# Programme Specification

## MSc Engineering in the Coastal Environment, FT, MSc Engineering in the Coastal Environment PT - 2019/20

**This specification provides a concise summary of the main features of the programme and the learning** outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

| | |
|---|---|
| Awarding Institution | University of Southampton |
| Teaching Institution | University of Southampton |
| Mode of study | Full time, Part time |
| Duration in years | 1 years, 2 years |
| Accreditation details | Institution of Civil Engineers, Institution of Structural Engineers, Chartered Institution of Highways and Transportation, Institute of Highway Engineers |
| Final award | Master of Science |
| Name of award | Engineering in the Coastal Environment |
| Interim Exit awards | Postgraduate Certificate Postgraduate Diploma |
| FHEQ level of final award | Level 7 |
| UCAS code | N/A |
| QAA Subject Benchmark or other external reference | QAA Subject Benchmark – Engineering 2015; Accreditation of Higher Education Programmes, Edition 3, Engineering Accreditation Board Characteristic Statement: Master's Degree, QAA 2015 |
| Director of Programmes | Dr. Margarida Fernandes de Pinho Lopes |
| Programme Coordinator | Prof. Robert Nicholls |
| Date specification was written | 31st March 2013 (Prof. Robert Nicholls) |
| Date Programme was validated | March 2019 |
| Date specification last updated | June2019 |

## Programme Overview

*Brief outline of the programme*
This intensive 12 month MSc Engineering in the Coastal Environment programme is aimed at improving the knowledge of graduate Civil Engineers and numerate Physical Scientists so that they can further their careers in coastal engineering and related areas. This degree is accredited as meeting the requirements for Further Learning for a Chartered Engineer (CEng) for candidates who have already acquired a partial CEng accredited undergraduate first degree.

The programme is jointly taught between the Faculty of Engineering and Physical Sciences and the School of Ocean and Earth Science, which in the UK is a unique collaboration in this field. It is designed to offer a detailed multi-disciplinary perspective on Coastal Engineering and its role in wider Coastal and Environmental Management. The approach to this subject area is evolving rapidly, such as the move to soft engineering, working with nature approaches, strategic shoreline management, and long-term concerns such as sea-level rise. Our experience is that there is a consistent demand for individuals with this type of education both in Britain and abroad. The overall goal is to educate students as technically-orientated coastal practitioners for suitable employment in coastal engineering, both in consultancies and relevant areas of government.

To achieve this, students will develop a systematic understanding and critical awareness of coastal issues in order to simultaneously broaden and deepen your knowledge of this area. They is accomplished through lectures, seminars, project work, boat work and field trips. Their knowledge is consolidated through a research project (dissertation). These are selected from a set of research-based or industry/government-based projects. The industry/government-based projects can be placement-based or partnerships based at the university with an industrial supervisor. The

dissertation selection process is responsive to student needs and we have meetings with each year cohort to provide topics and then develop suitable dissertations with them. Recent industrial placements/partners have included HR Wallingford, Jacobs, ABPmer, Deltares, Mott McDonald, AECOM, Arup, Channel Coastal Observatory, Bournemouth Corporation, Eastern Solent Coastal Partnership and the Environment Agency, among others. As a result of this programme, students will be able to deal with complex issues systematically and creatively and make sound judgements within the field of Coastal Engineering and Environmental Management.

*Special features of the programme*
There are a number of special features to the programme aimed at building a cohort identity, supporting students, particularly international students, and improving the student experience and learning opportunities. These include

