

1. Programme title(s):

MEM – Master of Engineering Management

MEM – Master of Engineering Management with Industry

Postgraduate Certificate in Engineering Management (exit award only)

Postgraduate Diploma in Engineering Management (exit award only)

Postgraduate Diploma in Engineering Management, with Industry (exit award only)

2. Awarding body or institution:

University of Leicester

3. a) Mode of study:

MEM: Full-time.

MEM with Industry: Full-time.

With Industry only: The taught modules would all be taken in the first two semesters. This is followed by the industrial placement, which is between 3 and 12 months long, and would be taken following the end of the first year May/June exam period. This is followed by the in-house project, taking 10 weeks.

b) Type of study:

The taught modules and project are campus based.

The Industrial placement ('with Industry' programme only) is off campus, on the site of the company concerned.

4. Registration periods:

The normal period of registration for the MEM is 12 months, the maximum period is 24 months.

5. Typical entry requirements:

Academic:

Candidates should normally have at least a good second class honours degree in a relevant subject from a British university; or a qualification recognized by the University as equivalent.

Candidates who have acquired experience through work or other means that enables staff responsible for admissions to be confident of the candidate's ability to succeed in the programme will be considered.

English language

Candidates whose first language is not English will be required to provide evidence of appropriate language skills. A score of 6.5 in IELTS or an equivalent is required, but if candidates have been instructed in their u/g courses in English in certain countries for a period of at least two years, this may be deemed adequate. Courses at the University's English Teaching Unit are offered to candidates who fail this requirement. The course must be completed before the MSc can begin.

6. Accreditation of Prior Learning:

None

7. Programme aims:

This is an advanced career entry programme focussed on industrial careers in the engineering / technology sector. The focus of this programme is Engineering Management. A more practical and engineering-focussed alternative to an MBA for aspiring engineering managers, the Masters in Engineering Management (MEM) is designed to train and develop future leaders of technological companies.

Incorporating distinctive modules such as Lean manufacturing, product and service design, Cost Management, Value Driven Design and Engineering Business Management, the MEM covers usable pragmatic management techniques to complement the technical skills that are necessary for future leaders in the Engineering industry. The technical element of this programme will be dominated by systems engineering, concurrent engineering methodologies and quantitative engineering management techniques that will allow students to design engineering products that are optimum business solutions. The combination of advanced business optimisation and management methodologies will equip students with the knowledge and skills required to secure leadership roles in global engineering industries.

8. Reference points used to inform the programme specification:

QAA Subject benchmark statement for Masters degrees, available at:

<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/MastersDegreeCharacteristics.pdf>

QAA Frameworks for Higher Education Qualifications,

<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>

QAA subject benchmark statement for engineering (2010 edition)

<http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-Engineering-.pdf>

Engineering Council UK Standard for Professional Engineering Competence 3rd Edition (UK-SPEC).

[http://www.engc.org.uk/engcdocuments/internet/Website/Accreditation%20of%20Higher%20Education%20Programmes%20third%20edition%20\(1\).pdf](http://www.engc.org.uk/engcdocuments/internet/Website/Accreditation%20of%20Higher%20Education%20Programmes%20third%20edition%20(1).pdf)

QAA Benchmarking Statement for Business and Management:

<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Subject-benchmark-statement-Masters-degrees-in-business-and-management.aspx>

University of Leicester Senate Regulations:

<http://www2.le.ac.uk/offices/sas2/regulations/general-regulations-for-taughtprogrammes>

University of Leicester Code of Practice on Examining:

<http://www2.le.ac.uk/offices/sas2/quality/codes/examining>

University of Leicester Learning & Teaching Strategy:

