# COURSE SPECIFICATION

# BEng (Hons) Electronic Systems Engineering (Distance Learning)

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## COURSE SPECIFICATION

| Course Title | Electronic Systems Engineering |
|---|---|
| Final Award | BEng (Hons) |
| Exit Awards | Ordinary Degree BEng Electronic Systems Engineering |
| Course Code / UCAS code (if applicable) | U2404PTD |
| Mode of study | Part-time |
| Mode of delivery | Distance Learning |
| Normal length of course | 2 years (U2177PTD), 3 years (U2404PTD) |
| 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 Energy and Electronic Engineering |
| School/Department/Subject Group webpage | *https://www.port.ac.uk/about-us/structure-and-governance/organisational-structure/our-academic-structure/faculty-of-technology/school-of-energy-and-electronic-engineering* |
| Course webpage including entry criteria | *https://www.port.ac.uk/study/courses/beng-hons-electronic-systems-engineering-top-up* |
| Professional and/or Statutory Regulatory Body accreditations | None |
| Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level | FHEQ 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

The course aims to equip students to work as professional electronic engineers by building on an existing Foundation Degree (FD) / HND or equivalent qualifications appropriate to electronic engineering. The course also aims to offer a flexible and coherent programme of study, where students in full time work may achieve a BEng (Hons) award by obtaining 120 credits of study at level 6 by on-line distance learning over 2 or 3 years; the course should not normally take longer than three years, although students occasionally require a longer period, depending on their personal circumstances.

The core elements of the QAA engineering benchmark and AHEP4 in the context of this course are:

**Science and Mathematics (SM)**

Mathematical methods appropriate to electronic design, with particular reference to the methods required in analogue electronics, control systems or artificial intelligence, communications and signal processing.

**Engineering Analysis (EA)**

The application of mathematical and scientific principles underlying the solution of practical problems in electronics and electronic design, including the principles governing: analogue circuits and systems; digital systems, including hardware description languages; control or artificial intelligence systems; and telecommunication systems.

**Design and Innovation (DI)**

The principles and practice of the design of electronic systems, relevant ITC principles including computer aided simulation and design using such software tools as VHDL and Matlab®.

**The Engineer and Society (ES)**

Business and management practices in industry with a particular focus on project management, and quality management. Sustainability and environmental considerations.

**Engineering Practice (EP)**

Solution of engineering problems to meet specified technical requirements as well as time and resource constraints. Project management methods, including planning, monitoring, control, and reporting.

It should be noted however that this course is not accredited by any UK Professional Engineering Institute such as the Institution of Engineering Technology (IET).

## 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 | Analogue electronics, digital electronics, data communications, signal processing, and either control or artificial intelligence (SM, DI, and EA) | Guided independent learning, on-line lecture/discussion, tutorial exercises, and computer simulation. | Coursework, examination. |
| A2 | Mathematical methods appropriate to electronics (SM). | Independent learning, on-line lecture/discussion, | Coursework, examination. |

| LO number | Learning outcome | Learning and Teaching methods | Assessment methods |
|---|---|---|---|
| | | tutorial exercises. | |
| A3 | The role of computing and simulation in the solution of problems, including hardware description languages (SM, DI, and EP). | Guided independent learning, on-line lecture/discussion, and computer simulation. | Coursework |
| A4 | Practical design of electronic systems (DI, EP). | Guided independent learning, on-line lecture/discussion, and computer simulation. | Coursework |
| A5 | Project management, quality management (SM, ES). | Guided independent learning, on-line discussion. | Coursework, examination. |

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

| LO number | Learning outcome | Learning and Teaching methods | Assessment methods |
|---|---|---|---|
| B1 | Select and apply appropriate knowledge of electronic principles to model and analyse systems (EA, EP). | Guided independent learning, on-line lecture/discussion, tutorial exercises. | Coursework, examination. |
| B2 | Select and apply appropriate mathematical methods to model and analyse electronic systems (SM). | Guided independent learning, on-line lecture/discussion, tutorial exercises. | Coursework, examination. |
| B3 | Select and apply computer-based design and simulation techniques (EA, DI, and EP). | Guided independent learning, on-line lecture/discussion, tutorial exercises. | Coursework, examination. |
| B4 | Design, simulate and test electronic systems and subsystems to meet specified requirements (DI, EP). | Guided independent learning, on-line lecture/discussion, tutorial exercises. | Coursework, examination. |
| B5 | Solve problems in a systematic and manageable manner (ES, EP). | Guided independent learning, on-line lecture/discussion, tutorial exercises. | Coursework, examination, Project report. |

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

| LO number | Learning outcome | Learning and Teaching methods | Assessment methods |
|---|---|---|---|
| C1 | Apply relevant mathematical methods in developing solutions to problems in electronics (SM). | Guided independent learning, on-line lecture/discussion, tutorial exercises. | Coursework, examination. |
| C2 | Design, simulate and evaluate electronic engineering systems (DI, EP). | Guided independent learning, on-line lecture/discussion, tutorial exercises, and computer simulation. | Coursework. |
| C3 | | | |

| LO number | Learning outcome | Learning and Teaching methods | Assessment methods |
|---|---|---|---|
| | Search a range of sources for information pertinent to technical and professional tasks (SM, ES, and EP). | Guided independent learning, on-line lecture/discussion. | Coursework, Project report. |
| C4 | Plan, manage and undertake an engineering project, taking constraints into account (SM, ES, and EP). | Guided independent learning, project supervision. | Project report. |

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

| LO number | Learning outcome | Learning and Teaching methods | Assessment methods |
|---|---|---|---|
| D1 | Manipulate and present information (EP). | Guided independent learning, on-line lecture/discussion, tutorial exercises, and computer simulation. | Coursework, Project report. |
| D2 | Analyse scientific information in the solution of problems (SM). | Guided independent learning, on-line lecture/discussion, tutorial exercises. | Coursework, examination, Project report. |
| D3 | Use information technology to handle text and data and for simulation and design (DI). | Guided independent learning, on-line lecture/discussion, tutorial exercises, and computer simulation. | Coursework. |
| D4 | Develop solutions in a creative manner, sometimes based on inadequate information (EA, DI, and EP). | Guided independent learning, on-line lecture/discussion, tutorial exercises, and computer simulation. | Coursework, Project report. |
| D5 | Communicate effectively in a variety of formats (EP) and work effectively to achieve goals (EP) | Guided independent learning, Project supervision. | Coursework, Project 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 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
- Quality Assurance Agency Framework for Higher Education Qualifications
- Vocational and professional experience, scholarship and research expertise of the University of Portsmouth's academic members of staff

## 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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