

Programme Specification

Title of programme:

MEng (Hons) Civil and Environmental Engineering, MEng (Hons) Civil and Environmental Engineering with Industrial Placement Year 2020/21

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
Duration in years	5 years (MEng with Industrial Placement Year), 4 years (MEng)
Accreditation details	Institution of Civil Engineers, Institution of Structural Engineers, Chartered Institution of Highways and Transportation, Institute of Highway Engineers
Final award	Master of Engineering.
Name of award	Civil and Environmental Engineering Civil and Environmental Engineering with Industrial Placement Year
Interim Exit awards	Certificate of Higher Education Diploma of Higher Education Bachelor of Science (ordinary) Bachelor of Engineering (with Honours)
FHEQ level of final award	Level 7 (MEng)
UCAS code	4SYB Civil and Environmental Engineering HH22 Civil and Environmental Engineering with Industrial Placement Year
QAA Subject Benchmark or other external reference	Engineering 2010, Engineering Council UK-SPEC, Joint Board of Moderators
Director of Programmes	Prof William Powrie
Programme Lead	Dr. Yongqiang Liu
Date specification was written	2 nd May 2009 (Dr A Anwar) Amended January 2016 to include Industrial Placement Year and will then have 'with Industrial Placement Year' appended to the degree title
Date Programme was validated	March 2019
Date specification last updated	February 2019

Programme Overview

Brief outline of the programme

Our MEng degree in Civil and Environmental Engineering emphasises the interactions between engineering and the environment with the focus on the protection and improvement of the natural environment in the service of society.

These MEng programmes are accredited as fully satisfying the educational base for a Chartered Engineer (CEng) by the major civil engineering related professional institutions. The first two years (parts) of the programmes cover the fundamental engineering science basis of the core civil engineering disciplines, for which the third year shows their application to solution of practical problems and to design. The fourth year offers a wide range of optional modules in specialist areas relevant to the latest research on environmental engineering and needs of society, together with a compulsory module on project management and economics, and a major integrated group design project. There is an emphasis throughout the programme on skills development – in design (and its communication through sketching, CAD and model-making), surveying, construction practice, computer programming, numerical analysis, practical laboratory work and oral presentations.

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 and development of skills 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.

Special Features of the programme

There are a number of special features to the programme aimed at building a cohort identity and improving the student experience and learning opportunity:

1. A full week of induction week activities at the start of the first year, including an outdoor team building activity and a design workshop where students work in small groups to conceive a creative solution to a problem and then communicate it by means of sketches, drawings and models.
2. A design course within the module CENV1026 Design and Computing for Civil Engineers, in which students develop the skills introduced in induction week to explore the creative process and design a structure to meet a brief, learning skills of sketching, model making, 2D and 3D CAD using programmes such as AutoCAD and Autodesk Inventor. Skills in CAD continue to be developed in the design curriculum in subsequent years.
3. At the end of Part I, the one-week Constructionarium field course takes place, in which students work in groups of about 15-20 to plan and carry out the construction of reduced scale versions of famous structures. The timing of the Constructionarium towards the end of Part I means that it serves as a team building activity that reinforces the cohort identity (facilitating more effective group working in subsequent years) and also provides skills and experience in planning, management and practical construction that increases student employability during summer vacations from Part I onwards.
4. The Constructionarium is not just a one-off activity that concludes in Part I. It also forms an important foundation for Part II CENV2027 Construction Management by providing a practical introduction to planning, financial control and Health and Safety. These topics and others are developed further in CENV2027 with the students having an understanding of how they are applied to real construction projects. In this module, all students are required to visit a construction site to find out first-hand how the management theory taught in lectures is implemented on real construction projects. They are encouraged to obtain a Construction Skills Certification Scheme (CSCS) card in the trainee Managers and Professionals category to maximise their skills and employability.
5. Skills development continues to be important throughout the degree course. In the third year, as part of the module CENV3056 Structural Engineering, students receive training in industry standard finite element analysis software, which they may then apply extensively in the design of structures and foundations in Part III Design 3 and Part IV Group Design Projects.
6. Students have the option in the second Semester of Part III to undertake a foreign language module.
7. In Part III Individual project, Part III Design 3 and Part IV Group Design Project students have the option to undertake environment engineering related projects to develop the specialism in environmental engineering.
8. There is a wide range of optional modules available to students on the MEng programmes in their final year covering the range of advanced topics in water and environmental engineering as well as hydraulic engineering, but also linking to the research interests of the Academic Unit in coastal engineering and energy, including a number of modules that originate with specialist MSc programmes in these areas.