1. An induction field trip to a local site with coastal engineering issues, such as Hurst Spit, Hayling Island or Medmerry.
2. Fieldwork is an important component of the taught programme including trips to cliff erosion sites in Poole and Christchurch Bay, flood defences in Portsmouth and Lymington, and boat cruises in the Solent from the National Oceanography Centre.
3. The identification of six cross-cutting themes on which the programme delivers above the level of individual modules: 1. Coastal Modelling and Informatics; 2. Coastal Sediment and Morphodynamics; 3. Coastal Flooding and Hydrodynamics; 4. Coastal Structures; 5. Renewable Energy; and 6. Coastal Appraisal and Policy Dimensions.
4. High industry involvement in the planning and execution of dissertation projects, significant use of visiting lecturers and a significant field component. This includes a dedicated Coastal Engineering Industrial Advisory Board (IAB) which meets annually and has membership from Jacobs, ABPmer, HR Wallingford, Coastguard Agency, Channel Coastal Observatory and Eastern Solent Coastal Partnership. The IAB meets with selected students.
5. Students have access to the wide range of facilities at the National Oceanography Centre, including survey boats, the ocean library and computing facilities.
6. At Southampton, MSc ECE is a key educational component of the Southampton Marine and Maritime Institute (SMMI) (http://www.southampton.ac.uk/smmi), which promotes relevant research across the University, nationally and internationally. The link to SMMI enhances the opportunities available to you both in terms of industrial involvement within the MSc, industrial links for dissertation work, and subsequent career development.

*Learning and teaching*
Acquisition of core knowledge and understanding is through lectures, seminars, tutorials, field and laboratory classes, workshops, and independent study and research. You are encouraged from an early stage to supplement and consolidate your understanding and knowledge by independent study.

*Assessment*
Testing of the knowledge base is through a combination of unseen written examinations and assessed coursework in the form of problem solving exercises, laboratory and field reports, essays, oral presentations and individual and group projects.

Analysis and problem solving skills are assessed through unseen written examinations and problem based exercises. Experimental, research and design skills are assessed through laboratory reports, coursework exercises, project reports and oral presentations.

**Please note:** As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration, however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our Disclaimer to see why, when and how changes may be made to a student's programme.

Programmes and major changes to programmes are approved through the University's programme validation process which is described in the University's Quality handbook.

# Educational Aims of the Programme

The aims of the programme are to:

- Provide you with a focussed programme of study at the forefront of coastal engineering as a profession, affording a critical awareness of current problems and issues from a coastal

and environmental management perspective, including the evolving needs of industry and government.

- Enable you to develop a comprehensive understanding of the techniques applicable to coastal engineering, especially those related to coastal and environmental management.
- Provide you with a range of specialist modules integrated within the structured learning environment, reflecting the internationally-renowned research expertise within the University, in order to broaden and deepen your educational experience.
- Offer you a degree structure that is relevant to industry and responsive to changes in technology and needs.
- Provide you with a supportive and intellectually stimulating environment that encourages an attitude of independent learning and enquiry, and fosters an ethos of lifetime learning and professional development.
- Develop a set of skills pertinent to the role of the coastal engineer that will enable you to develop decision-making and team working skills appropriate for complex and unpredictable situations.
- Offer you a choice of research projects which are supported by the research activities within the Schools involved in the programme, and stimulate individual innovation, self-assessment and teamwork skills required in coastal engineering.
- Afford you the opportunity of applying theoretical knowledge gained on the programme through a substantial piece of research (dissertation), often involving relevant industrial experience (placement or partnership).
- Enable your career pathway towards chartered status.

## Programme Learning Outcomes

The programme provides opportunities for you to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the areas detailed below. The programme learning outcomes have been developed with reference to the Subject Benchmark Statement for engineering (https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-engineering-15.pdf)  and the Characteristics Statement for Master's Degrees (https://www.qaa.ac.uk/docs/qaa/quality-code/master's-degree-characteristics-statement.pdf?sfvrsn=6ca2f981_10) . The former of these is aligned with the Engineering Council publication Accreditation of Higher Education Programmes (AHEP): UK Standard for Professional Engineering Competence (third edition) (https://www.engc.org.uk/engcdocuments/internet/Website/Accreditation%20of%20Higher%20Education%20Programmes%20third%20edition%20(1).pdf)

Learning outcomes listed are AHEP 3 Learning Outcomes: Technical and 'Non-Technical' MSc programmes which provide further learning (FL) to partly meet the educational requirement for CEng.

