COURSE SPECIFICATION

MSc Advanced Manufacturing

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Course Title	MSc Advanced Manufacturing
Final Award	MSc
Exit Awards	PGDip, PGCert
Course Code / UCAS code (if applicable)	P3278FTC/ P3278PTC
Mode of study	Full time / Part time
Mode of delivery	Campus
Normal length of course	1 year / 3 years
Cohort(s) to which this course specification applies	From September 2023 intake onwards
Awarding Body	Usually University of Portsmouth
Teaching Institution	University of Portsmouth
Faculty	Faculty of Technology
School/Department/Subject Group	School of Mechanical and Design Engineering
School/Department/Subject Group webpage	http://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-mechanical-and-design-engineering
Course webpage including entry criteria	https://www.port.ac.uk/study/courses/msc-advanced-manufacturing-technology
Professional and/or Statutory Regulatory Body accreditations	Institution of Mechanical Engineers (IMechE), Institution of Engineering and Technology (IET)
Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level	Level 7

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/scientists, at an advanced level, in the fields of advanced manufacturing technology. In addition, and more generally:

- To develop an understanding of the full range of benefits which may be achieved through advanced manufacturing technology and the need to match manufacturing techniques with the product, the company and the market.
- To provide a broad appreciation of materials, processes and techniques together with the methods used for their evaluation in advanced manufacturing technology and systems.
- To engender an understanding of the management role in the investigation, implementation and operation of manufacturing systems for efficiency, cost effectiveness and quality of product.
- To provide an overview of design, modelling, simulation and prototyping software applicable to manufacturing processes and systems.
- To encourage a 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	Theories, principles and practice in advanced manufacturing technology and management and operations of manufacturing systems.	Lectures, Tutorials, Simulation.	Coursework, Exam, Report.
A2	Design, prototyping, materials and manufacturing processes including computer aided design, analysis and modelling of manufacturing systems.	Lectures, Tutorials, Simulation.	Coursework, Exam, Report.

B. Cognitive (Intellectual or Thinking) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
B1	Design and schedule of manufacturing operations and quality control and design, analyse and manage supply chains for optimum performance.	Lectures, Tutorials, Simulation.	Coursework, Exam.
B2	Critically analyse and optimise system requirements for automated manufacturing systems, including simulation and prototyping.	Lectures, Tutorials, Simulation.	Coursework, Exam.
B3	Develop and maintain operations to meet quality standards throughout manufacturing, organisation and supplier networks.	Lectures, Tutorials, Simulation.	Coursework, Exam.

C. Practical (Professional or Subject) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
C1	Apply principles of supply chain management, system integration, operation and quality control to solve	Lectures, Tutorials,	Coursework, Exam.

	practical problems in implementation of the lean and agile manufacturing operations.	Simulation.	
C2	Identify constraints and exploit opportunities for advanced manufacturing technology development and transfer including the use commercial software tools for design component and systems.	Lectures, Tutorials, Simulation.	Coursework, Exam.
C3	Diagnose and optimise the manufacturing systems, processes, flow of materials and management in economic, social, ethical and environmental context.	Lectures, Tutorials, Simulation.	Coursework, Exam, Report.

D. Transferrable (Graduate and Employability) skills, able to:

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
D1	Conduct appropriate research, read and understand complex engineering documentation and undertake design and development of advanced manufacturing systems.	Lectures, Tutorials.	Coursework, Report.
D2	Communicate effectively in writing and other viable and appropriate forms of presentation.	Lectures, Group work.	Coursework, Report.

Academic Regulations

The current University of Portsmouth Academic Regulations will apply to this course.

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 2030 and Strategy 2025
- 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
- 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

Disclaimer

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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Document details

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