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 sound understanding of the fundamental principles, methods, analysis and synthesis in engineering design and applications appropriate to the Civil and Environmental Engineering disciplines.
- Provide you with a range of specialist modules integrated within the structured learning environment, reflecting the internationally-renowned research expertise within the School, in order to broaden and deepen your educational experience.
- Train you to enable you to become a professional civil engineer that meets the requirements of the Engineering Council (i.e. UK-SPEC), and to have a broad range of knowledge and skills (including IT and communication) capable of meeting the present and future demands of industry and commerce.
- Offer you a degree structure that is relevant to industry and responsive to changes in technology and the needs of the community.
- 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.
- Offer you individual and group projects and assignments which are supported by the research activities within the School and stimulate individual innovation, self-assessment and teamwork skills required in engineering.
- (MEng with Industrial Placement Year) Offer you an opportunity to apply the knowledge you have developed during your studies in Parts I and II and gain experience of working within an engineering based organisation.

Programme Learning Outcomes

The programme provides opportunities for you to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas of learning: science and mathematics; engineering analysis; design; economic, legal, social, ethical and environmental context; engineering practice; and additional general skills. 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>) which is aligned with the Engineering Council publication Accreditation of Higher Education Programmes: 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](https://www.engc.org.uk/engcdocuments/internet/Website/Accreditation%20of%20Higher%20Education%20Programmes%20third%20edition%20(1).pdf))

The learning outcomes below are colour coded to distinguish between those applicable to MEng and to MEng with Industrial Placement Year:

Black = MEng; red = Industrial Placement Year for BEng and MEng.

Codes in the right hand column below indicate the related Engineering Accreditation Board learning outcome (except IPY codes).

Knowledge and Understanding

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

- comprehensive knowledge and understanding of scientific principles and methodology necessary to underpin your education in Civil and Environmental Engineering and an understanding and know-how of the scientific principles of related disciplines, to enable appreciation of the scientific and engineering context, and to support your understanding of relevant historical, current and future developments and technologies SM1
- knowledge and understanding of the mathematical and statistical methods necessary to underpin your education in Civil and Environmental 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 Civil and Environmental Engineering problems SM2

- awareness of developing technologies related to Civil and Environmental Engineering SM4
- comprehensive knowledge and understanding of mathematical and computational models relevant to Civil and Environmental Engineering, and an appreciation of their limitations SM5
- understanding of concepts from a range of areas including some outside engineering, and the ability to evaluate them critically and to apply them effectively in engineering projects SM6
- understanding of engineering principles and the ability to apply them to undertake critical analysis of key engineering processes EA1
- understanding of, and the ability to apply, an integrated or systems approach to solving complex engineering problems EA2
- understanding of and ability to evaluate business, customer and user needs in Civil and Environmental Engineering design including considerations such as the wider engineering context, public perception and aesthetics D1
- understanding of the need for a high level of professional and ethical conduct in engineering including a knowledge of professional codes of conduct and how ethical dilemmas can arise EL1
- knowledge and understanding of the commercial, economic and social context of engineering processes EL2
- knowledge and understanding of management techniques, including project and change management that may be used to achieve engineering objectives, their limitations and how they may be applied appropriately EL3
- understanding of the requirement for engineering activities to promote sustainable development and ability to apply quantitative techniques where appropriate EL4
- awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues, and an awareness that these may differ internationally EL5
- knowledge and understanding of risk issues, including health & safety, environmental and commercial risk, risk assessment and risk management techniques and an ability to evaluate commercial risk EL6
- understanding of the key drivers for business success, including innovation, calculated commercial risks and customer satisfaction EL7
- understanding of the various contexts in which engineering knowledge can be applied (eg operations and management, application and development of technology, etc) P1
- knowledge of characteristics of particular materials equipment, processes, or products relevant to Civil and Environmental Engineering, with extensive 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
- knowledge of relevant legal and contractual issues P5
- understanding of appropriate codes of practice and industry standards P6
- awareness of quality issues and their application to continuous improvement P7
- a thorough understanding of current Civil and Environmental 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
- **understanding of current and developing technical practice within the engineering industry and the business practice of your host organisation** IPY1

