Malik, D. S. (2017). C++ Programming: From Problem Analysis to Program Design (8th ed.). Cengage Learning.
5. Ebook. Dmitrović, Slobodan.2023. In: Modern C++ for Absolute Beginners: A Friendly Introduction to the C++ Programming Language and C++11 to C++23 Standards. :3-3; Berkeley, CA: Apress

DAT 11003 Network and Data Communication

Synopsis

This course introduces students to the basic concepts of Computer Science and Programming. At the end of the semester, students are expected to be fairly good at basic concepts in Computer Science and proficient in computer programming using the imperative paradigm. The focus of the course will be on general programming principles/techniques, selected programming language will be the language to implement these concepts. Key procedural programming topics like variables, arrays, strings, functions, and pointers/references will be covered in detail.

References

1. Forouzan, B. A. (2021). Data Communications and Networking with TCP/IP Protocol Suite (6th ed.). McGraw-Hill. ISBN: 978-0-07-802209-8.
2. Stallings, W., & Case, T. (2013). Business Data Communications: Infrastructure, Networking and Security (7th ed.). Pearson. ISBN: 978-0-13-302389-3.
3. Stallings, W. (2014). Data and Computer Communications (10th ed.). Pearson. ISBN: 978-0-13-350648-8. Call number: TK5105 .S73 2014.
4. Comer, D. E. (2014). Computer Networks and Internets (6th ed.). Pearson. ISBN: 978-0-13-358793-7.
5. Comer, D. E. (2014). Computer Networks and Internets (6th ed.). Pearson. ISBN: 978-0-13-358793-7.

DAT 10703 Computer Architecture

Synopsis

This course introduces students to the fundamental of computer architecture, computer components and functions, data representation in computer systems, arithmetic logic operation, digital logic, input and output, memory organization and set instruction.

References

1. Clements, A. (2014). Computer Organization and Architecture: Themes and Variations. Cengage Learning. ISBN: 978-1-111-98704-6. Call number: QA76.9.C643 .C63 2014
2. Hennessy, J. L., & Patterson, D. A. (2019). Computer Architecture: A Quantitative Approach (6th ed.). Morgan Kaufmann Publishers. ISBN: 978-0-12-811905-1.
3. Null, L., & Lobur, J. (2019). The Essentials of Computer Organization and Architecture (5th ed.). Jones & Bartlett Learning. ISBN: 978-1-284-12304-3.
4. Stallings, W. (2022). Computer Organization and Architecture: Designing for Performance (11th ed.). Pearson Education Limited. ISBN: 978-1-292-42010-3.
5. Jan Friso Groote, Rolf Morel Julien Schmaltz Adam Watkins (2021) Modern Approach to Electronic Circuitry, Logic Gates, and Processors 1st ed. Springer

DAT 21703 Statistics and Probability

Synopsis

This course discusses the mathematical concepts of statistics and how they can be applied practically in IT. It covers Descriptive and Inferential statistics, Descriptive Measures, Random Variables, Special Probability Distributions, Estimation, Hypothesis Testing, and Simple Linear Regression and Correlation.

References

1. Fein, E. C., Gilmour, J., Machin, T., & Hendry, L. (2022). Statistics for Research Students. University of Southern Queensland. ISBN 978-0-6453261-0-9.
2. Hsu, Hwei P. 2020. Schaum's Outline of Probability, Random Variables, and Random Processes. 4th ed. New York: McGraw-Hill Education. https://www-accessengineeringlibrarycom.ezproxy.uthm.edu.my/content/book/9781260453812
3. Barbara Illowsky. (2020). Statistics. OpenStax. https://openstax.org/books/statistics/pages/1-introduction
4. Green, Don W., and Marylee Z. Southard, eds. 2019. Perry's Chemical Engineers' Handbook. 9th ed. New York: McGraw-Hill Education. https://www-accessengineeringlibrarycom.ezproxy.uthm.edu.my/content/book/9780071834087
5. William Navidi (2019). Statistics for Engineers and Scientists 5th Edition. McGraw-Hill Education
6. Spiegel, Murray R., and Larry J. Stephens. 2018. Schaum's Outline of Statistics. 6th ed. New York: McGraw-Hill Education. https://www-accessengineeringlibrarycom.ezproxy.uthm.edu.my/content/book/9781260011463

DAT 21803 Object Oriented Programming Languages

Synopsis

This course covers fundamental object-oriented programming (OOP), which introduces students to designing and creating programs using an object-oriented approach. This course focuses on classes, objects, inheritance, polymorphism, encapsulation, and abstraction. Students will learn to write modular and reusable code to solve simple real-world problems. Through hands-on practice with a programming language, students will gain coding, debugging, and testing skills. By the end of the course, students will be able to design and implement basic OOP effectively.

