Faculty of Engineering
Department of Mechanical and Manufacturing Engineering
www.eng.upm.edu.my

Master of Engineering Management

BERILMUBERBAKTI
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INTRODUCTION

Engineering Management is concerned with the design, improvement, and implementation of integrated systems of people, material, information, equipment, and energy. It draws upon specialized knowledge and skills in the mathematical, physical, and social sciences together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results obtained from such systems.

PROGRAMME REQUIREMENTS

Credit Requirement for Graduation

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

<table>
<thead>
<tr>
<th>Compulsory Courses</th>
<th>24 credits</th>
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</thead>
<tbody>
<tr>
<td>Elective Courses</td>
<td>6 credits</td>
</tr>
<tr>
<td>Dissertation</td>
<td>10 credits</td>
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</tbody>
</table>

Compulsory Courses

Students must take all the listed compulsory courses:

- EMM5100 Research Methodology 3 credits
- EMM5602 Total Quality Management 3 credits
- EMM5604 Industrial Marketing Management 3 credits
- EMM5606 Manufacturing Operation Management 3 credits
- EMM5608 Industrial Organisation Management 3 credits
- EMM5616 Industrial Safety, Health and Environmental Management 3 credits
- EMM5628 Financial Analysis for Engineers 3 credits
- EMM5630 Project and Risk Management in Engineering 3 credits

Elective Courses

Students must take two (2) elective courses out of the listed courses:

- EMM5614 Maintenance Management Systems 3 credits
- EMM5620 Value Engineering 3 credits
- EMM5624 Supply Chain Management 3 credits
- EMM5626 Technology Management 3 credits
- EMM5702 Advanced Manufacturing Technology and Processes 3 credits
- EMM5706 Design of Manufacturing Systems 3 credits
- EMM5714 Facilities Layout 3 credits

Identification on the elective courses for the student will be made by the program coordinator.

Dissertation

EMM5990 Dissertation 10 credits

Students are recommended to register for EMM5990 for 4 credits in the second semester and another 6 credits in the third semester. Student will be assessed by a panel of examiners based on the submitted report and oral presentation at the end of the dissertation duration.
Course Synopsis

- EMM5100  • 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.

- EMM5602  • Total Quality Management  • 3 credits
  This course prepares students to identify the role, importance, implementation and contribution of total quality in industry. It also prepares students to apply methods and techniques to help upgrade quality continuously in an organisation.

- EMM5604  • Industrial Marketing Management  • 3 credits
  This course covers the differences between industrial or business-to-business (B2B) marketing with consumer marketing. This course also discusses the concepts of core marketing in industrial markets, design, and performance evaluation through various marketing approaches. The discussion also includes generic marketing strategies and marketing tools used in the development of marketing mix in the industrial markets.

- EMM5606  • Manufacturing Operations Management  • 3 credits
  This course provides students with concepts, methodology and tools to analyse, improve core operational capabilities, and apply them in manufacturing business organisations. It also emphasizes on the strategic decision-making to ensure successful transformation of inputs to outputs in an efficient manner, simultaneously meeting customer requirements.

- EMM5608  • Industrial Organisation Management  • 3 credits
  This course covers the principles and concepts of efficient management in decision-making and impacts of environmental forces. The emphasis is also given on the responsibility of the leader or manager in organizing, leading, controlling and planning changes to an organizational.

- EMM5614  • Maintenance Management Systems  • 3 credits
  This course provides students with techniques and strategies to analyse profitability performance, production capacity and equipment reliability in the maintenance management. It also emphasizes on the importance of the maintenance planning and control with various best practices to achieve organizational requirements.

- EMM5616  • Industrial Safety, Health and Environmental Management  • 3 credits
  This course covers assessments on safety, health and environmental management, which include the identification and control of hazards in the workplace and the human variables involved in causing and preventing accidents. It also discusses the relevant laws, regulations and standards as they apply to workplace safety and health and relevant issues in promoting safety and health in the organization.

- EMM5620  • Value Engineering  • 3 credits
  This course covers the background of value engineering (VE), the principles of VE, the differences between VE and other improvement techniques, the VE framework includes 7 phases of the VE framework. This course exposes students to the use of various analytical techniques especially function analysis in synergistic team.

- EMM5624  • Supply Chain Management  • 3 credits
  This course covers the basic understanding, system development and application of supply chain management. This course also emphasizes the importance of implementing effective supply chain management in organizations.