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:

- apply and integrate knowledge and understanding of other engineering disciplines to support study of Civil and Environmental Engineering, evaluate them critically and apply them effectively SM3
- identify, classify and describe the performance of systems and components through the use of analytical methods and modelling techniques EA2
- apply quantitative and computational methods, using alternative approaches and understanding their limitations, in order to solve engineering problems and to implement appropriate action EA3
- use fundamental knowledge to investigate new and emerging technologies EA5
- extract and evaluate pertinent data and to apply engineering analysis techniques in the solution of unfamiliar problems EA6
- analyse, evaluate and interpret information from projects and, apply your theoretical knowledge in unfamiliar situations to solve problems, exercise professional judgement in a working context and evaluate and review your performance in the context of an engineering workplace IPY2

Teaching and Learning Methods

Intellectual and research 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. Feedback is provided on all work submitted.

Assessment methods

Analysis and problem solving skills are assessed through unseen written examinations and problem based exercises. Research skills are assessed through laboratory reports, coursework exercises, project reports and oral presentations. Summative assessment is through unseen examinations, extended essays, written reports and oral presentations, and completion of a research project.

Transferable and Generic Skills

Having successfully completed this programme you will be able to:

- apply your skills in problem solving, communication, working with others, information retrieval, and the effective use of general IT facilities G1
- plan self-learning and improve your performance, as the foundation for lifelong learning/CPD G2
- monitor and adjust a personal programme of work on an on-going basis G3
- exercise initiative and personal responsibility, as a team member or leader G4

- identify areas for personal and career development and how these can be addressed, understand the different roles within a team and have the ability to exercise leadership and demonstrate effective understanding of time and project management skills *IPY3*

Teaching and Learning Methods

The development of transferable skills is embedded in all years of the programme starting with induction activities in week 1 of part I through to an extensive design project in part IV. Typically, this takes the form of both individual and group project work, and problem based learning.

Assessment methods

Transferable skills are formatively assessed through written reports and oral presentations, practical and laboratory reports.

Subject Specific Practical Skills

Having successfully completed this programme you will be able to:

- apply relevant practical and laboratory skills P3
- work with technical uncertainty P8
- apply engineering techniques taking account of a range of commercial and industrial constraints P10
- apply your knowledge and skills taking account of commercial and industrial constraints, understand the importance of health and safety in an engineering workplace and evidence continuous professional development by the use of a personal learning log *IPY4*

Teaching and Learning Methods

Experimental, research and design skills are developed through coursework exercises, laboratory, and design and research projects.

Assessment methods

Experimental, research and design skills are assessed through laboratory reports, coursework exercises, project reports and oral presentations.

Discipline Specific Learning Outcomes

Having successfully completed this programme you will be able to:

- investigate and define design problems, identify any constraints including environmental and sustainability limitations; ethical, health, safety, security and risk issues; intellectual property; codes of practice and standards D2
- 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
- apply advanced problem-solving skills, technical knowledge and understanding to establish rigorous and creative design solutions that are fit for purpose for all aspects of a problem including production, operation, maintenance and disposal D4
- plan and manage the design process, including cost drivers, and evaluate outcomes D5
- communicate your design work to technical and non-technical audiences D6
- demonstrate wide knowledge and comprehensive understanding of design processes and methodologies and the ability to apply and adapt them in unfamiliar situations D7
- demonstrate the ability to generate an innovative design for products, systems, components or processes to fulfil new needs D8

- appreciate the relationship between design and construction in civil and environmental engineering IPY5

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 at <http://www.calendar.soton.ac.uk/sectionIV/cats.html>.