References

1. Steven F. Lott, & Dusty Phillips. (2021). Python Object-Oriented Programming: Build robust and maintainable object-oriented Python applications and libraries. Packt Publishing.
2. Parker, James R. (2021). Python - An Introduction to Programming (2nd Edition). Mercury Learning and Information. Retrieved from https://app.knovel.com/hotlink/toc/id:kpPAIPE002/python-an-introduction
3. [E-Book] Malhotra, D., and N. Malhotra.(2023). C++ Programming Fundamentals, Mercury Learning & Information, 2023. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=30302590
4. [E-Book] Hardin, Therese, et al. (2021). Concepts and Semantics of Programming Languages 2 : Modular and Object-Oriented Constructs with OCaml, Python, C++, Ada and Java, John Wiley & Sons, Incorporated. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=6690677.
5. [Journal] Amarif, M. (2023). Applying the genetic algorithm concept for determining the inheritance relationship between objects in object-oriented languages. In 2023 IEEE 3rd International Maghreb Meeting of the Conference on Sciences and Techniques of Automatic Control and Computer Engineering (MI-STA) (pp. 276–280). IEEE. https://doi.org/10.1109/MI-STA57575.2023.10169679. https://ieeexplore-ieee-org.ezproxy.uthm.edu.my/document/10169679
6. [Journal] Singh, N., & Nagowah, L. (2021). OOP codes: Teaching object-oriented programming concepts through a mobile serious game. In 2021 25th International Computer Science and Engineering Conference (ICSEC) (pp. 377–382). IEEE. https://doi.org/10.1109/ICSEC53205.2021.9684593. https://ieeexplore-ieee-org.ezproxy.uthm.edu.my/document/9684593.

DAT 20103 Database

Synopsis

This course covers database concepts, including file systems, database types, history, and models. It delves into the relational database model, SQL, data modeling, tables, and normalization. Effective database design techniques, network integration, web integration, and contemporary database advancements are also explored.

References

1. Hanifa, R.M., Mohd Nasir, F., Soosay Nathan, S. & Mohamad, S. (2022). Database. Learning Module.
2. Powell, G. (2020). Database Modeling Step-by-Step. Auerbach. ISBN: 978-0-367-42217-2.
3. Coronel, C., & Morris, S. (2019). Database Systems: Design, Implementation, and Management (13th ed.). C
4. engage. ISBN: 978-1-337-62790-0.
5. Paul, B. (2024). Database Management for Beginners: A Step-by-Step 2 in 1 Guide to Understanding Database Systems.
6. Shield, W. (2019). SQL QuickStart Guide: The Simplified Beginner's Guide to Managing, Analyzing, and Manipulating Data With SQL (Coding & Programming - QuickStart Guides)

DAT 21303 Web Development

Synopsis

This course provides an introduction to web development technologies and techniques. Students will learn the fundamentals of front-end and back-end web development, including HTML, CSS, PhP, JavaScript, and server-side scripting. The course will cover topics such as responsive design, web frameworks, and database integration

References

1. Ahmed, R. (2021). Full Stack Web Development for Beginners. ISBN: 979-8-7389-5126-8. Thomas, V. (2023). Database-Driven Web Development Fundamentals. Database: Springer Nature eBooks.
2. Thomas, V. (2023). Database-Driven Web Development Fundamentals. Database: Springer Nature eBooks.
3. Shaw, B. et al. (2023). Web Development with Django : A definitive guide to building modern Python web applications using Django 4. Database: IEEE Xplore Digital Library.
4. Tolaram, N. & Glynn, N. (2023). Full-Stack Web Development with Go : Build your web applications quickly using the Go programming language and Vue.js. Database: IEEE Xplore Digital Library.

