



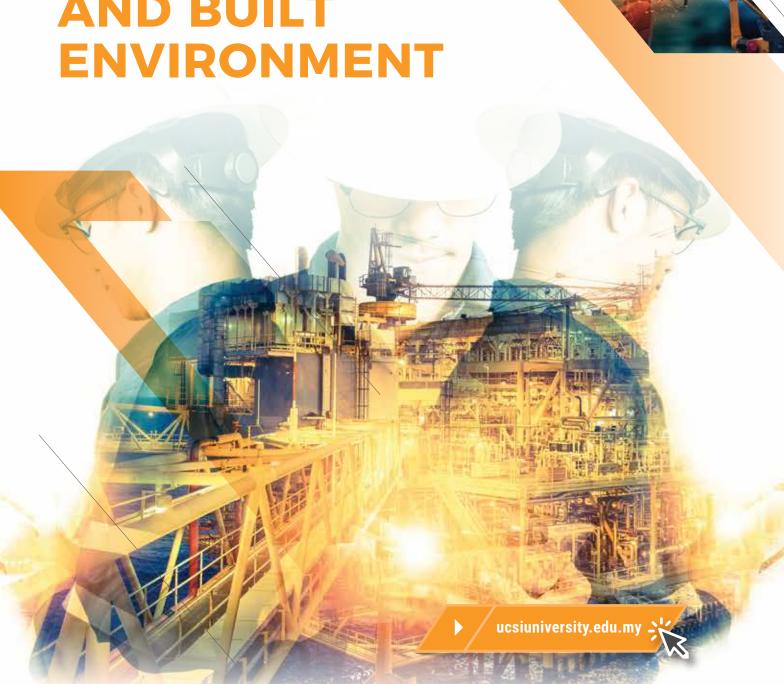
CHEMICAL ENGINEERING

QS World University Rankings by Subject 2023

TOP 400

QS World University Rankings by Subject 2023







TOP 1% GLOBALLY QS World University Rankings 2024

ONE OF ASIA'S BEST

PRIVATE UNIVERSITIES

UCSI University stands out as one of Asia's best-ranked private universities in the QS World University Rankings 2024. Ranked 300, UCSI is classified in the world's top 1%. UCSI was the only university in the world to receive the QS Recognition for Improvement Award in 2023 - an accolade that recognises universities that improve the most ranks on average.

UCSI'S SUBJECT MILESTONES

QS World University **Rankings by** Subject 2023 **PERFORMING**

HOSPITALITY AND LEISURE MANAGEMENT **TOP 150**

PETROLEUM ENGINEERING **TOP 200**

ART AND DESIGN

TOP 200

BUSINESS AND MANAGEMENT STUDIES

TOP 300

PHARMACY AND PHARMACOLOGY TOP 330

SOCIAL SCIENCES AND MANAGEMENT **TOP 400**

CHEMICAL ENGINEERING TOP 600

MEDICINE



MALAYSIA'S TOP PRIVATE UNIVERSITY FOR GRADUATE EMPLOYABILITY AND OUTCOMES



Malaysia's top private university for graduate employability

ion Ministry's Graduate Employability 2021-2022 survey



Four Forbes 30 Under 30 Asia inductees



Malaysia's top private university for employment outcomes

Two Prestige 40 Under

QS World University Rankings 2024

40 laureates



UCSI University is the first and only private university in Malaysia to receive a double





recognition as Regional Centre of Expertise (RCE) by the United Nations University: RCE Kuching and RCE Greater Kuala Lumpur



for all UCSI programmes listed in the Malaysian Higher Education Ministry's Graduate Employability 2022 Survey

4,600



global companies provide our students with internships



of our Co-Op partners would like to hire **UCSI Interns**

Students from over

120 NATIONS

International students make up around 30% of UCSI's student population



ACADEMICS

are Fellows of Academy of Sciences Malaysia or ranked in the World's Top 2% Scientists by Stanford University

of UCSI's academic staff are PhD holders and a further 15% are pursuing their doctorate



The 1st university in Malaysia's private higher education sector to offer programmes in Aquatic Science, Biotechnology, Food Science, Music and Nutrition



EMPOWERING CHANGEMAKERS

UCSI University is one of Asia's top private universities. It is classified in the world's top 1% in the QS World University Rankings 2024, by virtue of its top 300 ranking. UCSI was the only university to receive the QS Recognition for Improvement Award - an award given to universities that improve the most ranks on average - at the 2023 QS EduData Summit in New York. And the University has steadily enhanced its global profile over the past decade.

Changemakers study here. Four UCSI alumni are Forbes 30 Under 30 Asia inductees. From social entrepreneurship to impactful visual storytelling, they raise aspirations and win the respect of the world. Two more alumni are Prestige 40 Under 40 laureates for their contributions to Malaysia's music industry. And many more entrepreneurs, scientists, doctors, media personalities, musicians and national athletes make up UCSI's acclaimed alumni network.

Research and scholarly pursuit are part of UCSI's DNA. The University is equipped with state-of-the-art labs that feature the latest IR4.0 technologies in engineering, medicine, pharmacy and biotechnology. Students learn from academics who are at the forefront of their respective disciplines. UCSI's collaboration with some of the world's best universities also presents invaluable opportunities for students.

Since 2014, UCSI's top students have been annually selected to advance high-impact research at Harvard University, Imperial College London, the University of Chicago, Tsinghua University, the University of Queensland and the University of British Columbia, among others. UCSI students have gone on to work with some of the world's best minds in the fields of endocrinology, nanotechnology, pharmacology and materials science, among other critical fields.

Graduate employability is another one of UCSI's calling cards. The University has a 100% employability score in the Malaysian Higher Education Ministry's Graduate Employability 2022 survey. UCSI counts over 4,600 companies in its industry network. This includes many of the world's best firms like Accenture, CIMB, Deloitte, DHL, EY, HP, HSBC, KPMG, Maybank, Nestle, Samsung, Shlumberger, P&G, Petronas and PWC, among many others. This dynamic setup facilitates internship arrangements, joint research opportunities, technology transfers and of course, job offers.

With these unique strengths and more, UCSI stands out as a university that offers an education few can, provides experiences others can't and delivers game-changing outcomes for students around the world.

