MSc Engineering Management

Programme Specification

1. Programme title	MSc Engineering Management
2. Awarding institution	Middlesex University
3a. Teaching institution	*Hendon and Dubai*
3b. Language of study	*English*
4a. Valid intake dates	*Hendon - September* *Dubai - September, January*
4b. Mode of study	*Full-time and Part-time*
4c. Delivery method	☒ On-campus/Blended ☒ Distance Education (Dubai only)
5. Professional/Statutory/Regulatory body	Institution of Engineering Designers (IED)
6. Apprenticeship Standard	N/A
7. Final qualification(s) available	MSc Engineering Management PGDip Engineering Management PGCert Engineering Management
8. Year effective from	**2024/25**

9. Criteria for admission to the programme

Applicants will be expected to have a good honours degree or equivalent in an engineering based discipline. Graduates from other related disciplines may also be admitted to the programme after interview. Preference will be given to graduates with industrial experience. In addition candidates will have such qualities as being creative, proactive and having a desire to engage with the curriculum, and be able to think as an individual but able to work in a team. Candidates should be able to show a keen interest in engineering in all its aspects.

It is strongly advised that the applicants address these in their personal statement in their application. Successful applicants must have competence in English language. For international applicants whose first language is not English the requirement is that

they have IELTS 6.5 (with minimum 6.0 in each components) or an equivalent qualification recognised by Middlesex University.

For students joining into the programme in DE mode, a computer with decent capabilities (windows machine with 8GB RAM and 500GB HDD) and stable internet connection (100 Mbps speed) would be expected.

10. Aims of the programme

The programme aims to take graduates of an engineering discipline and equip them with specialist knowledge and skills in Engineering Management to allow them to control effectively engineering businesses for success in global markets.

11. Programme outcomes*

A. Knowledge and understanding On completion of this programme the successful student will have knowledge and understanding of : 1. Techniques for management of human and financial resources. 2. Critical awareness of the theory behind current management and business practices. 3. Professional responsibilities including the global, social, ethical and environmental context of engineering. 4. Evaluation of methods and research for achieving optimal supply chains. 5. Project management methods such as evolutionary techniques and scheduling tools. 6. Process planning and improvement of product development. 7. Risk assessment and risk management methods	**Teaching/learning methods** Students gain knowledge and understanding through task-based learning, participating in management games, working with industrial partners, observing processes, writing, presenting and critical analysis. Students will be given individual tasks directly related to their chosen programme. Distance Education Mode: Students gain knowledge and understanding through online task-based learning, participating in management games, working with industrial partners, observing processes, writing, presenting and critical analysis. Students will be given individual tasks directly related to their chosen programme. **Assessment methods** Students' knowledge and understanding is assessed by project work, hands-on-tasks, coursework, presentations and the group project report. Formative threshold tests will be used to assess competence in stage techniques on a pass/fail basis with opportunity to retake at any time before the end of the module. Distance Education Mode: Students' knowledge and understanding is assessed by project work, hands-on-tasks that are monitored online during online

	sessions, coursework, presentations during supervised synchronous online sessions and the group project report. Formative threshold tests will be used to assess competence in stage techniques on a pass/fail basis with opportunity to retake at any time before the end of the module.
B. Skills On completion of this programme the successful student will be able to: 1. Creatively solve engineering management problems. 2. Demonstrate critical thinking in order to solve real industrial problems posed to senior management. 3. Make a financial and human resource case for a particular course of action to solve a realistic management problem. 4. Work on a number of senior company management level tasks concurrently and show how they can be controlled effectively. 5. Visualise the consequences of particular actions in a management situation and plan effective solutions that can be used to cope with these consequences. 6. Validate and optimise business plans with full consideration of human and financial consequences. 7. Use simulation to analyse and make business improvements. 8. Design and implement engineering management systems to guarantee company success. 9. Communicate orally via professional presentations. 10. Handle engineering management problems that require numerate skills that would cause company failure if not solved correctly.	**Teaching/learning methods** Students learn skills through completing mini-projects, problem solving activities, oral presentations and through report writing. Distance Education Mode: Students learn skills through completing mini-projects, problem solving activities, oral presentations and through report writing. **Assessment methods** Students' skills are assessed by coursework comprising of individual mini-projects, assignments, group and individual presentations and team projects. Distance Education Mode: Students' skills are assessed by coursework comprising of individual mini-projects, assignments, group and individual presentations during supervised synchronous online sessions and team projects.

