



UNIVERSITY OF  
PORTSMOUTH

# COURSE SPECIFICATION

## MEng Mechanical Engineering

**Academic Standards, Quality and Partnerships**  
**Department of Student and Academic Administration**

**March 2018**

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# COURSE SPECIFICATION

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

<b>Course Title</b>	<b><i>MEng Mechanical Engineering</i></b>
Final Award	<i>MEng Mechanical Engineering</i>
Exit Awards	<i>CertHE Mechanical Engineering DipHE Mechanical Engineering</i>
Course Code / UCAS code (if applicable)	<i>C1889S</i>
Mode of study	<i>full time</i>
Mode of delivery	<i>Campus</i>
Normal length of course	<i>4 years, 5 years with placement</i>
Cohort(s) to which this course specification applies	<i>from September 2019 intake onwards</i>
Awarding Body	<i>University of Portsmouth</i>
Teaching Institution	<i>University of Portsmouth</i>
Faculty	<i>Faculty of Technology</i>
School/Department/Subject Group	<i>School of Mechanical and Design Engineering</i>
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-mechanical-and-design-engineering">https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-mechanical-and-design-engineering</a>
Course webpage including entry criteria	<a href="https://www.port.ac.uk/study/courses/meng-mechanical-engineering">https://www.port.ac.uk/study/courses/meng-mechanical-engineering</a>
Professional and/or Statutory Regulatory Body accreditations	<i>Institution of Engineering and Technology Institution of Mechanical Engineers</i>
<a href="#">Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level</a>	<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 [Module Web Search](#) for further information on the course structure and modules.

## Educational aims of the course

The course aims to enable students to work as professional Mechanical Engineers through providing, extending and integrating in-depth scientific and applications knowledge and to further self-learning, interpersonal and engineering management skills to threshold levels for UK SPEC for Chartered Engineer Standard. Alternatively, graduates are likely to find success in a wide variety of professions requiring numeracy and problem-solving skills. Individual and group project and case work related to current research and knowledge transfer contracts exposes students to challenging problems for solution through structured innovation, design and scientific method approaches using complex software and hardware systems in liaison with lead research academics and their industrial collaborators.

The course aims to:

- Develop knowledge and a thorough understanding of the underpinning engineering science and mathematics essential for developing a career as a Chartered Mechanical Engineer
- Develop a comprehensive understanding of engineering analysis with the ability to apply engineering principles to a wide range of applications and to seek optimised technical solutions within identified constraints
- To develop and apply engineering design knowledge and skills leading to justifiable concepts, prototypes and desk-top working models
- To appreciate and understand the ethical, economic, legal, social and environmental context in which a Chartered Mechanical Engineer will work to achieve sustainable engineering solutions for future prosperity and quality of life
- To develop a comprehensive understanding of techniques applicable to research methodologies and laboratory studies
- To develop skills that will enable a critical evaluation of current research in the area of mechanical engineering
- To expose students to engineering practice through work in the laboratories, and individual and group projects
- Provide an opportunity for students to gain experience and skills relevant to employment (or further study) within mechanical engineering sector by choosing relevant work placement (optional sandwich year)
- Provide a challenging, stimulating study environment in which MEng students can develop technical management abilities
- Provide options where possible to enable some choice to foster personal interests in specialist areas of analysis

## 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	Relevant and appropriate mathematics and applied science for engineering calculations, including limitations	lectures, tutorials, laboratory work	exams, tests, laboratory reports
A2	Comprehensive knowledge of the design methodologies, selection of materials and	lectures, tutorials	exams, coursework,

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
	manufacturing processes and constraints and their application in developing optimised solutions		<i>presentation</i>
A3	The use and relevance of appropriate software in analysing and optimising technical, business and project management studies	<i>lectures, tutorials</i>	<i>coursework, presentation</i>
A4	The importance of ethics and impact on the environment; business, commerce and marketing and the significance of mechanical engineering in society and in the social context of creating economy and quality of life	<i>lectures, seminars</i>	<i>coursework, presentation</i>

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

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
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 and apply concepts in unfamiliar situations	<i>lectures, tutorials, laboratory work</i>	<i>exams, coursework</i>
B2	Develop critical skills with regard to literature searching, appraising and evaluating from a variety of sources and synthesising the results and appreciate the international dimension to engineering, commerce and communication	<i>lectures, tutorials, laboratory work, group work</i>	<i>exams, coursework, presentation, laboratory report</i>
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	<i>lectures, seminars</i>	<i>coursework, presentation</i>
B4	Plan, execute and report on laboratory experiments and individual project at level 6 and the group projects at Level 7 through structured written reports, poster displays and presentations individually and as part of a team	<i>lectures, laboratory work</i>	<i>coursework, presentation</i>

### 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 and to be able to evaluate critically current research and advanced scholarship	<i>lectures, tutorials, laboratory work, group work</i>	<i>coursework, laboratory report, presentation</i>
C2	Mathematically model real engineering situations effectively and think creatively in order to develop	<i>lectures, tutorials</i>	<i>exams, coursework,</i>

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
	design and sustainable analytical solutions and be able to make sound judgements in the absence of complete data		<i>presentation</i>
C.3	Communicate technical and non-technical information in a lucid manner to both management and technical staff and to be able to work in groups/teams, appreciate different roles within a team and to gain the ability to exercise leadership	<i>lectures, laboratory work, group work</i>	<i>coursework, laboratory report, presentation</i>
C.4	Be cost and value-conscious, and aware of the social, cultural, environmental, health and safety, and wider professional responsibilities they should display	<i>lectures, tutorials, laboratory work, group work</i>	<i>coursework, laboratory report, presentation</i>

#### 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	<i>lectures, tutorials</i>	<i>coursework, laboratory report, presentation</i>
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	<i>lectures, tutorials, laboratory work, group work</i>	<i>coursework, laboratory report, presentation</i>
D3	Apply mathematical techniques in engineering design and professional practice and assess problem domains and formulate appropriate problem solving strategies	<i>lectures, tutorials, laboratory work, group work</i>	<i>exams, coursework, presentation</i>
D4	Work in teams to achieve goals but nevertheless be distinctively individual; demonstrate productive capability in the placement setting where this is applicable	<i>tutorials, laboratory work, group work</i>	<i>coursework, laboratory report, presentation</i>

## 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.

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:

*Insert additional reference points or delete as required*

- [University of Portsmouth Curriculum Framework Specification](#)
- [University of Portsmouth Education Strategy 2016 - 2020](#)
- [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 Engineering and Technology, Institution of Mechanical Engineering**
- 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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