Faculty of Engineering, Technology and Built Environment

A confluence of practical studies and theoretical learning, the Faculty of Engineering, Technology and Built Environment at UCSI University has developed a range of innovative programmes that are recognised by both local and international bodies like the Malaysian Qualifications Agency (MQA), the Malaysian Engineering Accreditation Council (EAC), and the Board of Engineers Malaysia (BEM). With Malaysia as a signatory of the Washington Accord, our programmes are also recommended for recognition by member countries including Australia, Canada, Ireland, New Zealand, UK and US.

Our academics build on two vital qualities: an eagerness to share their knowledge and a desire to engage students in the Faculty's research projects. Students will have access to industry-standard facilities and engineering software and technology.

Our top students are sent abroad annually for research attachments at some of the best universities in the world such as Imperial College London in the UK, Tsinghua University in China and the University of Queensland in Australia.

Your studies here will be insightful. But more than that, it will be meaningful. Theory will lead to cutting-edge practice. Your enthusiasm will lead you to achievements. And your work will be challenging and impactful. Engineer your future with us today.



Why study Engineering at UCSI?

A PLATFORM FOR TRANSDISCIPLINARY COLLABORATION WITH 10 DISCIPLINES

>RM28MILLION INVESTED ON INDUSTRY STANDARD FACILITIES WITH IOT AND FACE RECOGNITION TECHNOLOGIES

RESEARCH ATTACHMENT AT RENOWNED UNIVERSITIES LIKE IMPERIAL COLLEGE, TSINGHUA, AND QUEENSLAND

TWO INTERNSHIP PLACEMENTS FOR HIGHER EXTENSIVE INDUSTRIAL EXPOSURE

ACHIEVED 100% GRADUATE EMPLOYABILITY SCORE IN A MINISTRY OF HIGHER EDUCATION SURVEY (2022)

PROGRAMMES ARE RECOGNISED BY WASHINGTON ACCORD AND BEM

Renowned Academics

Learn from a team of acclaimed professors and academics who are at the forefront of their respective disciplines. Work with them, be mentored by them and benefit from their wealth of experience.



ASSOCIATE PROFESSOR EUR ING IR TS DR ANG CHUN KIT

Dean

PhD in Mechanical Engineering BEng (Hons) Mechatronic Engineering



ASSOCIATE PROFESSOR EUR ING IR TS DR LIM WEI HONG

Deputy Dean

PhD in Computational Intelligence BEng (Hons) Mechatronics Engineering



PROFESSOR DATO' IR TS DR MOHD RIZON **BIN MOHAMED JUHARI**

Professor

Doctor of Engineering (Computer Science and Intelligent Systems) Master of Electrical and Electronics Engineering Bachelor of Electrical and Electronics Engineering



PROFESSOR DATO' DR AHMAD IBRAHIM, FASc

Professor

PhD in Wastewater Engineering Bachelor of Chemical Engineering Fellow Academy of Sciences Malaysia



PROFESSOR DR MOHD RAZMAN BIN SALIM Professor

PhD in Environmental Engineering Master of Civil Engineering (Sanitary Engineering) B.Sc. in Civil Engineering



ASSOCIATE PROFESSOR IR DR RODNEY TAN HEAN GAY

Associate Professor

PhD in Electrical Engineering MSc Microelectronic Engineering BSc E&E Engineering



ASSOCIATE PROFESSOR DR EZUTAH UDONCY OLUGU

Associate Professor

PhD in Mechanical Engineering MEng Mechanical Engineering BEng Mechanical & Production Engineering



ASSOCIATE PROFESSOR IR DR LEE KIAT MOON

Associate Professor

PhD in Chemical Engineering BEng (Hons) Chemical Engineering

Foundation

As we stand at the onset of the Fourth Industrial Revolution, engineers will play a starring role in the era of smart factories, the industrial internet of things, next-generation robotics and self-learning AI.

If you want to play a role in engineering the future, you'll need to acquire a fundamental understanding in science, technology, engineering and mathematics (STEM) which we provide at UCSI as well as a special focus on engineering design and advanced engineering technology.

At UCSI, you will learn from esteemed professors and academics who work on solutions that address global problems. You will also take part in industry visits, applying your knowledge at state-of-the-art laboratories and facilities. And as you lay the groundwork for further studies in Engineering, you will appreciate how this is more than a prep course. Join us and spring board your career.

Start Focused. Stay Ahead.

UCSI's specialised foundation pathway helps you acquire a much stronger grasp of your chosen field of study while covering the overall reach of a standard foundation programme. Apart from helping you immensely as you progress to degree studies, UCSI's foundation programme also provides you with an early taste of what the industry expects.

Compulsory Courses

- · General Chemistry 1
- · General Chemistry 2
- · General Physics 1
- · General Physics 2
- · Introduction to Engineering
- Introduction to IR4.0 Technologies for Sustainable Development
- Fundamentals of Mathematics
- Introduction to Probability & Statistics
- Algebra & Trigonometry
- Introductory Calculus
- Computing Essentials

Elective Courses (choose any 3)

- · Introduction to Pharmacy
- · Introduction to Formulation Science
- Biotech & Forensics: the Science that Drives Life
- Food & Nutrition: Journey Towards Health
- Current Topics in Aquaculture
- Role of Engineers in Society
- Elementary Engineering Design
- · Introduction to Medical Sciences
- Soft Skills for Healthcare Professionals

Bachelor Degrees

- Bachelor of Chemical Engineering with Honours
- Bachelor of Petroleum Engineering with Honours
- Bachelor of Mechanical Engineering with Honours
- Bachelor of Mechatronics Engineering with Honours
- Bachelor of Civil Engineering with Honours
- Bachelor of Electronics Engineering (Communication) with Honours
- Bachelor of Electrical and Electronics Engineering with Honours
- Bachelor of Computer Engineering (Artificial Intelligence) with Honours
- Bachelor of Energy Engineering with

 Hangura
- Other related degree programmes

English Language Requirement for Foundation in Science

Candidates with a minimum grade of A2 in UEC English Language, Band 2 in MUET, 30-31 in TOEFL, 4.0 in IELTS, grade C in O-Level or IGCSE or SPM English 1119, grade B1 (with at least 2 skills at B1) in CEFR, 140 in Cambridge English Qualification, 140 in Cambridge Linguaskill, and 36 in Pearson Test are exempted from SE004 Basic English and SE005 English Foundation. Other equivalent qualification can be exempted on case-by-case basis.

Candidates who scored lower than B+ in SPM English Language or than the above requirement will have to take the SE004 Basic English subject before taking the SE005 English Foundation subject in the foundation year.



