



UNIVERSITY OF  
PORTSMOUTH

## **COURSE SPECIFICATION**

### ***BEng (Hons) Mechanical and Manufacturing Engineering***

# COURSE SPECIFICATION

Please refer to the [Course Specification Guidance Notes](#) for guidance on completing this document.

Course Title	<b>Mechanical and Manufacturing Engineering</b>
Final Award	BEng (Hons) Mechanical and Manufacturing Engineering
Exit Awards	CertHE Mechanical Engineering DipHE Mechanical Engineering
Course Code / UCAS code (if applicable)	U0707PYC
Mode of study	Full time
Mode of delivery	Campus
Normal length of course	3 years, 4 years with placement
Cohort(s) to which this course specification applies	September 2023 onwards
Awarding Body	University of Portsmouth
Teaching Institution	University of Portsmouth
Faculty	Faculty of Technology
School/Department/Subject Group	School of Electrical and Mechanical Engineering
School/Department/Subject Group webpage	<a href="https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-electrical-and-mechanical-engineering">https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-electrical-and-mechanical-engineering</a>
Course webpage including entry criteria	<a href="https://www.port.ac.uk/study/courses/beng-hons-mechanical-and-manufacturing-engineering">https://www.port.ac.uk/study/courses/beng-hons-mechanical-and-manufacturing-engineering</a>
Professional and/or Statutory Regulatory Body accreditations	Institution of Engineering and Technology Institution of Mechanical Engineers
<a href="#">Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level</a>	Level 6

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

To provide an education suitable for those wishing to pursue a career in the mainstream of professional engineering practitioners as a Chartered Engineer through a balance of analytical and practical studies, and to provide students with the opportunity to develop key skills with the necessary transferable skills for lifelong learning and flexibility in the context of changing labour markets in engineering business to maximise career opportunities. Alternatively, graduates are likely to find success in a wide variety of professions requiring numeracy and problem-solving skills.

In addition, and more generally, the course aims to:

- To provide a challenging and stimulating study environment within which students will attain the confidence and ability to work with practical and analytical aspects of engineering disciplines to propose and achieve practical sustainable designs and solutions to mechanical and manufacturing problems.
- To provide a framework allowing students to follow a progressive, flexible and coherent programme of study.
- To provide a range of options for individual study paths to foster personal interests in subject areas.
- To provide students with the opportunity to develop key laboratory practical, interpersonal and communication skills.
- Provides an opportunity for students to gain experience and skills relevant to employment (or further study) within the mechanical engineering sector by choosing relevant work placement (optional sandwich year).
- To appreciate and understand the economic, social, ethical, legal and environmental context in which a mechanical engineer will work.
- To equip graduates with the necessary current technical and transferable skills for lifelong learning, employability and flexibility in the context of the changing labour markets of the manufacturing industry including the skills related to the use of the latest versions of modern industrial level CAD/CAM systems.
- To provide students with the skills and knowledge to manage Manufacturing systems and Product realisation.
- To provide students with the skills and knowledge required to maximise career and postgraduate study opportunities.

## 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.

<b>A. Knowledge and understanding of:</b>			
<b>LO number</b>	<b>Learning outcome</b>	<b>Learning and Teaching methods</b>	<b>Assessment methods</b>
A1	Relevant mathematics and applied science for engineering calculations.	Lectures, Tutorials, Laboratory work	Exams, Tests, Laboratory reports.
A2	Application of the design process, selection of materials and manufacturing process appropriate to the application.	Lectures, Tutorials.	Exams, Coursework.
A3	The use and relevance of appropriate software.	Lectures, Tutorials.	Coursework, Presentation.
A4	The importance of ethics and impact on the environment; business, commerce and marketing and the significance of mechanical engineering in society.	Lectures, Seminars.	Coursework, Presentation.

<b>B. Cognitive (Intellectual or Thinking) skills, able to:</b>			
<b>LO number</b>	<b>Learning outcome</b>	<b>Learning and Teaching methods</b>	<b>Assessment methods</b>
B1	Apply analytical and other problem-solving techniques to develop innovative solutions and use a holistic approach in solving problems, by applying judgement to criteria including risk, cost, safety and the environment.	Lectures, Tutorials, Laboratory work.	Exams, Coursework.
B2	Develop critical skills with regard to literature searching, appraising and evaluating from a variety of sources and synthesising the results.	Lectures, Tutorials, Laboratory work, Group work.	Exams, Coursework, Presentation, Laboratory report.
B3	Develop an awareness of the effects upon society of technological developments and develop a proper sense of professional conduct in relation to society's use of technology.	Lectures, Seminars.	Coursework, Presentation.
B4	Plan, execute and report on laboratory experiments and final year projects.	Lectures, Laboratory work.	Coursework, Presentation.

C. Practical (Professional or Subject) skills, able to:			
LO number	Learning outcome	Learning and Teaching methods	Assessment methods
C1	Be rational and pragmatic, interested in the practical steps necessary for a concept to become reality.	Lectures, Tutorials, Laboratory work, Group work.	Coursework, Laboratory report, Presentation.
C2	Mathematically model real engineering situations effectively and think creatively in order to develop design and sustainable analytical solutions.	Lectures, Tutorials.	Exams, Coursework.
C3	Communicate technical information in a lucid manner to both management and technical staff.	Lectures, Laboratory work, Group work.	Coursework, Laboratory report, Presentation.
C4	Be cost and value-conscious, and aware of the social, cultural, environmental, health and safety, and wider professional responsibilities they should display.	Lectures, Tutorials, Laboratory work, Group work.	Coursework, Laboratory report, Presentation.

D. Transferrable (Graduate and Employability) skills, able to:			
LO number	Learning outcome	Learning and Teaching methods	Assessment methods
D1	Communicate effectively in writing, speaking and in appropriate forms of presentation.	Lectures, Tutorials.	Coursework, Laboratory report, Presentation.
D2	Read and understand documents related to engineering and software products and systems and use information technology to handle data, for simulation and to assist with design and testing.	Lectures, Tutorials, Laboratory work, Group work.	Coursework, Laboratory report, Presentation.
D3	Apply mathematical techniques in engineering design and professional practice and assess problem domains and formulate appropriate problem-solving strategies.	Lectures, Tutorials, Laboratory work, Group work.	Exams, Coursework.
D4	Work in teams to achieve goals but nevertheless be distinctively individual; demonstrate productive capability in the placement setting where this is applicable.	Tutorials, Laboratory work, Group work.	Coursework, Laboratory report, Presentation.

## 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.

**In addition to these University support services this course also provides...**

***specialist laboratory facilities, support prior to, during and following the placement through Student Placement and Employability Centre (SPEC), including visit and advice from placement tutor, and learning resources that will be available to students whilst off-campus.***

## 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](#)
- [Quality Assurance Agency Framework for Higher Education Qualifications](#)
- Requirements of Professional and/or Statutory Regulatory Bodies: **Institution of Engineering and Technology, Institution of Mechanical Engineering**
- Coverage of AHEP4 Learning Outcomes as documented in the Output Standards Matrix, to be considered in conjunction with the information in the Module Specification documents
- 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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