12. Programme structure (levels, modules, credits and progression requirements)

12.1 Overall structure of the programme

MSc Engineering Management (Full-time mode)

Term 1	**PDE4232** Financial Management in Engineering [15]	**PDE4905** Engineering Simulation [30]	**PDE4910** Logistics and Supply Chains [30]	**PDE4911** Engineering Project Management [30]
Term 2	**PDE4233** Human Resource Management in Engineering [15]			
Term 3	**PDE4241** Engineering Management Group Project [60]			

MSc Engineering Management (Part-time mode)

Year 1:

Term 1	**PDE4232** Financial Management in Engineering [15]	**PDE4911** Engineering Project Management 30]
Term 2	**PDE4233** Human resource management in engineering [15]	

Year 2:

Term 1	**PDE4905** Engineering Simulation [30]	**PDE4910** Logistics and Supply Chains [30]
Term 2		
Term 3	**PDE4241** Engineering Management Group Project [60]	

12.2 Levels and modules		
Level 7		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all of the following: PDE 4232 Financial Management in Engineering (15 credits) PDE4233 Human Resource Management in engineering (15 credits) PDE4910 Logistics and Supply Chains (30 credits) PDE4911 Engineering Project Management (30 credits) PDE4905 Engineering Simulation (30 credits) PDE4241 Engineering Management Group Project (60 credits)	There are no optional modules on this programme.	For the named PGCert award students must complete 60 credits of: PDE4232, PDE4233, PDE4905, PDE4910 or PDE4911. For the named PGDip award students must complete all five of PDE4232, PDE4233, PDE4910, PDE4911 and PDE4905. Students must obtain 120 credits at level 7 in order to progress onto PDE4241 Engineering group project management.

12.3 Non-compensatable modules	
Module level	**Module code**
7	PDE4241

13. Information about assessment regulations

This programme will run in line with general University Regulations:

Middlesex University regulations

14. Placement opportunities, requirements and support (if applicable)

n/a

15. Future careers / progression

Graduates from the programme will be expected to enter into engineering management with highly specialised operational skills that are much sought after worldwide. The programme content will be enriched by keeping industrial partners' engagement active and offering sponsored projects. This will also help to support the students regarding current opportunities and future trends in their relevant employment sector.

16. Particular support for learning (if applicable)

Meeting the learning outcomes of this programme requires active participation in the subject and the development of autonomous practice in meeting objectives. Supporting this level of active participation and autonomous practice is achieved via regular weekly tutorial contact with academic staff, productive and informed support from technical staff and the use of online, resource-based learning materials where appropriate. The subject provides extensive facilities where students can engage with their coursework assignments in a supported and productive environment.

Distance education students are supported through video conferencing solutions like MS Teams for live sessions. All the lecture material, reading material and instructions are accessible on the module page on the Learning Environment (unihub).

17. HECos code(s)	100184 - general or integrated engineering
18. Relevant QAA subject benchmark(s)	Engineering (2019) Business and Management (2015)

19. Reference points

- QAA Engineering subject benchmark statement (2019)
- QAA Business and Management benchmark statement (2015)
- QAA Master's Degree Characteristics Statement (2020)
- QAA Framework for Higher Education Qualifications in England, Wales and Northern Ireland
- Middlesex University Regulations
- Middlesex University Learning and Quality Enhancement Handbook
- Chartered Engineer and Incorporated Engineer Standard, Engineering Council UK, 2020 • UK Standard for Professional Engineering Competence;
- The Accreditation of Higher Education Programmes, Engineering Council UK, 2020;
- IED Engineering Design Specific Learning Outcomes for EC(UK)Accredited Degree Programmes.

20. Other information

Please note programme specifications provide a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve if s/he takes full advantage of the learning opportunities that are provided. More detailed information about the programme can be found in the rest of your programme handbook and the university regulations.

21. Curriculum map for MSc Engineering Management

This section shows the highest level at which programme outcomes are to be achieved by all graduates, and maps programme learning outcomes against the modules in which they are assessed.

Programme learning outcomes

Knowledge and understanding	
A1	Techniques for management of human and financial resources.
A2	Critical awareness of the theory behind current management and business practices
A3	Professional responsibilities including the global, social, ethical and environmental context of engineering.
A4	Evaluation of methods and research for achieving optimal supply chains.
A5	Project management methods such as evolutionary techniques and scheduling tools.
A6	Process planning and improvement of product development
A7	Risk assessment and risk management methods
Skills	
B1	Creatively solve engineering management problems.
B2	Demonstrate critical thinking in order to solve real industrial problems posed to senior management.
B3	Make a financial and human resource case for a particular course of action to solve a realistic management problem.
B4	Select appropriate engineering management solutions.
B5	Plan ahead and prioritise actions in open ended tasks that require leadership.
B6	Validate and optimise business plans with full consideration of human and financial consequences
B7	Use simulation to analyse and make business improvements
B8	Design and implement engineering management systems to guarantee company success.
B9	Communicate orally via professional presentations.
B10	Handle engineering management problems that require numerate skills that would cause company failure if not solved correctly

Programme outcomes																
A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Highest level achieved by all graduates																
7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7

Module Title	Module Code by Level	A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
Financial Management in Engineering	PDE4232	X	X	X				X	X	X	X	X	X	X		X	X	
Human Resource Management in Engineering	PDE4233	X	X	X					X	X	X	X	X	X		X	X	
Engineering Simulation	PDE4905				X		X			X			X		X	X	X	X
Logistics and Supply Chains	PDE4910		X	X	X		X	X		X	X		X		X	X	X	X
Engineering Project Management	PDE4911	X	X	X		X		X	X	X	X	X	X		X	X	X	X
Engineering Management Group Project	PDE4241	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X