FACULTY OF

DATA SCIENCE

& COMPUTING

UNIVERSITI MALAYSIA KELANTAN

CONTACT US

Faculty of Data Science and Computing,
Universiti Malaysia Kelantan,
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No.1 ENTREPRENEURIAL UNIVERSITY by ACEEU
THE IMPACT RANKINGS 2021
SUSTAINABLE DEVELOPMENT GOALS

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ENTREPRENEURSHIP is our thrust
Kita #BinaLegasiUMK Bersama
#WeAreUMKFamily
#OneUMKOneDream

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INTRODUCTION

Innovations in Data Science (DS) have changed the way we communicate and businesses operate. Many of recent AI algorithms, methods and computational designs are data driven. While many learning world-leading institutions have strategised various initiatives to realise the potential of DS, the establishment of Department of Data Science (JSD) in UMK since Jan 2021 is to serve the increasing demand of well-educated data scientists for the country.

FACULTY OF DATA SCIENCE AND COMPUTING (FSDK) is the 10th faculty established at University Malaysia Kelantan (UMK). After recently the approval from Ministry of Higher Education in November 2022 and start to operate since 1 Jan 2023.

We embrace the opportunity and challenges to develop a world-class institution of data science and seek to make an impact on a regional, national and global levels. Moreover, multiple industrial collaborations via research projects is aimed to build the academia-industry ecosystem.

The development of FSDK is a significant endeavour to ensure UMK is relevant and at the forefront of technological progress, which highlight "data" as a competitive and useful asset in the analytical process. Data Science can provide new innovative services and solutions that benefit organizations, customers, and the general public across a wide range of domains.

UNDERGRADUATE PROGRAM

BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS
MQA/PA 13774
(Tracks In Artificial Intelligence & Data Science)

POSTGRADUATE PROGRAM

DOCTOR OF PHILOSOPHY (PHD)
RESEARCH MODE
MQA/PA 14125
(Specialization: Artificial Intelligence, Internet of Things & Data Science)

MASTER OF COMPUTING
RESEARCH MODE
MQA/PA 15057
(Specialization: Artificial Intelligence, Internet of Things & Data Science)

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FIND YOUR POTENTIAL SUPERVISOR

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DOCTOR OF PHILOSOPHY
(RESEARCH MODE)

ELIGIBILITY REQUIREMENTS

a) Master's Degree by Research in a field related to Information Technology or Computer Science; OR

b) Master's Degree by coursework in a related field to Information Technology or Computer Science with a minimum CGPA of 3.00; OR

c) Bachelor's Degree in a related field to Information Technology or Computer Science with:
   1. A First Class Bachelor's qualification or equivalent; OR
   2. Achieve a minimum CGPA of 3.70 or equivalent from an academic program or Technical and Vocational Education and Training (TVET) program; OR

- Qualification other than (a), (b) and (c) can be considered if the candidate has experience in research or working in related industries subject to fulfil the entry criteria by the Malaysian Qualification Agency (MQA).

- For international students who have a qualification (a) OR (b), must obtain at least Level 6.0 in IELTS (International English Language Testing System) or its equivalent.

TUITION FEES

Doctor of Philosophy

	Full time (RM)			Part time (RM)		
	Option 1	Option 2	Option 3	Option 1	Option 2	Option 3
Semester 1	3670.00	2,170.00	1,670.00	3,170.00	1,670.00	1,170.00
Semester 2	2,400.00	2,900.00	2,400.00	1,900.00	2,400.00	1,900.00
Semester 3	2,400.00	2,900.00	2,900.00	1,900.00	2,400.00	2,400.00
Semester 4	2,400.00	2,900.00	2,900.00	1,900.00	2,400.00	2,400.00
Semester 5 & semester 6	1,500.00	1,500.00	2,500.00	1,000.00	1,000.00	2,000.00
Semester 7 and subsequent semester	1,500.00	1,500.00	1,500.00	1,000.00	1,000.00	1,000.00
Thesis examination	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00

*Students may choose any option for tuition fees payment.

WHY STUDY HERE? FSDK@UMK

- **TOP 3** highest demand Bachelor program in UMK

- Well trained experts in areas of Computing, Data Science, Artificial Intelligence, Data Analytics and Internet of Things.