## Knowledge and Understanding

Having successfully completed this programme you will be able to demonstrate:

| | |
|---|---|
| • comprehensive understanding of the relevant scientific principles of civil engineering | SM1 |
| • Knowledge and understanding of mathematical and statistical methods necessary to underpin your education in civil engineering and to enable you to apply a range of mathematical and statistical methods, tools and notations proficiently and critically in the analysis and solution of engineering problems | SM2 |
| • critical awareness of current problems and/or new insights most of which is at, or informed by, the forefront of civil engineering | SM4 |
| • understanding of concepts relevant to civil engineering, some from outside engineering, and the ability to evaluate them critically and to apply them effectively, including in engineering projects | SM6 |
| • awareness of the need for a high level of professional and ethical conduct in engineering | EL1 |
| • awareness that engineers need to take account of the commercial and social contexts in which they operate | EL2 |

- knowledge and understanding of management and business practices, their limitations, and how these may be applied in the context of civil engineering — EL3

- awareness that engineering activities should promote sustainable development and ability to apply quantitative techniques where appropriate — EL4

- awareness of relevant regulatory requirements governing engineering activities in the context of civil engineering — EL5

- awareness of and ability to make general evaluations of risk issues in the context of civil engineering, including health & safety, environmental and commercial risk — EL6

- advanced level knowledge and understanding of a wide range of engineering materials and components — P2

- understanding of the use of technical literature and other information sources — P4

- a thorough understanding of current civil engineering practice and its limitations, and some appreciation of likely new developments — P9

- understanding of different roles within an engineering team and the ability to exercise initiative and personal responsibility, which may be as a team member or leader — P11

*Teaching and Learning Methods*
Acquisition of core knowledge and understanding is through lectures, seminars, tutorials, field and laboratory classes, computer classes, workshops, and independent study and research. You are encouraged from an early stage to supplement and consolidate your understanding and knowledge by independent study.

*Assessment methods*
Testing of the knowledge base is through a combination of unseen written examinations and assessed coursework in the form of problem solving exercises, laboratory reports design exercises, essays and individual and group projects.

## Subject Specific Intellectual and Research Skills

Having successfully completed this programme you will be able to:
- ability both to apply appropriate engineering analysis methods for solving complex problems in engineering and to assess their limitations — EA3

- ability to use fundamental knowledge to investigate new and emerging technologies — EA5

- ability to collect and analyse research data and to use appropriate engineering analysis tools in tackling unfamiliar problems, such as those with uncertain or incomplete data or specifications, by the appropriate innovation, use or adaptation of engineering analytical methods — EA6

*Teaching and Learning Methods*
Intellectual skills are developed through the teaching and learning activities. Analysis and problem solving skills are further developed through regular problem sheets issued by module lecturers and through small group teaching. Experimental, research and design skills are further developed through coursework exercises, laboratory, and design and research projects. Feedback is provided on all the work submitted using announcements in the relevant module in the University Blackboard System. The development of transferable skills is embedded in all years of the programme. Typically, this takes the form of both individual and group project work (in SOES6011), and problem based learning.

*Assessment methods*
Analysis and problem solving skills are assessed through unseen written examinations and problem based exercises. Experimental, research and design skills are assessed through laboratory reports, coursework exercises, project reports and oral presentations. Skills are formatively assessed

through written reports and oral presentations, practical and laboratory reports. Summative assessment is through unseen examinations, extended essays, written reports, oral presentations, and completion of a research project (dissertation).

## Discipline Specific Learning Outcomes

Having successfully completed this programme you will be able to:

- demonstrate knowledge, understanding and skills to work with information that may be incomplete or uncertain, quantify the effect of this on the design and, where appropriate, use theory or experimental research to mitigate deficiencies     D3

- communicate your design work to technical and non-technical audiences     D6

- demonstrate knowledge and comprehensive understanding of design processes and methodologies and the ability to apply and adapt them in unfamiliar situations     D7

- ability to generate an innovative design for products, systems, components or processes to fulfil new needs     D8

*Teaching and Learning Methods*
Design skills are developed through the programme by a range of design activities involving both individual and group project work, and problem based learning.