<http://www2.le.ac.uk/offices/sas2/quality/learnteach>

9. Programme Outcomes:

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
<i>(a) Discipline specific knowledge and competencies</i>		
Knowledge		
A successful student will develop, and therefore be able to deploy a core knowledge of general and specialist Engineering management topics and techniques to problems encountered in engineering industries (PGCert/PGDip/MEM), and apply this knowledge to a major extended engineering management case study (MEM only)	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
Concepts		
A successful student will explain and critique the application of general and specialist engineering management techniques (such as project management methodologies, cost engineering and value driven design) to engineering systems and products (PGCert/PGDip/MEM). A successful MEM student will demonstrate the selection and application of appropriate techniques to a substantive engineering management problem.	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Techniques		
A successful student will apply general and specialist engineering management techniques to undertake analysis of engineering systems and to critique the business performance of engineering systems and products (PGCert/PGDip/MEM) and to a major substantive case study (MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
Critical analysis		
A successful student will critically appraise results of engineering management analyses, results and literature on the discipline of management and its application in engineering, including in different cultural, environmental and organisational contexts (PGCert/PGDip/MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
Presentation		
A successful student will present and defend scientific and business results, management analysis and conclusions in an organized and appropriate medium to a professional standard with clarity, fluency and coherency (PGCert/PGDip/MEM), and present the results of a substantive team engineering management project (MEM).	Exercises, Tutorials, Group discussion, Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Appraisal of evidence		
<p>A successful student will locate, organise and assess data, analyse complex ideas and appraise and criticise different arguments (PGCert/PGDip/MEM).</p> <p>A successful student will conduct independent inquiry, evaluating engineering management topics and application at an advanced level and proposing and justifying solutions (MEM only)</p>	<p>Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative).</p> <p>Major project work, including team meetings and supervision meetings.</p>	<p>Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.</p>
<p><i>MEM with industry students only:</i></p> <p>Practical experience of the application of knowledge, concepts and techniques of engineering and management to processes and systems in a real industrial environment.</p>	<p>Talk from Student Support in induction, 'with industry' support programme. Industry-based experience, individual advice from project supervisor.</p>	<p>Successful completion of 'with industry' activities organised by college. Industry report.</p>
(b) Transferable skills		
Research skills		
<p>A successful student will demonstrate intellectual independence through selecting appropriate methods (PGCert/PGDip/MEM), applying them to unfamiliar context and delivering a credible and substantial research project at an advanced level (MEM)</p>	<p>Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative).</p> <p>Major project work, including team meetings and supervision meetings.</p>	<p>Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.</p>
Communication skills		
<p>A successful student will be able to communicate to an acceptable standard in a professional environment (PGCert/PGDip/MEM).</p>	<p>Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative).</p> <p>Major project work, including team meetings and supervision meetings.</p>	<p>Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.</p>

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Data presentation		
A successful student will be able to select and use appropriate IT, Analytical and graphical methods, CAD drawings, Statistics, financial results, and be able to locate, organise and marshal evidence and select and apply appropriate software packages for quantitative analysis (PGCert/PGDip/MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
Information technology		
A successful student will be able to use standard and specialist IT tools (PGCert/PGDip/MEM, if appropriate developing tools or templates or applying programmes in unusual contexts (MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
Problem solving		
A successful student will be able to propose one-off and continuous improvements to processes in specific contexts (PGCert/PGDip/MEM) and in complex, industrially relevant situations (MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
Working relationships		
A successful student will demonstrate effective skills in project management, organisation, time management (PGCert/PGDip/MEM) collaborative and responsible working and/or leadership in teams (MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Coursework exercises, tutorial questions. Major project report and presentation.

Intended Learning Outcomes	Teaching and Learning Methods	How Demonstrated?
Managing learning		
A successful student will demonstrate advanced study skills and identify their strengths and interests, including self-reflection upon behaviour and skills with a view to personal and professional development (PGCert/PGDip/MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
Career management		
A successful student will reflect on motivation, strengths, interests and skills, using this to identify future career opportunities (PGCert/PGDip/MEM).	Lectures, Specified reading, Exercises, Tutorials, Group discussion, private study, and assignment feedback (formative and summative). Major project work, including team meetings and supervision meetings.	Module examinations, coursework exercises, tutorial questions, individual reports/essays. Major project report and presentation.
<i>MEM with industry students only:</i> A successful student will appreciate the career opportunities available in the sector, common employers and the value of the skills developed by their MEM in a commercial industrial setting.	Talk from Student Support in induction, 'with industry' support programme. Industry-based experience, individual advice from project supervisor.	Successful completion of 'with industry' activities organised by college. Industry report.

10. Special features

The Masters in Engineering Management (MEM) with Industry variant is the same as the Masters in Engineering with Management programme in the modules offered. The difference is that students undertake an industrial placement. This is organised in exactly the same manner as the 'with Industry' option on the existing MSc programmes offered by the Department of Engineering:

- i. After completing the eight taught modules and May/June exams in the first year of the course, students will carry out between 3 and 12 months of paid full- time work in an industrial placement. Students will be encouraged to undertake the maximum period of employment possible, to gain the full benefit of experience in industry. Students satisfying the normal PGT criteria for passing taught modules, will aim to start their placement between June and September of the first year and finish it by the end of the May/June exam period of the second year. Companies providing placement opportunities will be made aware of the possible need for students to return to campus briefly in September of the first year for resit exams. On their return from placements, students will carry out an in-house project in the Department, as per the normal non-Industry MEM. The project will be supervised and assessed within the Department. The project title will be decided, in conjunction with the student, while she/he is on placement.