- Well equipped IT facilities and conducive environment for students.

- IR4.0 Competence Center as professional certificate training center for UMK staffs, students and community.

- Comprehensive and well established subjects and researches in respective specializations.

- Established industry linkages for academic quality offering eg. Professional Certificate Award, R & D etc.

- International Exposure for students via mobility program and student exhange.

WHY YOU SHOULD CHOOSE OUR PROGRAM?

BRIGHT FUTURE AND GUARANTEED CAREER OPPORTUNITY

- Based on the current report, over 133 million new jobs will be created based on the development of IR 4.0 technology. Malaysia Digital Economy Corporation (MDEC) reported that Malaysia needs 20,000 experts in Data Science and this field ranks 6th in the list job searches as the most sought after field in Malaysia at present.

CURRICULUM DESIGNED BASED ON PROFESSIONAL MODULES FROM LEADING IT INDUSTRIES

- Professional modules from Alibaba, Huawei and Microsoft in several subjects so that students have opportunity to obtain professional certificates from these companies upon graduation.

PROGRAM HAS BEEN RECOGNIZED AND CERTIFIED BY THE MALAYSIAN TECHNOLOGICAL BOARD (MBOT)

- Recognition from MBOT proves that this program is professional in the field of technology. The recognition entitles graduates to be fully accepted to work in the technology or technical sectors nationally and internationally.

SUPERVISION FROM INDUSTRY EXPERTS THROUGH CAPSTONE PROJECT

- The program consists of group of students who will be supervised by IT Industry experts to solve the national IT problems in national industries.
- Students will be exposed to industry problems to gain experience and ideas to establish (startup) company before or after graduation.

OTHERS

- Expert lecturers and supervisors in respective field and professional certified from Microsoft and Huawei.
- Students are given the opportunity to follow **FREE** professional certification courses and the potential to obtain certification by leading industries eg. Microsoft.

MASTER OF COMPUTING (RESEARCH MODE)

ELIGIBILITY REQUIREMENT

a) Bachelor's Degree in Computer Science or Science and Technology, or a field related to Computing with a minimum CGPA of 3.00, from an institution recognized by the Government, MQA and endorsed by the University Senate; OR

b) Bachelor's Degree in Computer Science or Science and Technology, or a field related to Computing, with a minimum CGPA of 2.50, may be admitted subject to a rigorous internal assessment process; OR

c) Bachelor's Degree in Computer Science or Science and Technology, or a Computer related field, with a CGPA of less than 2.50 and a minimum of 5 years of working experience in a related industry may be considered and pass the HEP screening.

- Qualifications other than (a), (b) and (c) may be considered if the candidate has research experience or working in a related industry subject to the entry criteria set by MQA and relying on a rigorous internal evaluation process;
- For international students who have a qualification (a) OR (b), must obtain at least Level 6.0 in IELTS (International English Language Testing System) or equivalent.

TUITION FEES

Master of computing

	Full time (RM)			Part time (RM)		
	Option 1	Option 2	Option 3	Option 1	Option 2	Option 3
Semester 1	3,470.00	1,970.00	1,470.00	3,070.00	1,570.00	1,070.00
Semester 2	2,200.00	2,700.00	2,200.00	1,800.00	2,300.00	1,800.00
Semester 3	2,200.00	2,700.00	3,200.00	1,800.00	2,300.00	2,800.00
Semester 4	2,200.00	2,700.00	3,200.00	1,800.00	2,300.00	2,800.00
Semester 5 and Subsequent semester	1,300.00	1,300.00	1,300.00	900	900	900
Thesis examination	750	750	750	750	750	750

*Students may choose any option for tuition fees payment.

CURRICULUM STRUCTURE:

	MASTER	PHD
Course subject	Course information that will be offered is as follows: **RESEARCH METHODOLOGY IN COMPUTING** - The course aims to train students with the knowledge and skills necessary to develop and conduct research. - Covers key research philosophies and paradigms, design principles, ethics, research methods and data collection and analysis techniques appropriate to Computer research and related sub-disciplines. **ADVANCED ALGORITHMS** Students are required to take this course to strengthen their knowledge, skills and expertise in areas related to the three specializations in the Postgraduate Program. **SPECIALIZATION ELECTIVE COURSES**: Students must choose ONE (1) specialization elective courses offered under their respective specializations. Course selection is based on the recommendation of the Supervisory Committee.	