In order to allow students to settle in to a University learning style, Part I is not structured in semesters and the majority of assessment occurs towards the end of the academic year. The teaching in Parts II to IV is generally structured as two semesters with an assessment session at the end of each. You study modules comprising 60 ECTS (120 CATS) in each of Parts I (level 4), II (level 5), III (level 6) and IV (level 7). There are several degree possibilities in the programme of study:

- Four years full-time, leading to a Master of Engineering (MEng).
- Five years full-time, leading to a Master of Engineering with Industrial Placement Year (MEng)

In addition, there are the following exit points:

- Certificate of Higher education, following successful completion of Part I.
- Diploma of Higher education, following successful completion of Part II.
- Ordinary Degree of BSc of Engineering (Ordinary), following successful completion of at least 150 ECTS (300 CATS), including 30 ECTS (60 CATS) at level 6.
- Bachelor of Engineering (BEng) with Honours, following successful completion of Part III.

The syllabus and assessment related to each module is detailed in the associated module profile.

Part I is assessed through an integrated set of assessments under the regulations at <https://www.southampton.ac.uk/calendar/sectionvi/feps.page>. In Parts II to IV, progression through the programme and classification of degrees are regulated by the standard university progression and classification rules which may be found in section IV of the University Calendar (<https://www.southampton.ac.uk/calendar/sectioniv/index.page>).

Students studying on MEng Civil and Environmental Engineering with Industrial Placement Year will have their industrial placement only between Parts II and III. Placements are assessed by a written report and presentation on return to the University. It is the responsibility of individual students to find a placement, with full assistance from the Faculty.

The Programme Structure is outlined in Appendix 1. Appendix 2 maps modules to programme learning outcomes. Appendix 3 summarises the summative assessment schedule for part I.

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 first three parts of the MEng cover all technical aspects of civil and environmental engineering. Part IV of our MEng course focuses on design, management and teamwork – key skills that are highly valued by

employers. It also provides the chance to gain in-depth technical understanding and knowledge in subjects of your choice within civil and environmental engineering.

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 4.

Progression Requirements

The programme follows the University's regulations for [Progression, Determination and Classification of Results: Undergraduate and Integrated Masters Programmes](https://www.southampton.ac.uk/calendar/sectioniv/index.page) as set out in the University Calendar <https://www.southampton.ac.uk/calendar/sectioniv/index.page>

Additional regulations applying to the assessment of Part I of your programme, the Industrial Placement Year and our other MEng regulations may be found here:

<https://www.southampton.ac.uk/calendar/sectionvi/feps.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 credits	Minimum ECTS Credits required at level of award
Certificate of HE	at least 60	45
Diploma of Higher Education	at least 120	45
Bachelor of Science (Ordinary)	at least 150	30
BEng (Honours)	At least 180	45

Programme outcomes for different exit points

Level 4 (Part I)	You will have a sound knowledge of the basic concepts in Civil Engineering, and will have learned how to take different approaches to solving problems. You will be able to communicate accurately, and will have the qualities needed for employment requiring the exercise of some personal responsibility.
Level 5 (Part II)	You will have developed a sound understanding of the principles involved in a range of core Civil Engineering subjects, and will have learned to apply those principles more widely. Through this, you will have learned to evaluate the appropriateness of different approaches to solving problems. You will have the qualities necessary for employment in situations requiring the exercise of personal responsibility and decision-making.
Level 6 (Part III)	You will have developed an understanding of a complex body of knowledge relevant to Civil Engineering, some of it at the forefront of current developments. Through this, you will have developed analytical techniques and problem-solving skills that can be applied to a range of engineering problems, and learned to communicate these effectively. As an Honours

	graduate you will be able to evaluate evidence, arguments and assumptions, and to reach sound judgements. You should have the qualities needed for employment in situations requiring the exercise of personal responsibility, and decision-making in complex and unpredictable circumstances.
Level 7 (Part IV)	Much of the study undertaken at Masters level reflects research at the forefront of Civil and Environmental Engineering. 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.

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

Students graduating from our MEng Civil and Environmental Engineering obtain employment as graduate engineers with many leading employers in the civil and environmental engineering sectors, both consultants and contractors and also regulatory authorities and local authorities. Support is available to students from the first year onwards to develop their CVs and interview skills, and the SUCCESS Scholarship scheme links selected first and second year students with sponsoring companies who provide vacation work experience.