DAT 20503 Mobile Application

Synopsis

This course introduces students to the principles and practices of mobile application development. Students will learn the fundamental concepts of mobile platforms, user interface design, and development techniques for creating applications on commonly used mobile operating systems such as Android besides integration of the application with Internet of Things services. The course will include hands-on exercises and projects to reinforce theoretical knowledge and practical skills.

References

1. Gookin, Dan, and Sandra Geisler. Android Tablets for Dummies, John Wiley & Sons, Incorporated, 2014. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=1707092.
2. DiMarzio, Jerome. Beginning Android Programming with Android Studio, John Wiley & Sons, Incorporated, 2016. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=4714030.
3. Nilanjan Dey, et al., Walter de Gruyter GmbH, 2019. The Internet of Everything : Advances, Challenges and Applications, ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5994776.
4. McLoughlin, Ian Vince. 2018. Computer Systems: An Embedded Approach. 1st ed. New York: McGraw-Hill Education. https://www-accessengineeringlibrary-com.ezproxy.uthm.edu.my/content/book/9781260117608
5. Arora, Sumeet, Ramachandra Gambheer, and Meenakshi Vohra. 2021. Design of Secure IoT Systems: A Practical Approach Across Industries. 1st ed. New York: McGraw Hill. https://www-accessengineeringlibrary-com.ezproxy.uthm.edu.my/content/book/9781260463095

DAT 21603 Intelligent User Experience Design

Synopsis

This course provides students with a comprehensive understanding of user experience design principles, human factors, effective interface design, application domain considerations, affective user experiences, human-centered evaluation, assistive technologies, and user advocacy. Students will learn how to create impactful and accessible user experiences across various application domains with artificial intelligent essentials.

References

6. Don Norman (2013), The Design of Everyday Things, Basic Books; Revised edition (November 5, 2013), ISBN-10 : 9780465050659, ISBN-13 : 978-0465050659.
7. Mendoza-González, R., Luna-García, H., & Mendoza-González, A. (Eds.). (2020), UXD and UCD Approaches for Accessible Education, IGI Global, ISBN13: 9781799823254|ISBN10: 1799823253.
8. Jesse James Garrett (2009), The Elements of User Experience: User-Centered Design for the Web, Peachpit Pr, ISBN-10 : 0735712026 ISBN-13 : 978-0735712027
9. Jonathan Lazar et. al, (2017), Research Methods in Human Computer Interaction, Elsevier Inc., ISBN 978-0-12-805390-4

DAT 22003 Cybersecurity Fundamentals

Synopsis

This course gives knowledge and skills to the student about fundamental of Information Security. Topics cover are Introduction to Information Security, Security Management, Authentication and Access Control, Introduction to Cryptography, Virus and Malicious Code, Media Security, E-Commerce Security and Database and Issues and Ethics In Information Security.and risk mitigation.

References

1. Pfleeger, C. P. dan Pfleeger, S. L. (2007). Security in Computing. 4th Edition, New Jersey: Prentice Hall. Call Number: QA76.9.A25 .P45 2007
2. Whitman, M. E. dan Mattord, H. J. (2009). Principles of Information Security, Canada: Thomson/Course Technology. Call Number: TK5105.59 .W45 2009
3. Fisch, E. A. dan White, G. B. (2002). Secure Computers and Networks: Analysis, Design and Implementation, Boca Raton: CRC Press.
4. Keith Martin, Konstantinos Mersinas, et al. (2025) Cyber Security Foundations: Fundamentals, Technology and Society, Kogan Page ISBN-10 : 1398614742
5. Paul J. Springer (2024) Encyclopedia of Cyber Warfare 2nd Edition, Bloomsbury Academic, ISBN-10 : 144088160X
6. Ed Adams, (2024) See Yourself in Cyber: Security Careers Beyond Hacking 1st Edition, Wiley ISBN-10 : 1394225598

DAT 22103 Cloud Computing

Synopsis

This course emphasises knowledge and skills in producing web applications and transferring existing applications into a cloud computing environment. This course will discuss an introduction to cloud computing, technology, architecture, and the role of cloud computing, security and data protection in a cloud computing environment.