Diploma In Electrical and Electronic Engineering

(R2/523/4/0217) (12/2024) (A5631)

Students of this programme will receive a strong engineering foundation in electrical technology, telecommunication, control and instrumentation systems, as well as digital and analogue electronics. Expect plenty of hands-on training in cutting-edge laboratories as you hone your technical skills and tackle complex projects.

*This programme received a 100% graduate employability score in the Ministry of Higher Education's Graduate Employability 2022 survey. (source: ge.mohe.gov.my/)

Did you know?

The Electrical and Electronics Department received hardware sponsorship from Mikro MSC Berhad in May 2021.



Subject Listing

Year 1

- · Engineering Physics I
- Engineering Mathematics I
- Computer Applications
- Electrical and Electronic Principles
- · Engineering Physics II
- · Circuit Analysis I
- · Engineering Design
- Digital Electronics
- Engineering Mathematics II

Year 2

- Engineering Principles
- Applied Computing
- Circuit Analysis II
- · Electrical Technology I
- · Electrical Technology II
- Telecommunication Principles
- Industrial Studies
- · Analogue Electronics
- Engineering Mathematics III
- · Industrial Training I
- Project A

Year 3

- · Control and Instrumentation Systems
- · Microprocessor Based Systems
- Project B

Diploma of Engineering Technology (Industrial Design)

(N/0741/4/0001) (11/2027) (PA 15255)

Unleash your creativity and design expertise with this cutting-edge Diploma of Engineering Technology (Industrial Design). This dynamic and innovative programme is specifically designed to equip you with the technical knowledge, design skills and industry insights needed to thrive in the fast-paced world of industrial design.

At the core of this programme are skills-based courses that allow you to operate computer-aided design systems, interact with computing technology, and explore the fourth industrial revolution. You'll learn how to ideate, prototype and refine designs using the latest technologies, including computer-aided design (CAD) and 3D printing. With a focus on practical, hands-on learning, you'll be immersed in a range of design projects that reflect real-world scenarios and challenges.

This programme offers a selection of exciting electives with coherent fundamentals to suit your interests and ensure you're ready for employment. Whether you're interested in product design, process engineering design, environmental process design, or electrical and electronics system design, you'll have the freedom to tailor your studies to your individual goals.



Subject Listing

Voor '

- · Introduction to Engineering
- Engineering Mathematics 1
- Engineering Drawing & CAD
- · Structure and Properties of Materials
- · Computer Applications
- Engineering Mathematics 2
- Engineering Fundamental 1
- · Engineering Statics
- · Workshop and Technology Practice 1
- Engineering Mathematics 3
- Fundamental of Project Management
- Engineering Fundamental 2

Year 2

- Programming for Engineers
- Engineering Dynamics
- Workshop and Technology Practice 2
- · Safety, Health and Environment
- Design Project
- Design Methodology
- · Engineering Automation and Technology
- Statistics
- · Final Year Project

Vear 3

Industrial Training

Elective Courses (Select 1 Stream Only) Stream 1: Industrial Manufacturing Technology

Manufacturing Processes Machining and Welding Practice Product Design & Manufacture

Stream 2: Electrical & Electronics Technology

Electrical & Electronics Principles Electrical Power Electrical & Electronics System Design

Stream 3: Process Engineering

Process Engineering Principle Process Instrumentation Process Safety and Commissioning

Stream 4: Environmental Process Design

Soil Properties Engineering Hydrology Water and Wastewater Management

Bachelor of Chemical Engineering with Honours

(R2/524/6/0024) (05/2023) (MQA/FA9302)

This four-year programme combines the three basic physical sciences – chemistry, physics and biology – with mathematics, which makes it one of today's most versatile engineering fields. This allows room for specialisation in a very broad spectrum of fields, including bioprocess, petroleum refining, waste management and etc. At UCSI, students are exposed to a myriad of new technologies that are rapidly reshaping the society we live in.

*This programme received a 100% graduate employability score in the Ministry of Higher Education's Graduate Employability 2022 survey. (source: ge.mohe.gov.my/)

Did you know?

The faculty has made it to the Top 400 in the subject area of Chemical Engineering for QS World Rankings by Subject 2022.



QS World University Rankings by Subject 2023

Subject Listing

Voor 1

- · Organic Chemistry
- Material Engineering
- · Physical Chemistry
- · Mathematical Methods for Engineers I
- · Mathematical Methods for Engineers II
- Statistics
- · Engineering Physics
- · Engineering Design and Drawing
- · Applied Chemistry Laboratory
- · Material Engineering Laboratory

Vear 2

- · Safety, Health and Environment
- · Fluid Mechanics
- Thermodynamics
- · Numerical Analysis
- · Mass Balance
- · Energy Balance
- Mass Transfer
- Programming for Engineers
- Thermofluid Laboratory
- · Numerical Analysis Laboratory
- · Industrial Training I

Year 3

- · Chemical Process Simulation and Design
- · Engineers in Society
- Process Dynamics and Controls
- · Heat Transfer
- Separation Process
- Environmental Engineering
- Reaction Engineering
- Process Instrumentation and Instrumental Analysis
- Engineering Management and Economics
- Unit Operations Laboratory
- · Reaction and Process Control Laboratory
- · Energy and Environment Laboratory
- Industrial Training II

Year 4

- · Final Year Project A
- Final Year Project B
- Plant and Safety Engineering
- Process Equipment Design
- · Surface Chemistry and Catalysis
- · Plant Design Project I
- · Plant Design Project II
- Chemical Process Design and Optimization

Elective Courses (Select 1 Specialisation Only)

Specialisation 1: Environmental and Sustainable Engineering Industrial Effluents Engineering • Renewable Energies • Bioremediation Engineering

Specialisation 2: Petroleum Refining and Downstream Processes

Natural Gas Engineering • Petroleum Refining Engineering • Petrochemical Manufacturing Processes

Specialisation 3: Biochemical Engineering

Bioprocess Engineering • Bioremediation Engineering • Microbiology for Engineers

International Degree Pathways

University of Queensland

- Bachelor of Engineering (Hons) Chemical Engineering(2+2/2+2.5)
- Bachelor of Engineering (Hons) Chemical and Biological (2+3)

Career Opportunities Process engineer | Product engineer | Environmental engineer | Design engineer | Production engineer |
Quality engineer | Service engineer | Health and safety engineer | Risk engineer | Project engineer |
Material engineer | Research engineer | Cost engineer | Lab engineer | Instrumentation engineer |
Process control engineer

Bachelor of Petroleum Engineering with Honours

(R2/524/6/0025) (05/2023) (MQA/FA9301)

Under a well-balanced curriculum that aims to provide both breadth and depth across petroleum engineering specialisations, students will build a solid foundation in oil and gas exploration, production and development as they master core topics in petroleum geology, petroleum economy and well completion.

