

Admission Requirements

- i. Bachelor in the field of Engineering or Engineering Technology with CGPA of 2.750 ; or
- ii. Bachelor in the field of Engineering or Engineering Technology with CGPA of 2.500-2.749 with at least 3 years of working experience in relevant field ; or
- iii. Bachelor in the field of Engineering or Engineering Technology with CGPA of 2.250-2.499 with at least 5 years of working experience in relevant field ; or
- iv. Bachelor in any related field of Science or Technology with CGPA of 3.000 ; or
- v. Bachelor in any related field of Science or Technology with CGPA of 2.750-2.999 with at least 3 years of working experience in relevant field ; or
- vi. Bachelor in any related field of Science or Technology with CGPA of 2.500-2.749 with at least 5 years of working experience in relevant field.

Note: Candidates with Bachelor of Science or Technology degrees or their equivalents are admitted, prerequisite modules in Engineering must be offered to adequately prepare them for their advanced study.

Language Requirements

International candidates are required to fulfill English language requirement as follows:

- a) 550 for TOEFL Paper-based Test (Academic Version); or
- b) Band 6.0 for IELTS (Academic Training); or
- c) 79-80 for TOEFL Internet-based Test (Academic Version).

Candidate without the requisite minimum score for TOEFL or IELTS may be granted a provisional admission. Such candidate will be required to pass an English Placement Test conducted by the University.



Fees

Fees	Master without thesis	
	Malaysian Student	International Student
Basic Fees (1 st semester)	RM 1,425	RM 2,475
Basic Fees (2 nd and subsequent semester)	RM 1,175	RM 2,225
Credit Fees * subject to change	RM 250 / credit	RM 400 / credit



APPLICATION

Please apply online via:

<http://sgsportal.upm.edu.my:8080/sgsportal>
www.sgs.upm.edu.my/prospective_students-2964

For further information, please contact :

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MASTER OF INNOVATION AND ENGINEERING DESIGN

Faculty of Engineering, Universiti Putra Malaysia

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INTRODUCTION

The Master Programme in Innovation and Engineering Design (MIED) is uniquely designed for students with a passion for creating new, innovative products, improving existing designs, and research and development of designs and products. The MIED Programme at Universiti Putra Malaysia aims to provide engineers and designers with the latest advanced design techniques to be applied in industrial and engineering works. It is also the first programme of its kind to be established in Malaysia. Students of the MIED Programme will learn a variety of subjects related to Innovation, Design Techniques, Business Practices and Patents. The courses offered are designed to produce graduates with the knowledge and skills to analyse, improve and develop new designs that are able to increase the productivity and quality of products for the benefit of society and industry.

PROGRAMME REQUIREMENTS

Credit Requirements for Graduation

Students enrolling under this programme must fulfill 40 credits of courses to graduate. The credit distributions for compulsory courses, elective courses and project are as follows:

- Compulsory Courses 24 credits
- Elective Courses 6 credits
- Dissertation 10 credits

Compulsory Courses

Students must take all the listed compulsory courses;

EAS5100	Research Methodology	3 credits
EAS5105	Innovation Studies	3 credits
EAS5106	Innovation and Product Commercialization	3 credits
EAS5107	Entrepreneurship in Innovation	3 credits
EAS5401	Engineering Material in Design	3 credits
EAS5701	Global Design	3 credits
EAS5703	Advanced Computer Aided Design	3 credits
EAS5704	Advanced Design Technique	3 credits
EAS5990	Dissertation	10 credits

Note : EAS5990 - Dissertation is carried out over two semesters (4+6 credits)

Elective Courses

Students must take only two elective courses (6 credits) out of the listed

EAS5104	System Engineering	3 credits
EAS5201	Computational Fluid Dynamics	3 credits
EAS5402	Innovation in Structural Condition Monitoring	3 credits
EAS5403	Finite Element Analysis	3 credits
EAS5702	Optimization and Reliability in Design	3 credits
EAS5707	Multi-Disciplinary Design Methods	3 credits
EAS5955	Special Topic	3 credits
EAS5001	Advanced Engineering Mathematics	3 credits

Course Synopsis

ECV5100 | Research Methodology | 3 Credits

This course covers best practices in research such as research methodology, design and ethics as well as academic writing and oral presentations.