References

1. [E-Book] Marinescu, D. C. (2023). Cloud Computing: Theory and Practice (3rd ed.). Elsevier. https://doi.org/10.1016/C2020-0-02233-4
2. Chandrasekaran, K. (2015). Essentials of Cloud Computing. CRC Press. Call number: QA76.585 .C42 2015
3. Kale, V. (2015). Guide to Cloud Computing for Business and Technology Managers: From Distributed Computing to Cloudware Applications. CRC Press. Call number: QA76.585 .K35 2015
4. Fundamentals, Techniques, and Applications. CRC Press. Call number: QA76.585 .C57 2014
5. Yang, C., & Huang, Q. (2014). Spatial Cloud Computing: A Practical Approach. CRC Press. Call number: G70.217.G46 .Y36 2014

DAT 22203 Integrated System Technology

Synopsis

This course explores the principles of integration at the system level, data encoding techniques, data storage methods, data conversion necessity, and commonly used intersystem communication protocols. It equips Information Technology students with the knowledge and skills to effectively design, implement, and manage integrated IT systems. Through theoretical study and practical exercises, students will gain the necessary knowledge and skills to effectively design, implement, and manage integrated IT solutions.

References

1. Mani, K. (2023). REST API - Complete Handbook: for Python, Javascript, Java and more. Amazon Digital Services LLC - Kdp. ISBN: 979-8864564004
2. Cathal, M. (2023). RESTful API Design: Quick Guide (HandBook for Professionals Series). ISBN: 978-3-319-04156-8.
3. Panherkar, O. (2023). Laravel REST API Made Easy: LEARN TO WRITE FLUENT LARAVEL API with Omkar Panherkar (Become Full Stack Developer). ISBN: 979-8373957571
4. Sharma, S. (2023). Modern API Development with Spring 6 and Spring Boot 3 - Second Edition: Design scalable, viable, and reactive APIs with REST, gRPC, and GraphQL using Java 17 and Spring Boot 3 (2nd ed. Edition). Packt Publishing. ISBN: 978-1804613276
5. Perscheid, M., Siegmund, B., Taeumel, M., & Hirschfeld, R. (2017). Studying the advancement in debugging practice of professional software developers. Software Quality Journal, 25, 83-110.

DAT 22303 Advanced Networking

Synopsis

This course provides students with a comprehensive understanding of advanced networking concepts essential for designing, implementing, and managing telecommunication systems and cloud-based enterprise networks. Through analysis, comparison, and practical application, students gain the knowledge and skills necessary to address the complex challenges of modern networking environments.

References

1. White, R., & Banks, E. (2017). Computer Networking Problems and Solutions: An innovative approach to building resilient, modern networks. Addison-Wesley Professional.
2. Vacca, J. R. (2015). Handbook of sensor networking: advanced technologies and applications. CRC Press. ISBN: 978-1-4665-6972-0
3. Olivier Bonaventure (2016). Computer Networking : Principles, Protocols and Practice. Lulu.com.
4. Edelman, J., Lowe, S. S., & Oswalt, M. (2018). Network Programmability and Automation: Skills for the Next-Generation Network Engineer. " O'Reilly Media, Inc.".

DAT 22503 System Paradigms

Synopsis

This course explores the strategic and technical dimensions of IT systems within organizations, focusing on how systems are designed to address stakeholder needs using diverse architectural frameworks. Students will gain an understanding of the relationship between IT system architectures and the system lifecycle, emphasizing their alignment with organizational objectives. By the end of the course, students will be equipped to critically assess IT system architectures, justify design decisions, manage procurement effectively, and implement robust testing strategies.