- EMM5626  • Technology Management  • 3 credits
  This course provides student with recent technology in planning for the new product development. It emphasizes on the planning development method for technology management and creativity in the making of new product. It is also comprised of technology management concept in decision making.

- EMM5628  • Financial Analysis for Engineers  • 3 credits
  This course covers the analysis of financial statement of business organizations based on capital and operating expenditures, analysis of breakeven points to determine selling price. This course also discusses investment planning and strategic financial decision making for engineering project.

- EMM5630  • Project and Risk Management in Engineering  • 3 credits
  This course covers the elaboration of project and risk management in engineering. This course also prepares students with the method to construct project proposals with regard to risks in project development. Project control and implementation methods are emphasized to ensure the objectives, time and cost of the project can be achieved.

- EMM5702  • Advanced Manufacturing Technology and Processes  • 3 credits
  This course provides the students with concepts, methods of material selection and manufacturing processes using the latest technology by considering the requirements and specifications to produce sustainable products. This course also emphasizes on the development of production technology and effective testing methods to produce quality products.

- EMM5706  • Design of Manufacturing Systems  • 3 credits
  This course provides the students with concepts, structured methodology and effective tools to analyse, improve operational processes, and apply them in designing the manufacturing system. It emphasizes on the efficient evaluation to ensure the built-in manufacturing system can optimize the production yields and produces quality products.

- EMM5714  • Facilities Layout  • 3 credits
  This course provides students with planning, facilities layout design, flow analysis and activity relationship analysis for the development of facilities layout. Conventional technique and modern computing are applied in designing facilities layout to reduce the flow of material handling at minimal-cost.

- EMM5990  • Dissertation  • 10 credits
  This course involves a research or study by a student on a specific topic. It is carried out in two semesters and covers literature review, methodology, data collection and analysis. The scope of research or study will be determined by the supervisor in consultation with the student. At the end of the first semester, the student needs to submit a preliminary report and at the end of second semester, the student needs to submit a final report. The student is also required to present the findings of the research of study to a panel of assessors.

For further information
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ADMISSION REQUIREMENTS

a) An applicant with a Bachelor degree in Engineering with CGPA 2.750/ Second Class Lower or;
b) An applicant with a Bachelor degree in Engineering with CGPA 2.500/Second Class Lower and at least three (3) years working experiences in relevant field or;
c) An applicant with a Bachelor degree in Science or Technology with CGPA 3.000/Second Class Upper or;
d) An applicant with a Bachelor degree in Science or Technology with CGPA 2.750/ Second Class Lower and at least three (3) years working experiences in relevant field or;
e) An applicant with an equivalent qualification to Bachelor degree recognized by the professional bodies or Malaysian Qualification Agency (MQA).

Note:
* Candidates with Bachelor degree in Science or Technology or equivalent are required to take remedial course to fulfil the prerequisite module established by programme coordinator.
* Refer to programme coordinator for more information on admission requirements.

FEES

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<thead>
<tr>
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<th>Master without thesis</th>
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<tbody>
<tr>
<td></td>
<td>Malaysian Student</td>
</tr>
<tr>
<td>Basic Fees (1st semester)</td>
<td>RM 1,250</td>
</tr>
<tr>
<td>Basic Fees (2nd and subsequent semester)</td>
<td>RM 1,000</td>
</tr>
<tr>
<td>Credit Fees</td>
<td>RM 250.00 / Credit Hour</td>
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</tbody>
</table>

Language Requirement

A Malaysian candidate must have obtained at least a credit in English at Sijil Pelajaran Malaysia level or have passed English courses conducted at the Diploma or Bachelor’s Level.

All international candidates from countries where English is not a medium of instruction must have obtained a minimum score of 550 for TOEFL Paper-based Test (Academic Version); or Band 6.0 for IELTS (Academic Training) ; or 79-80 for TOEFL Internet-based Test (Academic Version).

A 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.

A candidate who has failed the English Placement Test will be required in the first semester to pass a prescribed English course. Should the candidate fail to obtain the prescribed minimum grade, the University may allow him to repeat the prescribed English course in the second semester.

A candidate who fails after the second attempt will have his candidature suspended until he passes the English course before being allowed to continue with his Masters programme.

Application For Admission

Please apply online via http://sgsportal.upm.edu.my:8080/sgsportal/
Tel. : (603) 9769 4218/4223/4228
Website : http://www.sgs.upm.edu.my/prospective_students-2964