At the Faculty, students will have access to well-equipped laboratories and sophisticated computers equipped with licensed engineering software such as NEXUS, COMPASS, t-navigator and other commercial reservoir simulation software. Industrial-based projects will also open the way for insights from industry experts. By the end of this four-year programme, they will have learnt to address pressing issues and design innovative solutions that benefit society and organisations.

*This programme received a 100% graduate employability score in the Ministry of Higher Education's Graduate Employability 2022 survey. (source: ge.mohe.gov.my/)

Did you know?

The faculty has made it to the Top 150 in the subject area of Petroleum Engineering for QS World Rankings by Subject 2021 and 2022.



QS World University Rankings by Subject 2023

Subject Listing

Year '

- · Organic Chemistry
- · Material Engineering
- · Physical Chemistry
- · Mathematical Methods for Engineers I
- Mathematical Methods for Engineers II
- Statistics
- · Engineering Physics
- · Engineering Design and Drawing
- · Material Engineering Laboratory

Year 2

- · Safety, Health and Environment
- · Physical Geology
- Thermodynamics
- · Numerical Analysis
- Fluid Mechanics
- Programming for Engineers
- Elements of Reservoir Rock and Fluid Properties
- · Thermofluid Laboratory
- · Numerical Analysis Laboratory
- · Petrophysics Laboratory
- · Industrial Training I

Vear 3

- Engineers in Society
- Petroleum Geology
- · Drilling Engineering
- · Reservoir Engineering I
- Reservoir Engineering II
- · Oil and Gas Production Operations
- Well Completion
- Engineering Management and Economics
- Environmental Engineering
- · Drilling Engineering Laboratory
- · Petroleum Geology Laboratory
- Fieldwork
- Industrial Training II

Year 4

- · Final Year Project A
- Final Year Project B
- Enhanced Oil Recovery
- · Natural Gas Engineering
- Formation Evaluation
- Reservoir Simulation
- Field Development Project I
- Field Development Project II
- Petroleum Economy
- Well Diagnosis and Treatment

Elective Courses (Select 1 Specialisation Only)
Specialisation 1: Reservoir Simulation and Management

Advanced Reservoir Simulation Reservoir Management

Specialisation 2: Petroleum Refining and Downstream Processes

Petroleum Refining Engineering

Petrochemical Manufacturing Processes

Specialisation 3: Oil Field Operation

Advanced Drilling Engineering Production System Planning

Career Opportunities Drilling engineer | Production engineer | Field engineer | Reservoir engineer | Operation engineer |
Project development engineer | Mud engineer | Well completion engineer | Cost engineer | Workover engineer |
Process engineer | Subsea engineer | Offshore engineer | Simulation engineer | Health and safety engineer

Bachelor of Mechanical Engineering with Honours

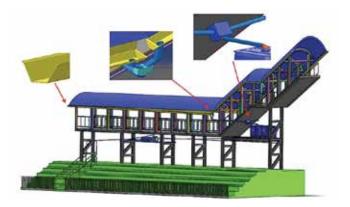
(R2/521/6/0054) (05/2025) (MQA/FA9304)

This programme offers a comprehensive range of core engineering science courses and practical projects to ensure it is highly integrated and industry-relevant. As they progress, students will be well-equipped to not only design mechanical components and systems but also solve engineering problems by applying different techniques and strong analytical skills. They will be exposed to the latest advances in engineering technologies and with the emphasis on experimental work, students will gain the skills needed to take on the challenge of designing products and process that are faster, more versatile and environmentally friendly.

*This programme received a 100% graduate employability score in the Ministry of Higher Education's Graduate Employability 2022 survey. (source: ge.mohe.gov.my/)

Did you know?

Our Mechanical Engineering Design Project is community-driven, and it involves the modelling of plant watering irrigation system integrated with rainwater harvesting for the Friends of Sungai Klang Mid Valley River Three project; with the mission of transforming the Klang River to River Three Park.



Subject Listing

Year '

- · Mathematical Methods for Engineers I
- · Mathematical Methods for Engineers II
- Statistics
- · Engineering Design and Drawing
- · Circuit Theory I
- · Engineering Statics
- Material Science
- · Material Science Lab
- · Engineering Software and Applications
- · Manufacturing Processes

Year 2

- · Engineering Dynamics
- · Electrical Power
- · Thermodynamics I
- · Thermodynamics Lab
- Fluid Mechanics I
- · Fluid Mechanics Lab
- Solid Mechanics
- · Solid Mechanics Lab
- System Dynamics
- · Microcontroller Systems
- Numerical Analysis
- · Safety, Health and Environment
- Industrial Training 1

Year 3

- Engineers in Society
- Engineering Management and Economics
- Electrical Machine
- · Instrumentation and Measurement
- · Control Systems
- · Thermodynamics II
- Fluid Mechanics II
- Mechanics of Machine
- Mechanical Engineering Design
- Heat Transfer
- Industrial Training 2

Year 4

- · Finite Element Analysis
- Mechanical Vibrations
- · Production Planning and Control
- Integrated Design Project A
- Integrated Design Project B
- · Final Year Project A
- Final Year Project B

Elective Courses (Select 1 Specialisation Only)
Specialisation 1: Green and Sustainable Technology

Green Vehicle

Renewable Energy

Specialisation 2: Advanced Materials and Manufacturing

Advanced Materials

Non-Traditional Machining Processes

Specialisation 3: Thermal Fluid Engineering

Computational Fluid Dynamics

Heating, Ventilating & Air Conditioning

International Degree Pathways

University of Queensland Australia (2+2/2+2.5)

• Bachelor of Engineering (Hons) Mechanical

University of Birmingham, UK

- BEng Mechanical Engineering (1+2)*
 - MEng Mechanical Engineering (1+3)

Career Opportunities Mechanical engineer | Production engineer | Mechanical design engineer | Manufacturing engineer |

Maintenance engineer | Structural engineer | Quality and service engineer | Material engineer | HVAC engineer |

Project engineer | Research engineer

Bachelor of Mechatronics Engineering

(R2/523/6/0241) (06/2027) (MQA/FA 3421)

Integrating three major engineering disciplines, this programme places its main emphasis on the domains of mechanical engineering, electrical and electronic engineering and software engineering. Students will constantly analyse and design complex systems to meet challenges posed by emerging technologies. They will also learn a combination of mechanical, electronic and computer science techniques that will help them design, fabricate, assemble and maintain automation and modern manufacturing systems.

