



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

Razak Faculty of Technology  
and Informatics

# Master of Science (Engineering Design)

MQA/PSA11114

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"GROUNDING TO DELVE DEEPLY INTO ENGINEERING DESIGN FOR  
FUTURE SOLUTION"



<http://razak.utm.my>



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## PROGRAMME OVERVIEW

### Master of Science (Engineering Design)

provides an opportunity for graduates of science background in Bachelor of Engineering, Bachelor of Technology and Bachelor of Science the ability to integrate and generate advanced engineering design knowledge in creating an innovative product and process solution in a new situation or context. The program provides methods, models and tools for mechanical product design and industrial design management system. As a result, it is expected that graduates have the ability to manage complex matters in engineering design and identify entrepreneurship opportunities.

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## ENTRY REQUIREMENTS

A Bachelor's Degree with good honours from Universiti Teknologi Malaysia or any other institution of higher learning recognised by the Senate; OR

A qualification equivalent to a Bachelor's Degree and experience in the relevant field recognised by the Senate.

[Additional requirement for International Applicant](#)

An English Certificate of IELTS with the minimum band of 6.0 OR TOEFL with the minimum score of 550

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## CAREER OPPORTUNITIES

- Design Engineer
- Industrial Engineer
- Manufacturing Engineer
- Engineering Design Manager
- Engineering Design Consultant
- Researcher/Academician

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## CORE COURSES

- Technovation Management
- Engineering Design Optimization
- Creativity and Innovation Management
- Engineering Design Process and Methodology
- Materials Selection and manufacturing Process
- Computer Aided Design (CAD)/Computer Aided Engineering (CAE)
- Research Methodology
- 1 University General Course

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## ELECTIVE COURSES

### MECHANICAL SYSTEM DESIGN

- Automotive Engineering Design
- Design for Reliability
- Fluid Power
- New Product Development
- Mechatronics System Design
- Metrology and Measurement

### PRODUCT DESIGN

- Life Cycle Cost Analysis for Engineers
- Design for Sustainability
- Entrepreneurship and Marketing
- Theory of Inventive Problem Solving (Triz)
- Robust Product Design
- Industrial Design and Human Factors

### ELECTRONIC SYSTEM DESIGN

- Advanced Digital System Design
- Wireless Communications Systems
- Advanced Communications Electronics
- Advanced Sensor System
- System Processors and Peripherals

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## MASTER PROJECT

- Master Project 1
- Master Project 2



*"Gain interdisciplinary engineering skills.."*

“ This program gave me the opportunity to gain interdisciplinary engineering skills to solve complex problems for a well-balanced setting. The interesting subjects offered were the deciding factor in choosing this program at UTMRazak. ”

### MOHD FIRDAUS MOHD NOOR

Lecturer  
Polytechnic Education Department



COURSEWORK (46 CR)



Intake: February and September



Package 1: Weekdays Class  
1.5 years (3 semesters)-4 years (8 semesters)

Package 2: Weekend Class  
2 years (4 semesters)- 4 years (8 semesters)