



**UNIVERSITY OF
PORTSMOUTH**

COURSE SPECIFICATION

MSc Systems Engineering Degree Apprenticeship

COURSE SPECIFICATION

Course Title	<i>MSc Systems Engineering</i>
Final Award	<i>MSc</i>
Exit Awards	<i>PGDip, PGCert</i>
Course Code / UCAS code (if applicable)	P3564PDC
Mode of study	<i>part time</i>
Mode of delivery	<i>day release (campus)</i>
Normal length of course	<i>3 years</i>
Cohort(s) to which this course specification applies	<i>September 2024 onwards</i>
Awarding Body	<i>Usually University of Portsmouth</i>
Teaching Institution	<i>University of Portsmouth</i>
Faculty	<i>Faculty of Technology</i>
School/Department/Subject Group	School of Electrical and Mechanical Engineering
School/Department/Subject Group webpage	https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-electrical-and-mechanical-engineering
Course webpage including entry criteria	https://www.port.ac.uk/study/courses/postgraduate-taught/msc-systems-engineering-degree-apprenticeship
Professional and/or Statutory Regulatory Body accreditations	<i>IET, IMechE</i>
Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level	<i>level 7</i>

This course specification provides a summary of the main features of the course, identifies the aims and learning outcomes of the course, the teaching, learning and assessment methods used by teaching staff, and the reference points used to inform the curriculum.

This information is therefore useful to potential students to help them choose the right course of study, to current students on the course and to staff teaching and administering the course.

Further detailed information on the individual modules within the course may be found in the relevant module descriptors and the Course Handbook provided to students on enrolment.

Please refer to the [Course and Module Catalogue](#) for further information on the course structure and modules.

Educational aims of the course

The course aims to equip students to work as technologists and/or members of management teams or as a leader, at an advanced level, in the fields of complex systems engineering and technology management. In addition, and more generally the course allows students to apply advanced skills and knowledge of:

- Complex engineering systems and techniques used for their critical analysis and effective management in order to provide individuals with the capability to accept broader and more responsible roles, both technical and managerial, within an atmosphere of continual change
- Engineering management role in the advanced design, analysis, investigation, implementation and operation of complex engineering systems
- Material and other resource utilisation and recovery with consideration of effective planning procedures for minimum waste
- Management and leadership roles in the investigation, implementation and operation of engineering systems for efficiency, cost effectiveness and quality of product
- Flexible systems approach to originating, adapting and developing processes and systems to meet changing technological, management, economic and social criteria

Course Learning Outcomes and Learning, Teaching and Assessment Strategies

The [Quality Assurance Agency for Higher Education \(QAA\)](#) sets out a national framework of qualification levels, and the associated standards of achievement are found in their [Framework for Higher Education Qualifications](#) document.

The Course Learning Outcomes for this course are outlined in the tables below.

A. Knowledge and understanding of:			
LO number	Learning outcome	Learning and Teaching methods	Assessment methods
A1	<i>Principles, procedures, strategies and general practice for systems engineering and technology management</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam, report</i>
A2	<i>Effective management, critical analysis and optimisation of whole systems, and their parts, information and resources for engineering and technology applications</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam, report</i>

B. Cognitive (Intellectual or Thinking) skills, able to:			
LO number	Learning outcome	Learning and Teaching methods	Assessment methods
B1	<i>Develop and maintain operations to meet quality standards throughout engineering systems, including manufacturing, organisation, information and supplier networks</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam</i>
B2	<i>Critically formulate a strategy for system operations, execution, analysis, optimisation and change management</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam</i>
B3	<i>Critically design and evaluate complex systems and implement them</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam</i>

C. Practical (Professional or Subject) skills, able to:			
LO number	Learning outcome	Learning and Teaching methods	Assessment methods
C1	<i>Apply principles of supply chain management, system integration, operation and control to solve practical problems in implementation of the lean and agile engineering operations</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam</i>
C2	<i>Reflect on and understand the engineering management in economic, social, ethical and environmental context</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam</i>
C3	<i>Diagnose, optimise and systematically manage engineering systems, processes, flow of materials and information, and resource utilisation</i>	<i>Lectures, tutorials, simulation</i>	<i>Coursework, exam, report</i>

D. Transferrable (Graduate and Employability) skills, able to:			
LO number	Learning outcome	Learning and Teaching methods	Assessment methods
D1	<i>Conduct appropriate research, read and understand complex engineering documentation and apply appropriate mathematical and analytical techniques in systems engineering and management</i>	<i>Lectures, tutorials</i>	<i>Coursework, presentation, report</i>
D2	<i>Communicate effectively in writing and other viable and appropriate forms of presentation</i>	<i>Lectures, group work</i>	<i>Coursework, presentation, report</i>
D3	<i>Show the ability to work effectively in multi-disciplinary teams to achieve objectives</i>	<i>Group work, simulation</i>	<i>Coursework, presentation</i>

Academic Regulations

The current University of Portsmouth [Academic Regulations: Examination & Assessment Regulations](#) will apply to this course. Approved course exemptions can be found [here](#).

Support for Student Learning

The University of Portsmouth provides a comprehensive range of support services for students throughout their course, details of which are available at the [MyPort](#) student portal.

Evaluation and Enhancement of Standards and Quality in Learning and Teaching

The University of Portsmouth undertakes comprehensive monitoring, review and evaluation of courses within clearly assigned staff responsibilities. Student feedback is a key feature in these evaluations, as represented in our [Policy for Listening to and Responding to the Student Voice](#) where you can also find further information.

Reference Points

The course and outcomes have been developed taking account of:

- [University of Portsmouth Curriculum Framework Specification](#)
- [University of Portsmouth Vision](#)
- [Office for Students Conditions of Registration](#)
- [University of Portsmouth Code of Practice for Work-based and Placement Learning](#)
- [Quality Assurance Agency UK Quality Code for Higher Education](#)
- [Quality Assurance Agency Qualification Characteristic Statements](#)
- [Quality Assurance Agency Subject Benchmark Statement](#) for **Engineering**
- [Quality Assurance Agency Framework for Higher Education Qualifications](#)
- Requirements of Professional and/or Statutory Regulatory Bodies: **Institution of Mechanical Engineers (IMechE), Institution of Engineering and Technology (IET)**
- Vocational and professional experience, scholarship and research expertise of the University of Portsmouth's academic members of staff
- National Occupational Standards

Changes to your course/modules

The University of Portsmouth has checked the information provided in this Course Specification and will endeavour to deliver this course in keeping with this Course Specification. However, changes to the course may sometimes be required arising from annual monitoring, student feedback, and the review and update of modules and courses.

Where this activity leads to significant changes to modules and courses there will be prior consultation with students and others, wherever possible, and the University of Portsmouth will take all reasonable steps to minimise disruption to students.

It is also possible that the University of Portsmouth may not be able to offer a module or course for reasons outside of its control, for example, due to the absence of a member of staff or low student registration numbers. Where this is the case, the University of Portsmouth will endeavour to inform applicants and students as soon as possible, and where appropriate, will facilitate the transfer of affected students to another suitable course.

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