Students on the MEng Civil and Environmental Engineering with Industrial Placement Year obtain a year's placement with the support of the University, which significantly increases their graduate employability. In addition to careers in civil and environmental engineering, the transferrable skills that our students obtain make them attractive to a wide range of graduate recruiters, from financial services through to IT and management consultancy.

External Examiner(s) for the programme

Name Professor Marios Soutsos

Institution Queen's University, Belfast

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/studentsservices/academic-life/faculty-handbooks.page> and at http://www.southampton.ac.uk/engineering/undergraduate/courses/civil_engineering/h201_meng_civil_engineering.page?

Revision History
2nd May 2009 (A Anwar)
February 2012 (A Barney/A Bloodworth)
March 2013 (A Bloodworth, for programme renaming)
September 2013 (A Bloodworth, clarify exit points, and option changes)
February 2014 (A Bloodworth, options amended)
June 2014 (A Bloodworth, codes revised for Faculty modules, additional sections added, for programme validation)
4 March 2015 4 March 2015 - FPC (module semester changes)
Update to Programme Overview (CMA Changes) - September 2015
Addition of Industrial Placement Year and textual updates- CQA August 2016
Addition of Summative Assessment Information -CQA August 2017
Updated to reflect 201819 version and removal of Admissions Criteria - CQA March 2018
Updated Faculty name to Faculty of Engineering and Physical Sciences July 2018
February 2018 (M Fernandes de Pinho Lopes, for programme validation; changes to part IV - 120 CATS; AHEP LOs and programme LOs)

Appendix 1

MEng (Hons) Civil and Environmental Engineering,

MEng (Hons) Civil and Environmental Engineering with Industrial Placement Year

The information within this Appendix is liable to change in minor ways from year to year. It is accurate at the time of writing. Where optional modules have been specified, an indicative list of available optional modules are subject to change each academic year. Please note in some instances modules have limited spaces available.

Part I

All modules below are at level 4 and all required assessments are core, i.e. must be taken and passed at the required pass mark. They total 60 ECTS (120 CATS). No option modules will be undertaken in Part I. All modules in Part I are taught over two semesters with any formal examinations held at the end of semester 2. Feedback on progress is provided throughout the year in many ways including via laboratory work, example sheets, tests and coursework.

For information on summative assessment of Part I please see Appendix 3.

Over both semesters	ECTS/CATS Credit Points
CENV1026 Design and Computing for Civil Engineers (core)	15/30
CENV1027 Civil Engineering Fundamentals (core)	15/30
FEEG1003 Thermofluids (core)	7.5/15
FEEG1002 Mechanics, Structures and Materials (core)	15/30
MATH1054 Mathematics for Engineering and the Environment (core)	7.5/15

Part II

Modules at level 5 totalling 60 ECTS/120 CATS credits; all modules compulsory. CENV2006 Soil Mechanics, CENV2031 Structural Analysis and CENV2008 Hydraulics are Core.

Module Code	Module Name	Semester	ECTS/CATS Credit Points
CENV2006	Soil Mechanics (core)	2	7.5/15
CENV2008	Hydraulics (core)	2	7.5/15
CENV2024	Structural Design and Materials	1	7.5/15
CENV2031	Structural Analysis (core)	1	7.5/15
CENV2026	Numerical Methods	2	7.5/15
CENV2027	Construction Management	2	7.5/15
CENV2028	Design 2	1	7.5/15
MATH2048	Mathematics for Engineering and the Environment II	1	7.5/15

Students taking the MEng Civil and Environmental Engineering with an Industrial Placement Year will take the placement module FEEG3009 between Parts II and III. They may not start their Placement until Part II has been passed. Should the placement not be passed students can transfer back to the substantive programme.

FEEG3009 is a core module of the MEng Civil and Environmental Engineering with Industrial Placement Year.

Part III

Modules at level 6 totalling 60 ECTS/120 CATS credits. FEEG3003 Individual Project is Core. Any language Stage taken is to be appropriate to the background of the student, and is to be agreed with the Centre for Language Study. A language module may not be taken in the student's first language.

