



UNIVERSITY OF
PORTSMOUTH

COURSE SPECIFICATION

MSc Energy and Power Systems Management

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

July 2020

Copyright

The contents of this document are the copyright of the University of Portsmouth and all rights are reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, such as electronic, mechanical, photocopied, recorded or otherwise, without the prior consent of the University of Portsmouth.

COURSE SPECIFICATION

Course Title	<i>MSc Energy and Power Systems Management</i>
Final Award	<i>MSc</i>
Exit Awards	<i>PGDip, PGCert</i>
Course Code / UCAS code (if applicable)	<i>C2562 F/P</i>
Mode of study	<i>full time / part time</i>
Mode of delivery	<i>Campus</i>
Normal length of course	<i>1 year / 3 years</i>
Cohort(s) to which this course specification applies	<i>from September 2020 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 Energy and Electronic Engineering</i>
School/Department/Subject Group webpage	<i>http://www.port.ac.uk/school-of-engineering/</i>
Course webpage including entry criteria	<i>http://www.port.ac.uk/courses/engineering/msc-energy-and-power-systems-management/</i>
Professional and/or Statutory Regulatory Body accreditations	<i>Will be submitted for accreditation in 2018/19 with the Institution of Engineering and Technology (IET)</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 engineers, at an advanced level, in the fields of power systems technology, energy systems and management, renewable and sustainable energy, electrical machines and power electronics.

In addition, and more generally:

- Provide a challenging and stimulating study environment.
- Develop a range of key skills by means of opportunities provided in the study units.
- Accommodate student needs in relation to maximising their career potential by enabling them to develop knowledge, understanding and skills in their chosen subject area.

Being an MSc course, students are encouraged and expected to be able to reach a level of competence and professionalism where they can effectively integrate their technical and non-technical knowledge to solve a range of problems of a complex nature.

The course enables students to develop both analytical and design skills across the range of subjects. This is achieved through theoretical studies alongside practical design projects and laboratory experiments. Students also become conversant with industrial practice and familiar with industrial strength analysis and various simulation tools.

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>Energy Management, Economics and Risk Analysis; Smart Grid Fundamental; Renewable and Alternative Energy; Electrical Power systems Technology; Electrical Machines and Drive; Nuclear Technology.</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Coursework, exam</i>
A2	<i>Relevant mathematical, analytical, modelling, computational and simulation techniques for resolving Energy and Power systems problems</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Coursework, exam</i>
A3	<i>Established techniques of analysis and enquiry within a discipline through the use, relevance and deployment of appropriate software</i>	<i>laboratory activities</i>	<i>Coursework, report</i>
A4	<i>Energy management and its related project formulation, planning, implementation, presentation and dissemination</i>	<i>Lectures, tutorials, laboratory activities</i>	<i>Coursework, exam</i>
A5	<i>Professional and ethical responsibility</i>	<i>Lectures</i>	<i>Project report</i>

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

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
-----------	------------------	-------------------------------	--------------------

B1	<i>Systematically use knowledge of energy and power systems principles and underlying mathematics as tools for solving problems</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Coursework, exam, report</i>
B2	<i>Critically and creatively apply knowledge and understanding of energy and power systems to generate practical products, systems and services</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Coursework, exam, report</i>
B3	<i>Advise and make judgments on the management of and strategic use of energy and power systems</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Coursework, exam, report</i>
B4	<i>Plan, conduct, interpret and report on experiments</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Coursework, report</i>
B5	<i>Plan, manage, undertake, evaluate, interpret and report on a significant project</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Coursework, report, presentation</i>

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

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
C1	<i>Use systematically both standard and specialist measuring instruments in appropriate situations to acquire data for identified purposes</i>	<i>Lectures, laboratory activities, simulation</i>	<i>Laboratory, Coursework, report</i>
C2	<i>Use systematically computer systems for simulation, analysis and presentation within defined problem domains</i>	<i>Lectures, laboratory activities, simulation</i>	<i>Laboratory, Coursework, report</i>
C3	<i>Model energy and power systems systematically using appropriate techniques and software</i>	<i>Lectures, laboratory activities</i>	<i>Laboratory, Coursework, report</i>
C4	<i>Prepare schedules for the systematic building of complex energy and power systems</i>	<i>Lectures, tutorials, laboratory activities, simulation</i>	<i>Laboratory, Coursework, report</i>
C5	<i>Use appropriate codes of practice, informed by legislation and best practice as they apply to energy and power systems</i>	<i>Lectures, tutorials, laboratory activities</i>	<i>Coursework, report</i>

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

LO number	Learning outcome	Learning and Teaching methods	Assessment methods
D1	<i>Work effectively individually and in group settings to achieve set goals</i>	<i>Lectures, group work</i>	<i>Laboratory, Coursework, presentation, report</i>

D2	<i>Communicate effectively in writing and through graphical representations in professional and academic settings</i>	<i>Lectures, laboratory activities, group work</i>	<i>Coursework, presentation, report</i>
D3	<i>Apply appropriate mathematical techniques in analysis and problem solving</i>	<i>Lectures, laboratory activities</i>	<i>Exam, Coursework, presentation</i>
D4	<i>Assess problem domains and formulate appropriate problem solving strategies</i>	<i>Lectures, laboratory activities</i>	<i>Exam, Coursework, presentation</i>
D5	<i>Use appropriate information technology to handle text, data, simulation, design and testing</i>	<i>Lectures, laboratory activities</i>	<i>Exam, Coursework, presentation, report</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.

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 Strategy](#)
- [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 **enter the relevant statement for this course**
- [Quality Assurance Agency Framework for Higher Education Qualifications](#)
- Requirements of Professional and/or Statutory Regulatory Bodies: **add name(s) of PSRB(s)**
- 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.

Copyright

The contents of this Course Specification are the copyright of the University of Portsmouth and all rights are reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, such as electronic, mechanical, photocopied, recorded or otherwise, without the prior consent of the University of Portsmouth.

Document details

Author	<i>Khalil Alkadhim</i>
Date of production and version number	<i>24 Aug 2018 v1.1</i>
Date of update and version number	<i>September 2021 v1.3</i>
Minimum student registration numbers	<i>15</i>