- ii. During the placement, appropriate support will be provided by the Department as laid out in the Code of Practice on Student Placements published by the Quality Office. An additional member of staff has been employed as an Industrial Placement Officer to arrange the placements and to contact the students each term, answer any concerns they may have and check that they are doing work appropriate for an MEM student and are receiving the necessary support and guidance. Each student will also be assigned to a named Mentor in the industrial placement.
- iii. During their placement students will undertake a programme of training and practical experience which will be agreed by the placement company and the University, and will be specific to the particular placement.
- iv. Students will be expected to keep a log-book recording their training and experience which is to be presented for approval to the sponsoring company and the University. After the placement, the student will present a report detailing their work, but also explaining how their skills fit into the team in which they worked, how this team serves the overall company, and how the company fits into the industrial sector. This report is the only assessment concerned with the industrial placement, and will be assessed on a pass/fail basis, and will have no credit weighting in the MEM.
- v. Students who do not satisfactorily complete their industrial placement will receive an ordinary MEM.
- vi. Any intellectual property generated during the placement will belong to the industrial partner.
- vii. The salary paid by the industrial partner to the student will be a matter to be agreed between these two parties, although the departmental representative will make a recommendation.

11. Indicators of programme quality

Programme external examiners in engineering will consider the programme as a whole (all modules) and the engineering modules in particular. The management modules are also taken by other cohorts of students and are therefore subject to a second independent review. Experience with other programmes where MSc students take modules from a second department has recently shown this to be a very positive way of maintaining academic standards and industrial relevance.

Industrial placement quality will be managed in the same way as for existing 'with industry' programmes. Full details were considered when the MSc with Industry programmes were put through full programme approval for first entry in 2013/14. These are supported by the Industrial Placement Officer.

12. Scheme of Assessment:

As defined in [Senate Regulation 6](#): Regulations governing taught postgraduate programmes of study.

Normal schemes of assessment will apply, however special conditions are required for the PGCert exit route to ensure engineering / management learning outcomes achieved are appropriate to the title of the award.

If only the management (MN) modules are passed a PGCert in Management will be awarded. For other combinations of passes a PGCert in Engineering Management or a PGDip in Engineering Management will be awarded in accordance with the normal provisions of Senate Regulation 6.

13. Progression points

As defined in [Senate Regulation 6](#): Regulations governing taught postgraduate programmes of study.

It is expected that the rules of progression governing taught postgraduate programmes as published in the General Regulations will apply in all cases.

Students registered for the programmes (with and without industry element) who fail to satisfy the requirements for an MEM will be removed from the MEM programme and considered for a PGCert without the industry option. This is the same rule as for existing 'with industry' MSc programmes in the dept. of Engineering.

14. Rules relating to re-sits or re-submissions:

As defined in [Senate Regulation 6](#): Regulations governing taught postgraduate programmes of study.

14. External Examiners reports

To be included following receipt of first report.

15. Additional features (e.g. timetable for admissions)

None.

Appendix 1: Programme structure (programme regulations)

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Postgraduate Diploma in Engineering Management (exit award only)

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Semester 1

Compulsory modules:

Dept. of Engineering Induction	0	Week 1 / Sem 1
MN7403 Accounting and Finance for Managers	15	Sem 1
MN7402 Business Economics	15	Sem 1
EG7311 Engineering Project Management	15	Sem 1
EG7312 Systems Engineering	15	Sem 1

Semester 2

Compulsory modules:

MN7406 International Business	15	Sem 2
EG7321 Engineering Business Management	15	Sem 2
EG7322 Lean Engineering	15	Sem 2
EG7323 Cost Engineering	15	Sem 2
EG7301 Masters in Engineering Management Project	60	Sem 2/Summer

‘with industry’ programme includes an industrial placement of 3-12 months, following the end of the first year May/June exam period, with students returning to UoL to complete the project/dissertation after their placement.

Appendix 2: Module specifications

See individual module specifications.