Expect to develop a solid understanding of the social, cultural, global and environmental responsibilities of the professional engineer while gaining high-level technical skills essential in managing modern engineering tasks.

*This programme received a 100% graduate employability score in the Ministry of Higher Education's Graduate Employability 2022 survey. (source: ge.mohe.gov.my/)

Did you know?

A team of Mechatronics Engineering students received 2nd Place Award in the 2021 RFS Drone Competition.





International Degree Pathway

University Queensland (2+2.5)

· Bachelor of Engineering (Hons) Mechatronic

Subject Listing

- · Mathematical Methods for Engineers I
- · Mathematical Methods for Engineers II
- Statistics
- · Engineering Design and Drawing
- · Circuit Theory I
- · Engineering Statics
- · Material Science
- · Material Science Lab
- · Engineering Software and Applications
- Manufacturing Processes
- · Digital Electronics I
- · Analogue Electronic I

Year 2

- · Engineering Dynamics
- · Electrical Power
- · Thermodynamics I
- · Thermodynamics Lab
- · Fluid Mechanics I
- Fluid Mechanics Lab
- System Dynamics
- Numerical Analysis
- · Circuit Theory II
- Digital Electronics II
- · Safety, Health and Environment
- Industrial Training 1

Year 3

- Engineers in Society
- · Engineering Management and Economics
- · Electrical Machine
- · Instrumentation and Measurement
- · Control Systems
- · Microcontroller and Embedded System
- Fluid Power and Drives
- Fluid Power and Drives Lab
- Power Flectronics
- Industrial Training 2

Year 4

- · Robotic Systems
- Signal and Systems
- · Industrial Automation
- · Integrated Design Project A
- · Integrated Design Project B
- · Final Year Project A
- · Final Year Project B

Elective Courses (Select 1 Specialisation Only) Specialisation 1: Machine Intelligence

Intelligent Systems

Machine Vision and Image Processing

Specialisation 2: Automation & Control

Advanced Control Systems

Green Vehicle

Specialisation 3: Advanced Manufacturing

Machine Vision and Image Processing Non-Traditional Machining Processes

Career Opportunities Mechatronics engineer | Robotics engineer | Software engineer | Industrial designer | Mechanical systems engineer | Mechanical engineer | Mechanical design engineer | Project engineer | Electro-mechanical engineer

Bachelor of Civil Engineering

(R2/526/6/0075) (06/2026) (MQA/FA9819)

In this programme, students will learn how to design, construct and maintain structures in the 'built environment'. They will apply what they learn to real-life projects where financial and ethical issues are taken into account. By the end of the programme, students will be well prepared to devise high impact solutions and change lives for the better.

*This programme received a 100% graduate employability score in the Ministry of Higher Education's Graduate Employability 2022 survey. (source: ge.mohe.gov.my/)

Did you know?

Three (3) students from the Institute of Civil Engineering (ICE) UCSI Student Chapter Club has joined an international competition organised by the Civil and Environmental Engineering (CEE) Club of Nanyang Technological University, Singapore. A software, known as Bridge Designer 2016 was used in this competition to design a bridge that can be applied in a real-world scenario by connecting two pieces of land separated by a river. Our Civil Engineering students have successfully designed the bridges with a good cost-efficiency ratio



KEVIN JUAN





RAKIAN INZAGHI



MOHAMED AHNAF

Subject Listing

Year 1

- Statistics
- Geomatics
- · Geomatics Field Work
- Engineering Software and Application
- · Civil Engineering Drawing
- · Mathematical Methods for Engineers 1
- Mathematical Methods for Engineers 2
- Engineering Statics
- · Mechanical and Electrical Systems
- Construction Technology

Year 2

- Fluid Mechanics
- Numerical Analysis
- · Engineering Dynamics
- Stress Analysis and Design
- · Civil Engineering Materials Lab
- · Materials in Civil Engineering
- Soil Mechanics
- Hydraulics
- · Light Structure Lab
- · Theory of Structure
- Environmental Engineering Analysis and Design
- · Contract and Estimation
- · Industrial Training 1

Year 3

- · Engineers in Society
- · Geotechnical Materials and Analysis
- Reinforced Concrete Design
- Water and Wastewater Engineering
- Project Construction and Management
- Engineering Hydrology
- Geotechnical Design
- Structural Steel and Timber Design
- · Highway and Transportation Lab
- · Highway Engineering
- · Transportation Engineering
- Industrial Training 2

- · Capstone Design Project A
- · Capstone Design Project B
- · Final Year Project A
- · Final Year Project B
- · Construction Integrated Environment

Elective Courses (Select 1 Specialisation Only) Specialisation 1: Water Resources Engineering Groundwater Hydrology • Integrated Water Resources Management · Coastal Engineering

Specialisation 2: Geotechnical and Transportation Advanced Highway Engineering • Railway Engineering • Advanced Geotechnical Design

Specialisation 3: Structural Analysis and Design Advanced Reinforced Concrete Design • Bridge Design • Finite Element Analysis

International Degree Pathways University of Queensland (2+2/2+2.5)

· Bachelor of Engineering (Hons) Civil

Career Opportunities Building control surveyor | Consulting civil engineer | Contracting civil engineer | Site engineer | Structural engineer | Water engineer | Environmental engineer | Geotechnical engineer | Materials engineer | Transportation engineer

Bachelor of Computer Engineering (Artificial Intelligence) with Honours

(N/523/6/0310) (05/2026) (MQA/PA 11675)

This programme is curated specially to address the need for jobs that demand skills in the area of Artificial Intelligence (AI). It encompasses the learning of AI, Computer and Engineering. By espousing these areas, students can expect to grasp a keen understanding of the technology, its history, functionality and challenges in the application of AI. This programme covers the core theoretical foundations and provides advanced algorithmic, statistical and computer engineering knowledge. As students develop the adroitness in this field, gain new insights and smarter correlations, they will appreciate their transformation in the higher-order professional the industry needs.

Did you know?

Electrical & Electronic Engineering Department
received hardware sponsorship from TMS Lite
on Machine Test Station. This hardware
sponsorship is useful for the students' Final
Year Project and beneficial to other relevant
courses offered under the Electrical &
Electronics, Computer Engineering (Artificial
Intelligence) and Mechatronic Engineering
programmes.



