



UNIVERSITY OF  
PORTSMOUTH

## COURSE SPECIFICATION

# *BEng (Hons) Mechanical and Aeronautical Engineering*

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

January 2020

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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>Mechanical and Aeronautical Engineering</b>
Final Award	BEng (Hons) Mechanical and Aeronautical
Exit Awards	CertHE Mechanical and Aeronautical Engineering DipHE Mechanical and Aeronautical Engineering
Course Code / UCAS code (if applicable)	U3093FTC, U3093PYC / H3H4
Mode of study	Full time, Placement Year
Mode of delivery	Campus
Normal length of course	3 years, 4 years with placement
Cohort(s) to which this course specification applies	From September 2021 intake onwards
Awarding Body	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	<a href="#">School of Mechanical and Design Engineering Webpage</a>
Course webpage including entry criteria	<a href="#">Course Webpage including Entry Criteria</a>
Professional and/or Statutory Regulatory Body accreditations	
<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 [Module Web Search](#) for further information on the course structure and modules.

## Educational aims of the course

The course aims to equip students to work as professional Mechanical Engineers with in-depth understanding of Aeronautics. It is a route to UK-SPEC Chartered Engineer Standard with completion of relevant further learning and experience. Graduates are likely to find success in a wide variety of professions requiring numeric, design and problem-solving skills.

In addition, the course aims to:

- Develop the knowledge and understanding of the underpinning engineering science and mathematics essential for an aeronautical/mechanical engineer.
- Develop the understanding of engineering analysis with the ability to apply engineering principles and design principles to a wide range of aeronautical applications.
- To develop engineering design knowledge and skills in the context of ethical, sustainable and economic solutions and constraints.
- To appreciate and understand the economic, social, ethical, legal and environmental context in which a mechanical and an aeronautical engineer will work.
- Expose students to engineering practice through practical and experimental work in engineering laboratories, and individual and group projects.
- Provides an opportunity for students to gain experience and skills relevant to employment (or further study) within mechanical engineering and aeronautical sector by choosing relevant work placement (optional sandwich year).
- Provide a challenging, stimulating and rewarding study environment and to nurture life-long learning interest and skills.
- Provide options for individual study paths to enable students to develop expertise in their specialist areas of interest.
- Develop a range of transferable and key skills by means of opportunities provided in the study units.

## 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 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 control systems 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 engineering in society	lectures, seminars	coursework, presentation

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	<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	<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 final year projects	<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	<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 design and sustainable analytical solutions	<i>lectures, tutorials</i>	<i>exams, coursework</i>
C3	Communicate technical information in a lucid manner to both management and technical staff	<i>lectures, laboratory work, group work</i>	<i>coursework, laboratory report, presentation</i>
C4	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</i>

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
			<i>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</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:

- [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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## Document details

Author	Jovana Radulovic, Zoubir Zouaoui
Date of production and version number	23.08.2019. v1
Date of update and version number	31.10.2019.v2, 24.01.2020
Minimum student registration numbers	20