Module Code	Module Name	Semester	ECTS/CATS Credit Points
FEEG3003	Individual Project (core)	1&2	15/30
CENV3015	Design 3	2	7.5/15
CENV3020	Geotechnical Engineering	1	7.5/15
CENV3056	Structural Engineering	1	7.5/15
CENV3063	Applied Hydraulics	1	7.5/15
	Plus a minimum of 7.5 ECTS/15 CATS credits from:		
CENV3059	Urban Water and Wastewater Engineering	2	7.5/15
CENV3061	Engineering Hydrology	2	7.5/15
	With the remaining credits from:		
ARAB9xxx	Arabic	2	7.5/15
CHIN9xxx	Chinese	2	7.5/15
FREN9xxx	French	2	7.5/15
GERM9xxx	German	2	7.5/15
ITAL9xxx	Italian	2	7.5/15
JAPA9xxx	Japanese	2	7.5/15
LATI9xxx	Latin	2	7.5/15
PORT9xxx	Portuguese	2	7.5/15
RUSS9xxx	Russian	2	7.5/15
SPAN9xxx	Spanish	2	7.5/15

Part IV

Modules at level 7 totalling 60 ECTS/120 CATS credits. FEEG6013 Group Design Project is Core.

Module Code	Module Name	Semester	ECTS/CATS Credit Points
FEEG6013	Group Design Project (core)	1&2	22.5/45
CENV6152	Project Economics and Management	1	7.5/15
	Plus a minimum of 45 credits from:		
CENV6084	Coastal & Maritime Engineering and Energy	1	7.5/15
CENV6085	Waste Resource Management	2	7.5/15
CENV6112	Transport, Energy and the Environment	2	7.5/15
CENV6141	Bioenergy	2	7.5/15
CENV6148	Energy Performance Assessment of Buildings	2	7.5/15
CENV6154	Groundwater Hydrology and Contamination	1	7.5/15
CENV6158	Advanced Wastewater Engineering	2	7.5/15
CENV6162	Water Resources Planning and Management	1	7.5/15
CENV6164	River Engineering	2	7.5/15
	With remaining credits chosen from:		
CENV6090	Energy Resources and Engineering	2	7.5/15
CENV6123	Coastal Flood Defence and Management	2	7.5/15

Modules contributing to meeting the different programme learning outcomes

The learning outcomes below are colour coded to distinguish between those applicable to MEng and to MEng with Industrial Placement Year:

Black = MEng; red = Industrial Placement Year for BEng and MEng.

Core modules indicated in bold.

Knowledge and Understanding

Learning Outcome	Module
SM1	CENV1026; CENV1027; FEEG1002; FEEG1003 CENV2006; CENV2008; CENV2024; CENV2028; CENV2031 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 (FEEG3009) CENV6084; CENV6085; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013
SM2	MATH1054 MATH2048; CENV2008; CENV2026; CENV2028 CENV3063 (FEEG3009) CENV6084; CENV6085; CENV6152; CENV6158; CENV6162; CENV6164
SM4	CENV3059; CENV3061; FEEG3003 (FEEG3009) CENV6084; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6164
SM5	CENV2026 CENV3015; CENV3020; CENV3056; CENV3061; CENV3063 CENV6084; CENV6085; CENV6123; CENV6148; CENV6152; CENV6154; CENV6162; CENV6164
SM6	CENV3059; CENV3061; FEEG3003 (FEEG3009) CENV6084; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164
EA1	CENV1026; CENV1027; FEEG1002; FEEG1003 CENV2006; CENV2008; CENV2024; CENV2026; CENV2028; CENV2031 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 CENV6084; CENV6085; CENV6090; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6162; CENV6164; CENV6158; FEEG6013
EA4	CENV1026; FEEG1003 CENV2026; CENV2028; CENV2031 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061