Subject Listing

Year [·]

- · Mathematical Methods for Engineers I
- · Circuit Theory I
- Electromagnetic Theory
- · Engineering Graphics and Design
- Computing for Engineers
- · Mathematical Methods for Engineers II
- Analogue Electronics I
- Digital Electronics I
- Statistics
- · Electrical and Electronic Lab 1
- Computer Architecture
- · Technical Communication

Year 2

- · Circuit Theory II
- · Instrumentation and Measurement
- Electrical Power
- · Algorithm Design and Analysis
- · Object Oriented Programming
- · Safety, Health and Environment
- · Introduction to Artificial Intelligence
- Software Engineering
- Java Programming
- Electrical & Electronic Lab 2
- · Computer Engineering and AI Lab
- · Industrial Training I

Year 3

- · Digital Signal Processing
- Engineering Management and Economics
- · Microprocessor Systems
- Data Communication and Networks
- Embedded System Design
- Control Systems
- · Engineers in Society
- Communication Theory
- Machine Learning
- · Human Computer Interaction
- Instrumentation & Control Lab
- Industrial Training II

Year 4

- Integrated Design Project 1
- Operating Systems
- Cybersecurity
- Integrated Design Project 2
- · Final Year Project A
- · Final Year Project B

Elective Courses (Select 1 Specialisation Only) Specialisation 1: Business Analytics

Data Mining • Database Systems • Big Data

Specialisation 2: Computational Intelligence
Big Data • Machine Vision • Blockchain

Specialisation 3: Control and Intelligent System

Parallel Computing • Mobile Application Development •

Advanced Instrumentation and Control

Bachelor of Electrical and Electronics Engineering with Honours

(R2/523/6/0218) (11/2026) (MQA/FA9303)

Electrical and Electronic Engineering is one of the broadest engineering disciplines and this programme will cover multiple subject areas like analogue electronics, microelectronic chip design, digital signal processing, power generation, protection and distribution, C++ programming, instrumentation and measurements control, renewable energy systems, and more. Students will also have the chance to learn MATLAB, PSPICE and LABVIEW which are used to run simulations in projects and research.

*This programme received a 100% graduate employability score in the Ministry of Higher Education's Graduate Employability 2022 survey. (source: ge.mohe.gov.my/)

Did you know?

TEONG KAI LUN (Bachelor of Electrical & Electronics Engineering with Honours) was awarded MERIT AWARD in 2020 IEEE Malaysia Best Final Year Project Competition.



Subject Listing

Year '

- Technical Communication
- · Circuit Theory I
- · Digital Electronics I
- · Analogue Electronic I
- · Mathematical Methods for Engineers I
- · Electromagnetic Theory
- · Mathematical Methods for Engineers II
- · Computing for Engineers
- · Engineering Design and Drawing
- Computer Architecture
- Statistics

Year 2

- · Circuit Theory II
- Electrical Power Lab
- Electrical Power
- · Analogue Electronic II Lab
- Analogue Electronic II
- · Digital Electronics II
- Industrial Training I
- · Digital Electronics II Lab
- Numerical Analysis
- Control Systems
- · Microcontroller and Embedded System
- · Safety, Health and Environment

Year 3

- Communication Theory
- Instrumentation and Measurement
- · Data Communication and Networks
- · Electrical Machines
- · Electrical Machines Lab
- Engineering and Management and Economics
- · Engineers in Society
- Industrial Training II
- Digital System and HDLs
- Energy Conversion and High Voltage Power
- Transmission
- Power Electronics

Year 4

- Digital Signal processing
- Final Year Project A
- Power Systems
- Final Year Project B
- Power Systems Protection
- Integrated Design Project AIntegrated Design Project B

Elective Courses (Select 1 Specialisation Only)

Specialisation 1: Power & Energy

Electrical Power Quality • Renewable Energy • Power System Management and Smart Grid

Specialisation 2: IC Design

VLSI System • IC Reliability and Failure Analysis • Integrated Circuit Technology

Specialisation 3: Internet of Things

Big Data • Cybersecurity • Mobile Application Development

Specialisation 4: RF and Microwave Communication

Microwave System Design • Optical Communication • RF and Microwave Engineering

International Degree Pathways

University of Queensland (2+2.5)

· Bachelor of Engineering (Hons) Electrical

University of Birmingham

- BEng Electronic and Electrical Engineering (1+2)
 - MEng Electronic and Electrical Engineering (1+3)

Career Opportunities Design engineer | Project engineer | R&D engineer | System design engineer | Analog design engineer |
Test engineer | PCB design engineer | Electrical engineer | Digital design engineer | Quality control
engineer/Specialist | Research engineer | Software engineer | Sales engineer | Product engineer

Bachelor of Energy Engineering with Honours

(N/524/6/0090) (10/2028) (MQA/PA14864)

This programme offers specialised courses in both conventional energy resources and renewable energy resources to give a wider perspective of the subject. This energy engineering degree programme meets national and international goals, and its purpose is to support these global goals by developing more capable energy engineers. The course structure is specially curated to follow the sequence from the fundamentals of energy, generation of energy and storage of energy, up to the integration of energy in different aspects of the industry. The main highlight of this programme would be the in-depth study on conventional sources of energy such as natural gas, coal, and crude oil and sustainable sources of energy such as biogas, biomass, wind, solar, hydro and other emerging sources.



Subject Listing

Year 1

- Technical Communication
- · Mathematical Methods for Engineers I
- · Mathematical Methods for Engineers II
- Statistics
- Engineering Physics
- Engineering Design and Drawing
- · Material Engineering
- · Material Engineering Laboratory
- · Circuit Theory I
- · Electrical Power
- · Energy and Environmental Policy

Year 2

- · Safety, Health and Environment
- Fluid Mechanics I
- Thermodynamics I
- Numerical Analysis
- · Thermofluid Laboratory
- · Numerical Analysis Laboratory
- · Programming for Engineers
- · Heat Transfer
- · Thermodynamics II
- Solar Energy
- · Wind and Hydro-Energy
- · Industrial Training 1

Year 3

- · Engineers in Society
- Power Plant Engineering
- Natural Gas Energy
- Fuels and Combustion
- Bioenergy
- Emerging Energy
- · Environmental Engineering
- Energy Storage Technology
- Energy Engineering Laboratory
- Heat Transfer and Environmental Laboratory
- Industrial Training 2