*Assessment methods*
Design skills are assessed through coursework exercises, project deliverables including reports and artefacts and through oral presentations.

## Programme Structure

The University uses the European Credit Transfer Scheme (ECTS) to indicate the approximate amount of time a typical student can expect to spend in order to complete successfully a given module or programme, where 1 ECTS indicates around 20 nominal hours of study. Previously, Credit Accumulation and Transfer Scheme (CATS) points were used for this purpose where 1 CATS credit was 10 nominal hours of study. The University credit accumulation and transfer scheme is detailed in the University Calendar (https://www.southampton.ac.uk/calendar/sectioniv/index.page) .

The teaching is structured on a semester pattern. You study modules comprising 90 ECTS (180 CATS). The course is available for full-time (1 year) and part-time (2 year) study.

In addition to the final award, there are the following exit points:

- Postgraduate Certificate of Higher education, following successful completion of 30 ECTS (60 CATS).
- Postgraduate Diploma of Higher education, following successful completion of 60 ECTS (120 CATS).

Each module is a self-contained part of the programme of study and carries a credit rating. The syllabus and assessment related to each module is detailed in the associated module profile.

The Programme Structure is outlined in Appendix 1. Appendix 2 maps modules to programme learning outcomes.

Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles.

### Typical course content

The majority of modules are common to all students on this programme. Depending on your first degree subject, in Semester 1 you will take either CENV6128 (Marine Science graduates) or SOES6075 (Civil Engineering graduates). You will take a total of 30 ECTS (60 CATS) in each semester (if you are a full time student), plus (for the MSc award) a research project.

The programme follows university guidelines for inclusivity and flexibility and provides an array of teaching and learning approaches that will enable any student who meets the entry requirements to access the curriculum and demonstrate achievement of all the intended learning outcomes.

## Additional Costs

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. Costs that students registered for this programme typically also have to pay for are included in Appendix 3.

### Progression Requirements
The programme follows the University's regulations for ***Progression, Determination and Classification of Results: Postgraduate Master's Programmes*** as set out in the University Calendar https://www.southampton.ac.uk/calendar/sectioniv/index.page

### Intermediate exit points (where available)
You will be eligible for an interim exit award if you complete part of the programme but not all of it, as follows:

| Qualification | Minimum overall credit in ECTS/CATS credits | Minimum ECTS/CATS credits required at level of award |
|---|---|---|
| Postgraduate Diploma | at least 60/120 | 45/90 |
| Postgraduate Certificate | at least 30/60 | 20/40 |

# Programme outcomes for different exit points

| Level 7 | Much of the study undertaken at Masters level reflects research at the forefront of Civil Engineering in the Coastal Environment. You will have shown originality in the application of knowledge, and you will understand how the boundaries of knowledge are advanced through research. You will be able to deal with complex issues both systematically and creatively, and show originality in tackling and solving problems individually and as part of a team. You will have the qualities needed for employment in circumstances requiring sound judgement, personal responsibility and initiative, in complex and unpredictable professional environments. |
|---|---|
| PGDip | You will have attained knowledge of research being undertaken by academic staff at the forefront of Civil Engineering in the Coastal Environment. You will have shown that you are capable of applying knowledge to solve problems, and you will understand how the boundaries of knowledge are advanced through research. You will be able to deal with complex issues both systematically and creatively, and be able to contribute to solving problems individually and as part of a team. You will have the qualities needed for employment in circumstances requiring sound judgement and personal responsibility under the guidance of others, in complex and unpredictable professional environments. |
| PGCert | You will have been exposed to research being undertaken by academic staff at the forefront of Civil Engineering in the Coastal Environment. You will have gained experience in applying knowledge to solve problems, and you will understand how the boundaries of knowledge are advanced through research. You will be able to deal with complex issues by following existing procedures, and will be able to contribute to solving problems individually and as part of a team. You will have some of the qualities needed for employment in circumstances requiring sound judgement and personal responsibility under the guidance of others, in complex and unpredictable professional environments. |

# Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:
- Library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources. There is a wide range of online training and workshops available to support writing, study skills, IT and maths. The Academic skills hub holds several workshops every week day to support students.
- High speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations. Students can also access SVE (Southampton Virtual Environment), a virtual Windows University of Southampton desktop that can be accessed from personal devices such as PCs, Macs, tablets and smartphones from any location.
- Computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources).
- Standard ICT tools such as Email, secure filestore and calendars.
- Access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- Central IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library.
- Enabling Services offering assessment and support (including specialist IT support) facilities if you have a disability, dyslexia, mental health issue or specific learning difficulties.
- The Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards.
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV.
- A range of personal support services: mentoring, counselling, residence support service, chaplaincy, health service.
- A Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides
- An academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- Opportunities for extracurricular activities and volunteering.
- An Advice Centre offering free and confidential advice including support if you need to make an academic appeal.
- Support for student peer-to-peer groups, such as Nightline.

In the School of Engineering and your Discipline you will be able to access:
- Student handbook for Civil Engineering students.
- Introductory sessions for all years of the programme.
- Library information retrieval seminar.
- Workshop training.
- Small group tutorials in part I of the programme.
- Engineering Development and Manufacturing Centre (EDMC) equipped with a range of workshop equipment, CAD/CAM.
- Engineering specific software.
- Personal academic tutors to assist you with personal problems and to advise on academic issues (contact maintained during periods of studying abroad). A Senior Tutor is also available should you need additional support.
- Access to academic staff through an open door policy as well as timetabled tutor meetings, appointment system and e-mail.
- Research seminars and invited lectures.
- School Student Office for the administration of your programme.

## Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of your programme in the following ways:
- Anonymous evaluation questionnaires for each module of the programme.
- Acting as or represented by Student Representatives on the staff-student liaison committee. You are also represented on the School Programmes Committee and Faculty Education Committee.
- Meetings, individually or as group, with programme external examiner.

It should be noted that meetings with personal academic tutor can also be used to comment on quality related issues.

The ways in which the quality of your programme is checked, both inside and outside the University, are:
- Evaluation for each module of the programme based on your feedback from evaluation questionnaires and carried out by lecturer(s) involved in the module and a colleague acting as advisor.
- A discipline specific Education Board which convenes several times a year to consider the quality of delivery of each module of your programme.
- Moderation of examination papers, coursework and projects, both internally and externally.
- Comments by external examiners, who produce an annual report.
- Annual examiners' meetings and Boards of Examiners.
- Annual programme and module reviews considering your feedback from all sources, feedback from Education Boards, external examiners and other bodies and student performance in assessment.
- Periodic meetings of the Civil Engineering Industrial Advisory Board.
- Response to results from the National Student Survey.
- Accreditation by professional institutions.
- Programme Revalidation by the University at least every 5 years.

Note that quality assurance of part of the programme taken abroad, where applicable, is subject to the quality procedures of the relevant institutions. These procedures are subject to periodic monitoring by members of staff of the Faculty of Engineering and Physical Sciences.

## Career Opportunities

Graduates from the MSc Engineering in the Coastal Environment gain employment with a range of employers in field in the UK and overseas, including local authorities, national government organisations, engineering consultants, both specialised and multi-disciplinary, and contractors, or continue their studies by undertaking postgraduate research.

## External Examiners(s) for the programme

**Name:**          Professor Richard Simons
**Institution**:    University College of London

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University.  Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff:  Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their personal tutor in the first instance.