Research activity	- **Master Research Course:**
	This course facilitates the course of study by monitoring student's performance on:
	  1. Research progress on a regular basis
	  2. Proposal defense in semester 2 or 3
	  3. Presentation of seminars/ conferences/ colloquiums/ talks/ workshops
	  4. Publication
	  5. Thesis / Oral Examination
		- **Doctoral Research Course:**
		This course facilitates the course of study by monitoring student's performance on:
		  1. Research progress on a regular basis
		  2. Proposal defense in semester 2 or 3
		  3. Presentation of seminars/ conferences/ colloquiums/ talks/ workshops
		  4. Publication
		  5. Thesis / Oral Examination
		- **Research Seminar in Computing**
		Students will provide research review articles, forums, sharing sessions by guest speakers and faculty members. seminar sessions will be held to hone the skills of presentation, writing and commenting on research in the field of specialization
		- **Entrepreneurial Leadership Course**
		To develop students 'skills to understand and be confident in applying the latest and advanced theories, processes and methodologies in business operations as well as develop students' skills to become leaders in organization

ABOUT DATA SCIENCE

- Data Science in the program will expose students to four subjects of Data Science such as *Introduction to Data Science*, *Practice in Big Data*, *Data Mining and Applications*, *Scientific Visualization* and several other elective subjects to choose from.
- As DS has been infused in almost all sectors national and globally, Data Science courses will be rightfully emphasized for the students to grab the essences and important skills required as Data Scientist.
- With various latest techniques and tools of Data Science, underpinned with the strong fundamental concepts, the students will be able to venture well in industry once they graduate.

For students who take the Data Science track, potential careers in Data Science including:

- AI Programmer
- Data Analyst
- Data Engineer
- Machine Learning Engineer
- Data Analytics Expert
- Business Intelligence Developer
- R&D Engineer

ABOUT ARTIFICIAL INTELLIGENCE

- AI-based technology has been applied in various critical sectors such as healthcare, business, agriculture, manufacturing and others.
- AI in the program will expose students to AI specific subjects such as *Practical in AI*, *Computer Intelligence*, *Machine Learning*, *Evolutionary Computing* and several other elective subjects to choose from.
- Students will be exposed to theoretical and practical theory in AI-based courses, focusing more on hands-on skills and experience so that students are fully equipped as future and industry-ready graduates.
- Latest techniques and practices in AI will be taught and delivered to the students, along with the latest issues and developments in industry through exposure of offered courses such as Capstone Project and Practices in AI (I and II).

Among the career prospects in AI freshers:

- AI Programmer
- AI Designer
- AI Engineer
- Robotic Engineer
- AI Developer
- Machine Learning Engineer
- Computer Vision Engineer

EXPERTISE AND FOCUS

We are committed to quality and excellence in research, engaging in both fundamental and applied research that focus on real world problems or issues.

We emphasize on creating new knowledge and innovative products that make impact to the society, academia, government, industry and environment. Other relevant high demands of research focus also may be not limited to:

- Artificial Intelligence
- Big Data Analytics
- Computer Vision
- Neuroinformatics
- Data Science
- Internet of Things (IoT)
- Automation
- Advanced Communications

FEW COURSES OFFERED TO SUPPORT RESEARCH ACTIVITY:

*Specialization elective course

MASTER	PHD
- Techniques in Artificial Intelligence - Advanced Machine Learning - Deep Learning - Data Visualization - Programming for Data Science - Advanced Data Science - Big Data Analytics - Smart System	- Techniques in Artificial Intelligence - Advanced Machine Learning - Deep Learning - Data Visualization - Programming for Data Science - Advanced Data Science - Big Data Analytics - Smart Cities - Parallel and Distributed Computing for Big Data

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POSTGRADUATE PROGRAM

- **Artificial Intelligence**
- **Data Science**
- **Internet of Things**

INTRODUCTION

- The research scope for Postgraduate programme is tailored to solve the real world industry problems. Multiple industrial collaboration research projects are aimed to build the academia-industry ecosystem.
- The programs offered are able to meet the current demand for employment needs in the public and private sectors over the next few years.
- Students are required to take few advanced fundamental courses that designed to enhance their fundamental and improving technical writing skills.
- Throughout the study, students may choose their target specializations such as Artificial Intelligence (AI), Data Science (DS) and Internet of Things (IoT).
- However, the research is not limited to respective specialization, in fact it may evolve to other fields in preparing for IR5.0.