Year 4

- Engineering Management and Economics
- Power Transmission and Distribution
- · Sustainable Engineering Systems: Modelling and Analysis
- Urban Energy and Energy Efficiency
- · Capstone I
- Capstone II
- · Final Year Project A
- · Final Year Project B

Elective Courses (Select 1 Specialisation Only) Specialisation 1: Advanced Power Transmission

Power System • Advanced Circuit Theory & Transmission Lines • Energy Conversion & High Voltage Power Transmission

Specialisation 2: Advanced Materials for Energy Storage

Supercapacitor for Energy Storage • Bioinspired Materials for Energy Storage • Nanomaterials in Energy Conversion and Storage

Specialisation 3: Advanced Management in Energy Engineering

Energy Management and Conservation \cdot Energy and Carbon Auditing \cdot Economics of Energy Systems

Career Opportunities Green building engineer | Energy system engineer | Project engineer | Design engineer | Material engineer |
Quality specialist engineer | Economic analyser | Energy auditor | Carbon auditor | Research and development
(R&D) engineer | New product development (NPD) engineer

Notable Student Projects

Following are some notable student projects recognised for their creativity, innovativeness and practicality. All of them employ the latest in technology and engineering practices.



This bio-inspired drone can both fly and walk and is a new solution to explore new environments with challenging landscapes. It can combine legged mobility and fast aerial mobility for autonomous exploration.

This 3D printer is affordable and has good performance exposing the latest additive manufacturing technology. While it is constructed using recycled materials, it is able to print prototypes in delicate manner.

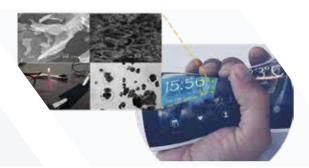


The energy efficient glass cutter robot is developed as a friendly gardener to offer automatic solutions of grass trimming in small household. It is constructed using 3D printing technology and powered by solar energy.

The miniature solar powered UV index indicator is developed to alert and remind users of need to carryout protective measure such as applying sun screen, protective cloth, UV sun glasses, etc. It also helps people to avoid extensive exposure to UV.



This cellulose-reinforced biocomposite film is a more sustainable bioplastic in replacing the non-biodegradable petroleum-based plastics. It also exhibits better mechanical strength, moisture barrier and UV-ray protection, thus an excellent packaging material in preserving the product quality.



The flexible conductive paper is made from drop-casting conductive nanomaterials onto a piece of the flexible substrate. This flexible conductive material is lightweight and useful in designing foldable and stretchable devices.

Facilities

The state-of-the-art facilities and laboratories that our students work and study in have played a significant role in preparing them for the real world. Here are some of them.



The Advance Chemical Technology Lab promotes a holistic teaching and learning process; encouraging multiple cross-disciplinary research activities.

The Advance Industrial Robotic and Cyber Physical Laboratory has handling robots, mobile robots and task robots; the platform demonstrates the intelligent and adaptable control of production.



The Engineering Software Solution and Al Research lab is suitable for training, workshops and programming. All computers configured for high performance.

Thermofluid-lab allows students to conduct research in thermodynamics, fluid mechanics, and heat transfer.



The welding and mechanical workshop enables hands-on cutting, forming, casting, machining and practical welding.

This design studio has a complete set of E&E testing equipment such as DC power supply, oscilloscopes, and digital multi meter.

Facilities



In the concrete soil and highway lab, students can test the quality of concrete, aggregate, soil, pavement and other cementitious materials.

This research lab allows students to conduct R&D and prototyping on Solar PV research, Power Electronic Converter, etc.



The power, machine and drive lab allows students to do experiments related to electrical power systems, conveyor belts, etc.

This instrumentation lab includes Atomic Absorption Spectroscopy, Fourier Transform Infrared Spectroscopy, UV-VIS spectroscopy, etc.



In the material science and petrology soil mechanics lab, students can learn about material structure, properties, performance and its processes.

The petrochemical lab includes a viscometer bath, flashpoint tester, seta oil test centrifuge, rotary evaporator, etc.

Hall Of Fame

CHANG ZHEN HONG

Alumnus

Bachelor of Chemical Engineering with Honours In 2019, Chang undertook the UCSI Global Elite Research Programme at Imperial College London as a research student. He conducted a fundamental study on peptides crystallisation, specifically on peptides solubility and polymorphism, for the enhancement of the product's stability and purity in the pharmaceutical industry.



THI SHIKI

Alumna

Bachelor of Chemical Engineering with Honours Advanced research in DNA nanotechnology with the aim of innovating protein crystallisation, a process which produces the crystals needed to study the molecular structure of protein for various pharmaceutical and biotechnological applications.



LING POH CHOO, WONG YOONG SEONG

Alumni

Bachelor of Civil Engineering with Honours First Runner Up Pertandingan Inovasi Perlindungan Cerun 2018.



BRYAN MA YUONG KAI

Alumnus

Bachelor of Chemical Engineering with Honours Selected for research attachment at Imperial College London in 2019. His focused on the advancement of protein crystallisation by establishing the soft templates as a novel technique to improve the uncontrollability of nucleation and facilitating the interaction between the protein molecules.



KHOO HON SERN (RIGHT)

Alumnus

Bachelor of Mechatronics Engineering with Honours

HOON JIAN WEN (LEFT)

Alumnus

Bachelor of Electrical and Electronics

Engineering with Honours

Both Khoo Hon Sern and Hoon Jian Wen were selected by University of Queensland in 2019 for a one month research attachment.



Hall Of Fame



(I to r) CHONG YING HAI

Bachelor of Mechatronics Engineering with Honours

KOH JIA SHUN

Bachelor of Electrical and Electronics Engineering with Honours

NG WENG MUN

Bachelor of Mechatronics Engineering with Honours

LIM KEL VIN

Bachelor of Mechatronics Engineering with Honours

NGO KAH LOCK

Bachelor of Mechatronics Engineering with Honours

All these are alumni selected to go to National Taipei University of Technology, Taiwan through the Start Trek programme in 2018 and 2019.



LEE KOK JIN Mechatronics



TEOH JIA KANG Electrical and Electronics



HAU JIAN TECK Electrical and Electronics

Interdisciplinary project of Mechatronics, Electrical & Electronics Engineering and Mechanical students received **Gold Award** in IET Automation and Control Enhancing Innovation Competition, (ACEiC 2020).