References

1. Hughes, B., Ireland, R., & West, B. (2019). Project Management for IT-Related Projects. 3rd Edition. ISBN: 9781780174846.
2. Kathy, S. (n.d). Information Technology Project Management. 9th Edition. PRINT ISBN: 9780357241226 E-TEXT ISBN: 9780357241226 Additional ISBNs: 9781337101356, 1337101354.
3. [E-Book] Cöster, M., Danielson, M., Ekenberg, L., Gullberg, C., Titlestad, G., Westelius, A., & Wettergren, G. (2023). Digital transformation: Understanding business goals, risks, processes, and decisions. Open Book Publishers. https://web-p-ebscohost-com.ezproxy.uthm.edu.my/ehost/detail/detail?vid=4&sid=28961022-267d-4957-90fea693254100e340redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=3651121&db=nlebk.
4. [E-Book] Geraci, A. (2021). Special topics in information technology. Springer. https://web-p-ebscohost-com.ezproxy.uthm.edu.my/ehost/detail/detail?vid=7&sid=28961022-267d-4957-90fe-a693254100e340redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#db=nlebk&AN=3735545.
5. [Journal] Mohamed, N., & Al-Jaroodi, J. (2019). A middleware framework to address security issues in integrated multisystem applications. In 2019 IEEE International Systems Conference (SysCon) (pp. 1-6). IEEE.https://doi.org/10.1109/SYSCON.2019.8836792. https://ieeexplore-ieee-org.ezproxy.uthm.edu.my/document/8836792.
6. [Journal] Uddagiri, V., Eswarachary, L., Jagadeesan, M., & Kharat, V. (2020). Improving the quality of requirements in middleware requirements specifications. In 2020 IEEE 28th International Requirements Engineering Conference (RE) (pp. 412-415). IEEE. https://doi.org/10.1109/RE48521.2020.00060. https://ieeexplore-ieee-org.ezproxy.uthm.edu.my/document/9218203.

DAT 21101 Diploma Project 1

Pre-requisite: Pass 36 credits (40%) of total graduating credit (90 credits)

Synopsis

This course is designed to help students with the skills and knowledge necessary for effective project proposal development and decision-making processes. Through a combination of theoretical learning and practical application, students will learn how to identify project opportunities, conduct feasibility assessments, formulate clear and compelling proposals, and make informed decisions regarding project selection and implementation.

References

1. Shelena Soosay Nathan, Rafizah Mohd Hanifa, Hazwani Rahmat (2023) Panduan Umum Projek Diploma Dat 21104, UTHM (ebook).
2. Brewer, Jeffrey L., and Kevin C. Dittman. Methods of IT Project Management: Third Edition, Purdue University Press, 2018. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5515329.
3. Wysocki, Robert K.. Effective Project Management: Traditional, Agile, Extreme, Hybrid, John Wiley & Sons, Incorporated, 2019. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5747804.
4. Hamilton, Boni. Integrating Technology in the Classroom: Tools to Meet the Needs of Every Student, International Society for Technology in Education, 2018. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5880825

DAT 22104 Diploma Project 2

Pre-requisite: DAT 21101 Diploma Project 1

Synopsis

This course helps students with the skills and knowledge required to successfully navigate the complexities of project development in Information Technology. Through practical application, students will learn industry-standard methodologies, tools, and techniques to deliver IT projects on time, within budget, and according to specifications

.**References**

1. Shelena Soosay Nathan, Rafizah Mohd Hanifa, Hazwani Rahmat (2023) Panduan Umum Projek Diploma Dat 21104, UTHM (ebook).
2. Brewer, Jeffrey L., and Kevin C. Dittman. Methods of IT Project Management : Third Edition, Purdue University Press, 2018. ProQuest Ebook entral, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5515329.
3. Wysocki, Robert K.. Effective Project Management: Traditional, Agile, Extreme, Hybrid, John Wiley & Sons, Incorporated, 2019. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5747804.
4. Hamilton, Boni. Integrating Technology in the Classroom: Tools to Meet the Needs of Every Student, International Society for Technology in Education, 2018. ProQuest Ebook Central, https://ebookcentral.proquest.com/lib/uthm-ebooks/detail.action?docID=5880825

DAT 30108 Industrial Training

Pre-requisite: Taken 60% of the total graduating credit.

Synopsis

Students are required to attend the practical training for 16 weeks, either in the government or private sector. During this period, they will be given assignments or projects, that are approved by the faculty and organisation in advance. The approved assignments or projects are related to their respective areas of specialisation.

