

MASTER OF SCIENCE IN ENGINEERING

1. PROGRAMME

MASTER OF SCIENCE IN ENGINEERING

2. STUDENT ADMISSION REQUIREMENTS

Academic

Candidates should possess a relevant Bachelor degree with a very good academic record or its equivalent from any institution of higher learning recognized by the IIUM Senate.

Candidate also should attain a minimum CGPA of 2.75/4.0 or its equivalent is required for the Research Mode.

Language

Candidates of Master programme at Kulliyah of Engineering, must present (as shown in Table 1) a score of 500 in the Test of English as a Foreign Language (TOEFL) or 5.0 points in the test administered by the International English Language Testing Service (IELTS). Alternatively, applicants may sit for the IIUM-administered English Placement Test (EPT) and obtain a minimum of 5.0 points to fulfil the English language requirement. Applicants who are unable to submit satisfactory results in any of the above test may take up language proficiency courses at the University to fulfil the admission requirements. The language requirements presented here are based on Postgraduate Regulations (Revised 2020). This language requirement is subjected to the University policy and may be updated in the future.

Table 1: General English Language Entry Requirements

Programmes	Minimum TOEFL Score (Academic)	Minimum IELTS Score (Academic)	Minimum Score (EPT)
MSc	Paper based :500 Computer based :173 Internet based :60	5 .0 Overall band score	5 .0 Overall band score

3. BRIEF INTRODUCTION

The Kulliyah of Engineering was established in March 1994. Beginning February 1997, the Kulliyah started its postgraduate programmes at the Master as well as the Doctor of Philosophy levels. The vision of the Kulliyah is to be a world class centre of engineering education and research with values and ethics. The mission is to provide quality academic and professional services which are competitive and innovative for the progress of the

society. The goals are to produce globally recognized graduates who demonstrate high professional ethics, deliver indigenous research products (publications, patents, intellectual properties, commercialization, etc.), and offer exemplary services (consultancy, training, continuous education, etc.) that satisfy customers expectations.

With the Kulliyah's philosophy that is based on systems approach, the engineering programmes offer an integrated and comprehensive education that transcends the boundaries of various disciplines. This is consistent with the Islamic concept of Tawhid, which unifies the spiritual and physical aspects of life into a harmonious continuity. Besides being professionally qualified and competent, the graduates will acquire spiritual, intellectual, moral and ethical characteristics towards the development of an integral and harmonious relationship with Allah (the Creator), fellow human beings, and with the environment. The interdisciplinary approach to engineering education will not only allow the graduates to solve industrial and human problems but will also enable them to bring about and manage changes in conformity with the worldview based on the principles of Islam. Engineers, in addition to understanding scientific principles, are concerned with the time, economics, and values that define the application of those principles. With this in mind, the Kulliyah fosters a close partnership with industry and government, and reaches out to both the IUM community and the public at large. In addition to its teaching role, the Kulliyah has the responsibility to conduct strong research programmes that contribute to the advancement of knowledge.

14 cutting edge specialisations are offered under the **MSc in Engineering (Full Research) programme, that are:**

1. Automotive Engineering
2. Biochemical Engineering
3. Biotechnology Engineering
4. Communication Engineering
5. Computer and Information Engineering
6. Chemical Engineering
7. Civil Engineering
8. Electronics Engineering
9. Engineering Mathematics
10. Engineering Science
11. Manufacturing Engineering
12. Material Engineering
13. Mechanical Engineering
14. Mechatronics Engineering

4. PROGRAMME LEARNING OUTCOME (PO)

At the end of the programme, students are expected to be able to:

1. Demonstrate advanced knowledge and in depth understanding in a traditional or emerging area of knowledge in a specialized area of mechanical engineering. (Core Knowledge)
2. Identify, formulate, and solve complex mechanical engineering problems critically, autonomously and creatively by selecting and applying appropriate tools and techniques. (Independent Research)
3. Design and conduct appropriate experimentation and/or simulation to meet a need, analyze and interpret the resulting data, and use engineering judgment to draw conclusions. (Research Methods and Analysis)
4. Communicate effectively with logical, clear, and organized thinking, to a broad range of audiences. (Communication)
5. Function effectively both as an individual and in a group as well as being an effective team leader. (Teamwork and Leadership)
6. Pursue lifelong learning through seeking new knowledge and skills in professional and personal aspects of life as well as analyzing and identifying business opportunities. (Lifelong Learning)
7. Perform research on mechanical engineering problems professionally, ethically and responsibly. (Professionalism and Ethics)

5. PROGRAMME STRUCTURE

The curriculum has been designed keeping in view the future needs of Malaysia, in particular, and other countries in the world. The programme has been developed to meet the needs of those employed in various Engineering fields related professions wishing to expand their expertise in various sub-disciplines. The research component of the curriculum allows students to plan the greater part of the taught element of the programme to suit their individual background and future career development. Table 2 shows the relevant course category for MSENG candidates.

Table 2: Course Category and Course Credit for MSENG

No.	Course Category	Course Credit
1	UniCORE - RKGS 7001	0
2	Research Methodology & Seminar	0
4	Thesis	42
Total		42

6. DURATION OF STUDY

Programme	Type	Duration of Study
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		Minimum	Normal	Maximum
MSC	Full Time	1 Year (2 Semesters)	2 Years (4 semesters)	3 Years (6 semesters)
	Part Time	2 Years (4 semesters)	4 Years (8 semesters)	5 Years (10 semesters)

KOE website: <https://www.iium.edu.my/kulliyah/koe/programmes>