PHUA CHI SHEUN Electrical and Electronics



LOW CHUN YIN Mechatronics



JONATHAN LAM LIT SENG Mechatronics



TAN KAI HEI Mechanical

Interdisciplinary project of Mechatronics, Electrical & Electronics Engineering and Mechanical students received **Silver Award** in IET Automation and Control Enhancing Innovation Competition, (ACEIC 2020).

Academic Requirements

INTAKES: JANUARY, MAY AND SEPTEMBER

QUALIFICATIONS	FOUNDATION IN SCIENCE	DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING	DIRECT ENTRY INTO BACHELOR'S DEGREE (ALL ENGINEERING MAJORS)
SPM/O-Level	5 credits inclusive of Mathematics and 1 Science subject	Minimum 3 credits including Mathematics and one relevant science/technical/vocational subject and a pass in English	N/A
STPM		Pass in Mathematics, English and one relevant science/technical/vocational subject at the SPM level	Minimum 2Cs including Mathematics and one relevant Physical Science subject
A-Level		Pass in Mathematics, English and one relevant science/technical/vocational subject at the SPM level	Minimum 2Ds including Mathematics and one relevant Physical Science subject
UEC	3 credits inclusive of Mathematics and 1 Science subject	Pass in Mathematics, English and one relevant science/technical/vocational subject at the SPM level	Minimum 5Bs including Mathematics and one relevant Physical Science subject
СРИ	N/A	N/A	Minimum average of 60% in 6 subjects, inclusive of a minimum score of 60% in Mathematics and one relevant Physical Science subject
Local Matriculation	N/A	N/A	Minimum CGPA 2.0
Foundation from other University/College	N/A	N/A	Minimum CGPA 2.0
WAEC/NECO	N/A	Minimum 3 C's; inclusive of Mathematics and Science	A maximum aggregate of 15 points out of best 5 subjects, inclusive of minimum B in Mathematic and one relevant Physical Science subject
Diploma/Advance Diploma/Degree/ equivalent	N/A	N/A	Minimum CGPA 2.0 Subject to Faculty discretion after reviewing transcript and syllabus. Max credit transfer of 30% of the programme total credits
Other qualifications deemed equivalent to SPM/O-Level by Malaysian Qualifications Agency	Overall average of 60% inclusive of Mathematics and 1 Science subject	Minimum 3 credits including Mathematics and one relevant science/technical/vocational subject and a pass in English	N/A
Other qualifications deemed equivalent to STPM/A-Level by Malaysian Qualifications Agency	Overall average of 50% inclusive of Mathematics and 1 Science subject	Pass in Mathematics, English and one relevant science/technical/vocational subject at the SPM level	Minimum overall average of 60%, inclusive of minimum 60% in Mathematics and one relevant Physical Science subject
International Baccalaureate	N/A	N/A	Minimum 26/42 points from 6 subjects (inclusive Mathematics and one relevant Physical Science subject)
SAM	N/A	N/A	Minimum average of 60% in 5 subjects, inclusive of minimum scores of 60% in Mathematics and one relevant Physical Science subject
SACE/AUSMAT/ TEE/SAM	N/A	N/A	Minimum overall average of 60%, inclusive of a minimum score of 60% in Mathematics and one relevant Physical Science subject
WACE/NTEC	N/A	N/A	Minimum overall average of 60%, inclusive of minimum 60% in Mathematics and one relevant Physical Science subject
Certificates from Polytechnics from relevant field	N/A	Minimum 50% average	N/A

 $Upon \ successful \ completion \ of \ the \ diploma \ programme, \ students \ will \ gain \ up \ to \ 30\% \ of \ credit \ transfer \ of \ the \ total \ credits, \ depending \ on \ the \ chosen \ degree \ programme.$

English Language Requirements

Local Students and					
International					
Students					

QUALIFICATIONS	DIPLOMA	DEGREE	
SPM English Language	Minimum grade of B+		
English Language 1119/O-Level English/IGCSE	Minimum grade of C		
UEC English	Minimum grade of A2		
MUET	Minimum of Band 3.5		
CEFR	B1 (High B1)		
IELTS	Minimum score of 5.0		
TOEFL iBT	Minimum score of 40		
TOEFL Essentials (Online)	Minimum score of 7.5		
Pearson Test of English	Minimum score of 47		
Cambridge English Qualification and Tests	Minimum score of 154		
Cambridge Linguaskill	Minimum score of 154		

Note: In the event that the English language requirements are not met, local applicants will be required to take the Basic English and English Foundation for in-sessional academic enhancement concurrently with the programme.

For Local Students

Must possess English competency as per Malaysian undergraduate requirement, whereby the medium of instruction is in English.

International applicants who do not meet the respective academic programme's English Language Requirement will need to improve their proficiency by enrolling into the English for Tertiary Education programme (R/KJP/00920-00929) which helps them prepare for attaining a required band score. Placement into the various levels of the English for Tertiary Education programme depends on the English Language qualification students have at the point of admission and/or the outcome of the English Placement Test.

The applicants who have met the respective academic programme's English Language Requirement may be advised by Faculty to improve their proficiency by undertaking the additional English proficiency courses.

General Courses (MPU)

COMPULSORY FOR ALL STUDENTS

DEGREE PROGRAMMES		DIPLOMA PROGRAMMES		
MALAYSIAN STUDENTS	INTERNATIONAL STUDENTS	MALAYSIAN STUDENTS	INTERNATIONAL STUDENTS	
Appreciation of Ethics and Civilisations Philosophy and Contemporary Issues	Communication in Bahasa Melayu 3 Philosophy and Contemporary Issues	Appreciation of Ethics and Civilisations	Communication in Bahasa Melayu 2	
ALL STUDENTS		ALL STUDENTS		
 U2 – Technical Communication U3 – Malaysian Experiential Tou U4 – Extra-curricular Learning Extra-curricular Learning Extra-curricular Learning 		 U2 – Study Skills and Employability U3 – Malaysian Eco-Tourism U4 – Extra-curricular Learning Experience 1 to 2 		

While the above information is accurate at the time of printing, please note that entry requirements are subject to change. Please visit the university website for the most updated information.



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KUCHING CAMPUS DU020-02(Q)

Lot 2976, Block 7, Muara Tebas Land District, Sejingkat, 93450 Kuching, Sarawak. Tel +(6082) 596 965 Fax +(6082) 596 975

SPRINGHILL (SEREMBAN/PD) CAMPUS DU020(W)

No. 2, Avenue 3, Persiaran Springhill, 71010 Port Dickson, Negeri Sembilan General Line (+606) 648 8888 Course Enquiry (+606) 648 8880

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