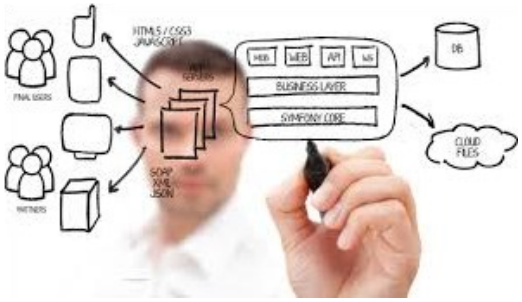
References

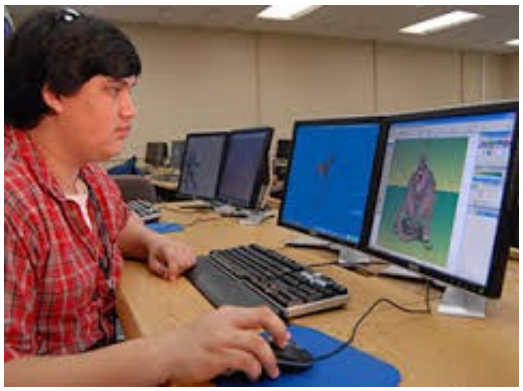
1. Universiti Tun Hussein Onn Malaysia. (2020). Garis Panduan Latihan Industri Pelajar (Program Sarjana Muda dan Diploma) (5th ed.). UTHM.

Career and Further Education Prospect

Graduates of the program have a wide range of career opportunities. A conducive learning environment with an emphasis on practical skills allow graduates to have careers related to information technology as follows:

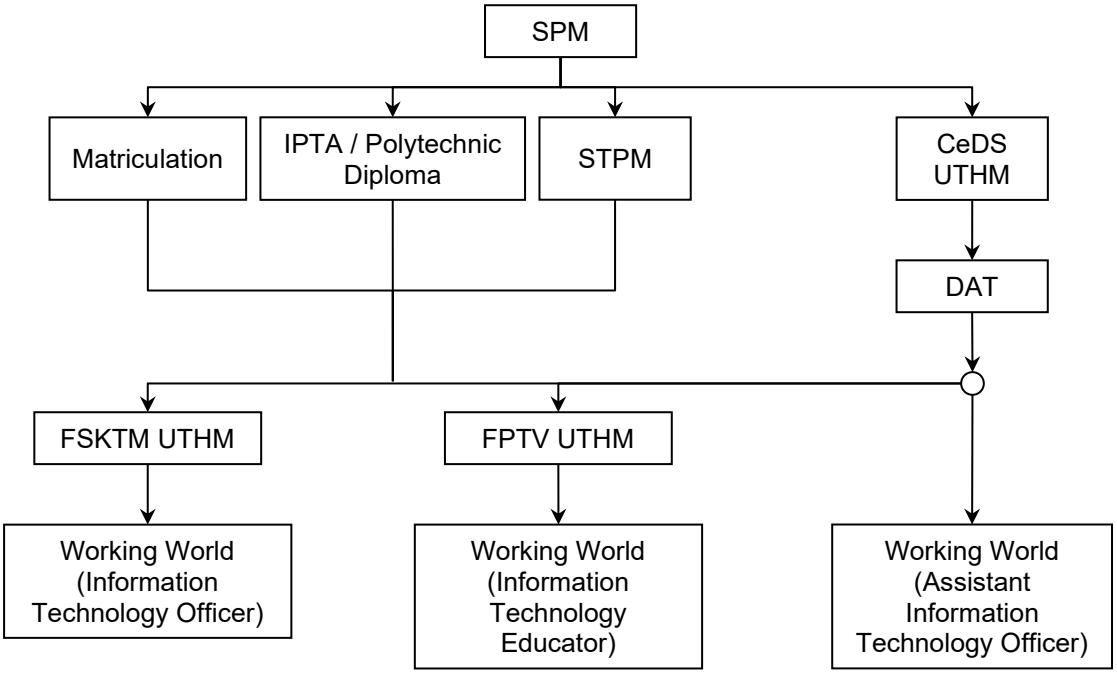
- **Software & Application Development**: Software Developer, Software Engineer, Application Developer, Web Developer, Game Developer, Mobile App Developer, Front-End Developer, Back-End Developer, Full-Stack Developer
- **Systems & Architecture**: Systems Architect, Embedded Systems Developer, IT Enterprise Architect, Cloud Architect, Cloud Engineer, DevOps Engineer
- **Data & Analytics:** Data Scientist, Data Analyst, Data Engineer, Database Administrator, Operations Research Analyst, Market Research Analyst
- **Cybersecurity & Risk:** Cybersecurity Analyst, Cybersecurity Specialist, IT Security Analyst, Penetration Tester, Cryptographer, Algorithm Engineer
- **Networks & Infrastructure:** Network Engineer, Advanced Network Engineer, Network Architect, Telecommunications Specialist, IT Infrastructure Manager, System Administrator, IT Support Specialist
- **Design & User Experience:** UX/UI Designer, Product Designer, Human-Computer Interaction Specialist
- **Project & Program Management:** IT Project Manager, Program Manager
- **Business & Systems Analysis:** Business Analyst, Systems Analyst, Digital Marketing Strategist