**Please note:** This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.  More detailed information can be found in the programme handbook at
http://www.southampton.ac.uk/studentservices/academic-life/faculty-handbooks.page and at
http://www.southampton.ac.uk/engineering/postgraduate/taught_courses/engineering/msc_engineering_in_the_coastal_environment.page

# Revision History

March 2013 (A Bloodworth/R J Nicholls)

September 2013 (A Bloodworth, for revised Calendar regulations and improved wording of aims and learning outcomes)

June 2014 (A Bloodworth/R J Nicholls, codes revised for Faculty modules, minor amends to learning outcomes, additional sections added, for programme validation)

Update to Programme Overview (CMA Changes) – September 2015

Change to EL requirements – 4 November 2015 FPC

Annual textual changes – CQA – August 2016, August 2017

Updated to reflect 201819 version and removal of Admissions Criteria – CQA March 2018
CQA Admin updates to module information July 2018
Updated Faculty name to Faculty of Engineering and Physical Sciences July 2018

February 2019 (R J Nicholls, for programme validation; AHEP LOs and programme LOs)

# MSc Engineering in the Coastal Environment, FT; Engineering in the Coastal Environment PT

The information within Appendix 1 is liable to change in minor ways from year to year. It is accurate for 2019-20 at the time of writing.

The taught component of the MSc consists of eight compulsory modules totalling 56.25 ECTS (112.5 CATS), together with one option chosen from two for 3.75 ECTS (7.5 CATS). T**his comprises total of 60 ECTS (120 CATS) across two semesters (full-time), or four semesters (part-time).**

The research component of the MSc consists of a Core module of 30 ECTS (60 CATS) which is a research dissertation.

**Modules at level 6 and 7 totalling 180 credits. FEEG6012 MSc Research Project is Core.**

**Students who do not hold a undergraduate degree in Civil Engineering will be expected to register for CENV6128 Introduction to Hydraulics. Students who do hold an undergraduate degree in Civil Engineering will be expected to register for SOES6075 Introduction to Coasts for Engineers**

| Module Code | Module Name | Semester | ECTS/ CATS Credit Points |
|---|---|---|---|
| CENV 6084 | Coastal & Maritime Engineering and Energy | 1 | 7.5/15 |
| CENV 6123 | Coastal Flood Defence and Management | 2 | 7.5/15 |
| CENV 6126 | Coastal Morphodynamics | 1 | 7.5/15 |
| | | | |
| CENV 6172 | River and Estuary Restoration | 2 | 7.5/15 |
| ENVS6032 | Geographical Information Systems | 1 | |
| | | | |
| FEEG 6012 | MSc Research Project | 2 & 3 | 30/60 |
| SOES 3014 | Coastal Sediment Dynamics | 1 | 7.5/15 |
| SOES 6060 | Key Skills and Applied Coastal Oceanography | 1 & 2 | 3.75/7.5 |
| SOES 6011 | Modelling Coastal Processes | 2 | 7.5/15 |
| | | | |
| | With 7.5 credits chosen from: | | |
| | | | |
| CENV 6128 | Introduction to Hydraulics | 1 | 3.75/7.5 |
| | | | |
| SOES 6075 | Introduction to Coasts for Engineers | 1 | 3.75/7.5 |

## Modules contributing to meeting the different programme learning outcomes

Core modules indicated in bold. Compulsory modules are underlined.

Codes in the left hand column below indicate the related Engineering Accreditation Board learning outcome.

**Knowledge and Understanding**

| Learning Outcome | Module |
|---|---|
| SM1 | SOES3014<br><br>CENV6084; CENV6123; CENV6126; CENV6128; SOES6011; SOES6060; SOES6075 |
| SM2 | **FEEG6012**; SOES6011 |
| SM4 | CENV6084; CENV6123; CENV6126; CENV6172; SOES6011; SOES6060 |
| SM6 | SOES3014<br><br>CENV6084; CENV6123; CENV6126; SOES6011; SOES6060; SOES6075 |
| EL1 | CENV6084; CENV6126; **FEEG6012** |
| EL2 | CENV6123; CENV6126; CENV6172; SOES6011 |
| EL3 | CENV6123; CENV6126 |
| EL4 | CENV6084; CENV6123; CENV6126; CENV6172; ENVS6032; SOES6075; SOES6011 |
| EL5 | CENV6123; CENV6172; **FEEG6012** |
| EL6 | CENV6084; CENV6123; CENV6126; CENV6172; ENVS6032; **FEEG6012** |
| P2 | CENV6084; CENV6123; CENV6126 |
| P4 | SOES3014<br><br>CENV6084; CENV6126; CENV6123; CENV6172; **FEEG6012**; SOES6075; SOES6011 |
| P9 | CENV6123; CENV6126; CENV6172 |
| P11 | CENV6126; SOES6011; SOES6060 |