EAS5105 | Innovation Studies | 3 Credits

The course provides an overview of the basic concepts of innovation process and methodology. The emphases are given on development of basic innovation skill and solution to innovation problem.

EAS5106 | Innovation and Product Commercialization | 3 Credits

This course provides an overview of the basic concepts of intellectual property and further emphasizes patent intellectual property from the development of the designated product to the patent application documentation. The emphases are given on IP development skill and IP commercialization.

EAS5107 | Entrepreneurship in Innovation | 3 Credits

This course covers an introduction to entrepreneurship and to the process of identifying innovative opportunities, with an emphasis on process of evaluating, conceptualizing, and planning new, technology-based ventures. Emphasis is given on skills of business development and business plan, by considering financial support, management, leadership skill, and global business development, which are supported by variety of case studies.

EAS5401 | Engineering Material in Design | 3 Credits

This course covers the basic principles of engineering materials in designing, the link between engineering materials and non-engineering factors and methods of development and analysis of engineering materials. Emphasis is given on the ability to identify materials that are appropriate to the design and to analyse materials using charts and methods of material selection.

EAS5701 | Global Design | 3 Credits

This course covers methods of managing design projects, design document frameworks and design tools and materials used by designers. Emphasis is given on exposure on design processes and the latest design methods.

EAS5703 | Advanced Computer Aided Design | 3 Credits

This course covers background knowledge of computer-assisted advanced design (CAD) systems and the importance of using CAD software in design. Emphasis is given on drawing skills using design-based computer software to help students produce 2D and 3D design drawings and analyze kinematic movements of a product as well as produce basic products using 3D printers.

EAS5704 | Advanced Design Technique | 3 Credits

This course covers the process and development of design products ranging from the development of product concepts to making comparisons and selection of potential concepts. Emphasis is given on skills using the latest tools and methods in the development of design products.

EAS5104 | System Engineering | 3 Credits

This course covers topics on advanced design methods such as design of experiments, decision-making techniques and methods for multi-disciplinary optimization. It also includes discussion on emerging new and modern methods in product design process. Emphasis is given on selection skills and the use of advanced and up-to-date design methods.



EAS5201 | Computational Fluid Dynamics | 3 Credits

This course covers the methods of computational fluid dynamics and its use in design. Emphasis is given to solving skills of fluid motion equations and skills using advanced techniques in design involving heat transfer and engineering model development for product design.

EAS5402 | Innovation in Structural Condition Monitoring | 3 Credits

This course covers the processes and methods of identifying the health identity and damage of a product. Emphasis is given on skills in identifying and utilizing appropriate structural health methods, analyzing existing and new design products and monitoring the health of the structure of a design product.

EAS5403 | Finite Element Analysis | 3 Credits

This course covers the formulation of finite element equations to solve problems related to the resilience of a design. Emphasis is given on various theories of failure in product structure and skills analyzing 2D and 3D stress-strain problems.

EAS5702 | Optimization and Reliability in Design | 3 Credits

This course covers the latest methods in optimizing product design processes and design reliability. Emphasis is given to skills using optimization techniques and reliability and using the appropriate formula for optimization processes to solve problems related to innovation and design.

EAS5707 | Multi-Disciplinary Design Methods | 3 Credits

This course covers topics on advanced design methods such as design of experiments, decision-making techniques and methods for multi-disciplinary optimization. It also includes discussion on emerging new and modern methods in product design process. Emphasis is given on selection skills and the use of advanced and up-to-date design methods.

EAS5955 | Special Topic | 3 Credits

This course deals with selected innovation and engineering design fields according to current development. The studies will be based on topics that are determined by the appointed lecturer. The course emphasises knowledge seeking pertaining to the topic and producing technical report in terms of writing and oral: individually and/or in group.

EAS5001 | Advanced Engineering Mathematics | 3 Credits

This course covers the formulation of basic equations to form the appropriate formula for solving a problem. Emphasis is given to skills analyzing various problems in design by taking into account design constraints.

EAS5990 | Dissertation | 10 Credits

This course involves a research or study by a student on a specific topic. It covers literature review, methodology, data collection and analysis under a supervision of a lecturer. A proposal report needs to be prepared at the beginning of the study. At the end of the project, the student will submit a complete dissertation and research output for evaluation. The student is also required to present the findings of the study to a panel of assessors.