In addition, with the recognition that has been given by the Public Service Department and the Malaysian Qualifications Agency (MQA), graduates of this program are eligible to continue their studies to degree level, whether in or outside the State subject to the conditions set by the university admission applicable. Education pathway in UTHM according to Malaysian Qualifications Framework as shown in the diagrams on the next page.

Further Education Pathway



Abbreviations:

- CeDS – Centre for Diploma Studies
- DAT – Diploma in Information Technology
- FPTV – Faculty of Technical and Vocational Education
- FSKTM – Faculty of Computer Science and Information Technology
- SPM – Sijil Pelajaran Malaysia
- STPM – Sijil Tinggi Persekolahan Malaysia

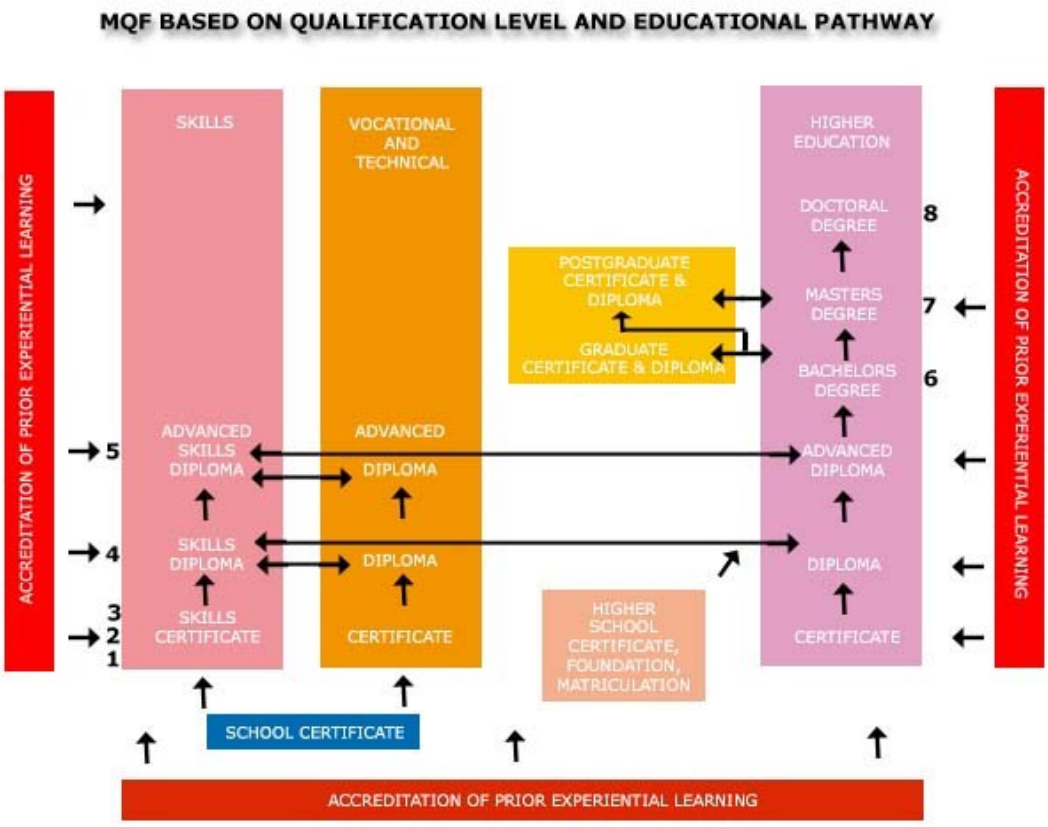


Figure 1: Educational Pathway According to the Malaysian Qualification Framework