



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

UTM Razak School of
Engineering and
Advanced Technology



Master of Science (Engineering Design)

The Master of Science (Engineering Design) provide an opportunity for graduates of science background in Bachelor of Engineering, Bachelor of Technology and Bachelor of Science. The program provides methods, models and tools for mechanical product design and industrial design management system. The MSED program is implemented in modular mode, whereby modules are taken sequentially instead of concurrently as in the traditional master programme implementation. A total of 46 credits are required for graduation, comprising 12 taught modules of 3 credits each and a master project worth 10 credits. The duration of study is 1½ years for full-time and 2 years for part-time study. This programme aims to prepare working professionals in the engineering and other professions in engineering or technology based organizations working for transition into senior executive positions or engineering (or other professional) management roles and to prepare for life-long learning.

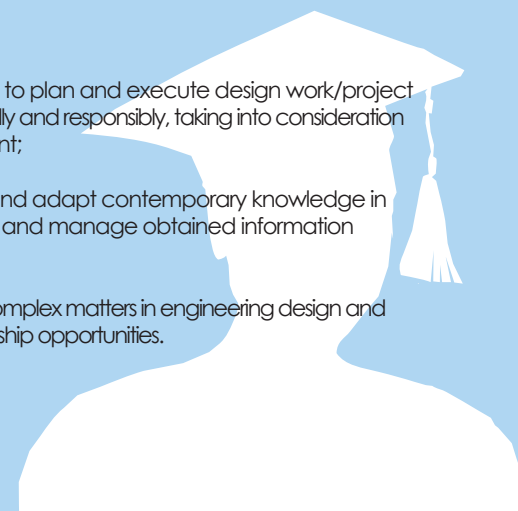
Program Objectives

Produce graduates who are able to:

- Demonstrate the engineering design knowledge obtained from this program when creating innovative solutions to industry-related problems.
- Exhibit effective communication skill among multi-disciplinary team members.
- Uphold professional ethics when executing responsibilities and taking into account society, environment and global issues.
- Enhance related knowledge in engineering design via sound information management and life-long learning.

Program Outcomes

- (1) Ability to integrate and generate advanced engineering design knowledge to develop or create innovative product and process solution in a new situation or context;
- (2) Ability to analyze and evaluate problems critically and provide solutions through the use of appropriate tool and techniques;
- (3) Ability to assess situation and to communicate effectively in relation to research outcome, knowledge and give suggestion rationally to peers and experts in related area as well as to lead and work in team;
- (4) Demonstrate Ability to plan and execute design work/project professionally, ethically and responsibly, taking into consideration and the environment;
- (5) Ability to organize and adapt contemporary knowledge in engineering design and manage obtained information effectively;
- (6) Ability to manage complex matters in engineering design and identify entrepreneurship opportunities.



Entry Requirements

• General University Requirements:

Bachelor's Degree (Honours) with minimum CPA 3.00/4.00 in the relevant field or equivalent from a recognized university. Basic conditions of entry is referring to the Evaluation Guidelines Admission 1998 Pind.1/2013.

• Faculty's Requirement:

Admission requirements are as specified by the School of Graduate Studies. Additional conditions are Master's

Degree in the relevant field recognized by the Senate of UTM with honors or equivalent.

(i) Bachelor of Science/Engineering in the field of Engineering and Technology in the discipline of Electrical, Electronic, Mechanical, Manufacturing, Computer or equivalent with Honor that is approved by UTM Senate or equivalent with CGPA 3.00 and above
OR

(ii) For those with lower first degree qualification must have at least two years working experience in the related field with minimum CPA of 2.70/4.00 or four years working experience in the related field with minimum CPA of 2.50/4.00

• English Language Requirement (for international student):

All international students applying to UTM must have a valid two-year old TOEFL or IELTS certificate. Students with a TOEFL score of 550 (or 79 IBT) or an IELTS Band 6 will be enrolled in a faculty programme without undergoing UTM English Courses.

Starting from Semester II/2010/2011, students who applied for Master or PhD programme - Teaching English as a Second Language, must have a valid two-year certificate of TOEFL with a score of 600 and above or IELTS Band 7 and above (or IBT/CBT equivalent).

Courses

1. CORE COURSES (18 credits – Compulsory)

● Engineering Design Optimization	3
● Technovation Management	3
● Engineering Design Process & Methodology	3
● Materials Selection and Manufacturing Process	3
● Computer Aided Design (CAD) / Computer Aided Engineering (CAE)	3
● Creativity and Innovation Management	3

2. ELECTIVE COURSES - Design of Mechanical System (12 credit – Choose 4)

● Automotive Engineering Design	3
● Design for Reliability	3
● Fluid Power	3
● New Product Development	3
● Mechatronics System Design	3
● Metrology and Measurement	3
● Special Topic	3

3. ELECTIVE COURSES - Product Design (12 credit – Choose 4)

● Life Cycle Cost Analysis for Engineers	3
● Design for Sustainability, Manufacturing and Assembly	3
● Entrepreneurship and Marketing	3
● Theory of Inventive Problem Solving (TRIZ)	3
● Robust Product Design	3
● Industrial Design & Human Factors	3
● Special Topic	3

4. ELECTIVE COURSES - Electronic System Design (12 credit – Choose 4)

● Advanced Digital System Design	3
● Wireless Communications Systems	3
● Advanced Communications Electronics	3
● Advanced Sensor System	3
● System Processors and Peripherals	3
● Special Topic	3

University Courses (6 credit)

● Research Methodology	3
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and Choose ONE Only from the list below

● Environmental Ethics	3
● Information and Communication Technology Ethics and Society	3

● Seminar on Global Development, Economy and Social Issues	3
● Philosophy of Science and Social Development	3
● Dynamics of Leadership	3
● Malaysian Society and Culture	3
● Malay Language for Postgraduates	3
● Organizational Behavior and Development	3
● IT Project Management	4
● Japanese Language	6

MASTER PROJECT

Masters Project 1	4
Masters Project 2	6

TOTAL CREDIT 46

Fee

Full Time/ Part-time

	Local	International
Processing fee (Non-refundable)	RM 20.00	RM 114.00
Registration fee (Non-refundable)	RM 300.00	RM 4,000.00
Programme fee* (Subject to change)	RM 19,800.00	RM 32,000.00

● Meals provided

Scholarship and Financial Aids

Student can obtain financial assistance from:

- (1) My Brain 15: (<https://biasiswa.moe.gov.my/MyBrain15>)
- (2) PTPTN: (<http://www.ptptn.gov.my/web/guest/pinjaman>)
- (3) MARA (<http://www.mara.gov.my/web/guest/biasiswa-pinjaman-pelajaran>).

Student can also withdraw EPF savings. UTM will issue a support letter once the offer letter to the student has been issued by the School of Graduate Studies.



razakschool.utm.my

For online application, please log on to www.sps.utm.my

Program Coordinator:
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MASTER OF SCIENCE (ENGINEERING DESIGN)