STUDENT INTAKE

Mode of Study - **Full-time** and **Part-time**

Mode of Study	Minimum Duration	Maximum Duration
Full-time	3 years (6 semesters)	5 years (12 semesters)
Part-time	4 years (8 semesters)	8 years (16 semesters)

MASTER

PHD

Mode of Study	Minimum Duration	Maximum Duration
Full-time	2 years (4 semester)	4 years (8 semesters)
Part-time	4 years (8 semesters)	8 years (16 semesters)

ABOUT INTERNET OF THINGS

- System of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
- The increasing demands of Internet connections for various Internet-of-Things (IoT) devices clearly indicate the paramount nature of IoT, which cover in both teaching and research activities in UMK.
- With practical IoT teaching materials, the students will learn and acquire much-needed skills of configuring and developing basic and advanced IoT-based projects in solving various problem or domains in practice.

Graduants from this program have very bright job career opportunity as:

- Senior IoT Solution Architect
- Senior IoT Software Developer
- IoT Product Manager
- IoT Service Manager
- Academics

UNDERGRADUATE PROGRAM

BACHELOR OF INFORMATION TECHNOLOGY WITH HONOURS

This program requires 8 Semesters (4 Years) offered for tracks which are:

- **Artificial Intelligence**
- **Data Science**

*Students may choose the track in Fifth semester.

GENERAL ENTRY REQUIREMENTS

- **SIJIL PELAJARAN MALAYSIA (SPM)**

Sijil Pelajaran Malaysia (SPM)/Equivalent with credit (GRADE C) in Bahasa Melayu/Bahasa Malaysia or credit (GRADE C) Bahasa Melayu/Bahasa Malaysia July Paper and pass in History in SPM examination; and

- **MALAYSIA UNIVERSITY ENGLISH TEST (MUET)**

At least Band 2 in MUET.

OTHER REQUIREMENTS

- **MATRICULATION / FOUNDATION**

Passed Matriculation/Foundation studies from any Public/Private University with at least an Cumulative Grade Point Average (CGPA) of 2.00 and credit in Mathematics at SPM level; or

- **MALAYSIAN HIGHER CERTIFICATE OF EDUCATION (STPM)**

Pass of STPM or equivalent (such as STAM) with at least CGPA 2.00 in two subjects and credit in Mathematics at SPM or Grade C at STPM; or

- **DIPLOMA**

Passed Diploma Level 4, Malaysian Qualifications Agency (MQA) in Computer Science or Software Engineering or Information Technology or Information Systems or equivalent with a minimum CGPA of 2.50 and credit in Mathematics at SPM level; or Passed Diploma (Level 4, MQA) in Science and Technology or Business Studies with a minimum CGPA of 2.50 is based on UMK rigorous internal assessment and honours in Mathematics at SPM level; or

- **OTHER QUALIFICATIONS THAT RECOGNIZED BY MALAYSIA GOVERNMENT**

Note: conditional requirements in Mathematics at SPM level for candidates (A), (B) and (C) can be waived if the qualification contains Mathematics subjects and the achievement is equivalent to/more than the credit requirements for Mathematics subjects at SPM level.

TUITION FEES

A. First Semester

Registration	RM	425.00
Entrepreneurship	RM	100.00
Co-curriculum	RM	300.00
Matrix Card	RM	50.00
Self-Saving Money	RM	100.00
TOTAL *once during study	**RM**	**975.00**

B. Recurring Fees (Per Semester) for 6 Semesters

(i) Tuition

Faculty of Data Science	RM	1,150.00

(ii) Ancillary

Service	RM	355.00
Student Activity	RM	175.00
Library	RM	50.00
Facility	RM	400.00
TOTAL	**RM**	**2,130.00**

C. Final Semester

Graduation	RM	300.00
Alumni	RM	50.00
	RM	350.00

Total fee for the first semester (TOTAL A + TOTAL B)	**RM**	**3,105.00**
Total fee for 8 semesters	**RM**	**18,365.00**