**Subject Specific Intellectual and Research Skills**

| | |
|---|---|
| EA3 | CENV6084; CENV6123; CENV6126; SOES6011 |
| EA5 | CENV6084; CENV6123; CENV6126; CENV6128; CENV6172; SOES6011 |
| EA6 | CENV6123; **FEEG6012**; CENV6172; SOES6011 |

**Transferable and Generic Skills**

| | |
|---|---|
| G1 | SOES3014<br><br>CENV6084; CENV6123; CENV6126; CENV6172; ENVS6032; **FEEG6012;** SOES6011; SOES6060 |

| G2 | CENV6084; CENV6123; CENV6126; CENV6172; **FEEG6012;** SOES6011; SOES6060 |
|----|---|
| G3 | CENV6084; CENV6123; CENV6126; CENV6172; **FEEG6012;** SOES6011; SOES6060 |
| G4 | CENV6084; CENV6123; CENV6126; CENV6172; **FEEG6012;** SOES6011; SOES6060 |

**Subject Specific Practical Skills**

| P8 | CENV6123; CENV6126; **FEEG6012**; SOES6011 |
|----|---|
| P10 | **FEEG6012**; SOES6011 |

**Discipline Specific Learning Outcomes**

| D3 | CENV6084; CENV6123; CENV6126; CENV6172; **FEEG6012** |
|----|---|
| D6 | CENV6126; **FEEG6012** |
| D7 | **FEEG6012** |
| D8 | CENV6123; CENV6126; SOES6011 |

## Additional Costs

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme typically also have to pay for the items listed in the table below.

In some cases you'll be able to choose modules (which may have different costs associated with that module) which will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's Fees, Charges and Expenses Regulations in the University Calendar available at www.calendar.soton.ac.uk.

| Main Item | Sub-section | PROGRAMME SPECIFIC COSTS |
|---|---|---|
| Approved Calculators | | Candidates may use calculators in the examination room only as specified by the University and as permitted by the rubric of individual examination papers. The University species permissible models from time to time and these may be purchased from any source. At the time of writing the approved calculators are: CASIO FX85GTX (GT and PLUS), CASIO FX83GT (and PLUS), CASIO FX83ES or CASIO FX570 (ALL MODELS and PLUS). |
| Stationery | | You will be expected to provide your own day-to-day stationery items, e.g. pens, pencils, notebooks, etc. |
| Textbooks | | Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source.<br><br>Some modules suggest reading texts as **optional** background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module. |
| Equipment and Materials | Design equipment and materials: | We provide a wide range of resources to support project based modules and activities and these will allow you to complete your assessed exercises to the highest standard. However, you may wish to customise your project by purchasing additional resource e.g. alternative manufacturing materials, electronic components, etc. You may also incur additional costs for printing e.g. large format drawings. |
| | Field Equipment and Materials: | For field trips, students will need to wear suitable clothing e.g. waterproofs and stout shoes. You can purchase these from any source. |
| Clothing | Field course clothing: | You will need to wear suitable clothing when attending field courses, e.g. waterproofs, warm clothes, walking boots. You can purchase these from any source. |
| Printing and Photocopying Costs | | In some cases, coursework and/or projects may be submitted electronically. Where it is not possible to submit electronically students will be liable for printing costs, which are detailed in the individual Module Profile. |

| Main Item | Sub-section | PROGRAMME SPECIFIC COSTS |
|-----------|-------------|--------------------------|
|  |  | The MSc Research project module FEEG6012 requires you to print an Al portrait poster on paper. The typical cost for this is in the range £5 to £20. |