	CENV6084; CENV6085; CENV6123; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; FEEG6013
D1	CENV1026; CENV1027 CENV2028 CENV3015; CENV3056; CENV3059; CENV3061 CENV6123; CENV6152; CENV6154; FEEG6013
EL1	CENV1027 CENV2027; CENV2028 CENV3056; FEEG3003 (FEEG3009) CENV6085; CENV6148; CENV6152; CENV6164; FEEG6013
EL2	CENV1026; CENV1027 CENV2027; CENV2028 CENV3015; CENV3059; CENV3061 (FEEG3009) CENV6085; CENV6090; CENV6112; CENV6141; CENV6148; CENV6152; CENV6154; FEEG6013
EL3	CENV1027 CENV2027; CENV2028 CENV3015; FEEG3003 (FEEG3009) CENV6085; CENV6112; CENV6152; FEEG6013
EL4	CENV1026 CENV2028 CENV3015; CENV3059; CENV3061 CENV6084; CENV6085; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6162; CENV6164; FEEG6013
EL5	CENV1027 CENV2027 CENV3056; CENV3059; CENV3061; FEEG3003 (FEEG3009) CENV6085; CENV6112; CENV6123; CENV6154; FEEG6013
EL6	CENV1027 CENV2027; CENV2028 CENV3015; CENV3020; CENV3056; CENV3061; FEEG3003 (FEEG3009) CENV6085; CENV6112; CENV6123; CENV6152; CENV6154; CENV6164; FEEG6013
EL7	CENV2027 (FEEG3009) CENV6085; CENV6152; FEEG6013
P1	CENV1026; CENV1027; FEEG1002; FEEG1003

	<p>CENV2006; CENV2008; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031</p> <p>CENV3015; CENV3020; CENV3056; CENV3061; CENV3063; FEEG3003 (FEEG3009)</p> <p>CENV6085; CENV6090; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013</p>
P2	<p>CENV1026; CENV1027; FEEG1002; FEEG1003</p> <p>CENV2006; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031</p> <p>CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; FEEG3003 (FEEG3009)</p> <p>CENV6085; CENV6090; CENV6112; CENV6123; CENV6148; CENV6154; CENV6158; FEEG6013</p>
P4	<p>CENV1026; CENV1027; FEEG1002; FEEG1003</p> <p>CENV2006; CENV2008; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031</p> <p>CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003</p> <p>CENV6085; CENV6090; CENV6123; CENV6141; CENV6148; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013</p>
P5	<p>CENV1027</p> <p>CENV2027</p> <p>CENV3015; CENV3020; CENV3056; CENV3061; FEEG3003 (FEEG3009)</p> <p>CENV6085; CENV6123; CENV6148; CENV6152; CENV6154; FEEG6013</p>
P6	<p>CENV1026; CENV1027</p> <p>CENV2027; CENV2028</p> <p>CENV3015; CENV3020; CENV3056; CENV3061; FEEG3003 (FEEG3009)</p> <p>CENV6085; CENV6123; CENV6148; CENV6152; CENV6154; CENV6158; FEEG6013</p>
P7	<p>CENV1026; CENV1027</p> <p>CENV2028; CENV2031</p> <p>CENV3015; CENV3056; CENV3059; CENV3061 (FEEG3009)</p> <p>CENV6085; CENV6123; CENV6152; CENV6154; CENV6158; FEEG6013</p>
P9	<p>CENV1026; CENV1027</p> <p>CENV3015; CENV3056; CENV3059</p> <p>CENV6084; CENV6085; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; FEEG6013</p>
P11	<p>CENV1027</p> <p>CENV2028</p> <p>CENV3015 (FEEG3009)</p> <p>CENV6152; FEEG6013</p>
IPY1	FEEG3009

Subject Specific Intellectual and Research Skills

Learning Outcome	Module
SM3	CENV1026; CENV1027; FEEG1002; FEEG1003 CENV2024; CENV2026; CENV2028; CENV2031 CENV3056; CENV3059; CENV3061 (FEEG3009) CENV6085; CENV6090; CENV6123; CENV6148; CENV6152; CENV6154
EA2	CENV1026; FEEG1002; FEEG1003 CENV2006; CENV2008; CENV2024; CENV2026; CENV2028; CENV2031 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 CENV6084; CENV6085; CENV6090; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013
EA3	CENV1026; CENV1027; FEEG1002; FEEG1003; CENV2006; CENV2008; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 CENV6084; CENV6090; CENV6112; CENV6123; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013
EA5	CENV3059; CENV3061; FEEG3003 CENV6090; CENV6112; CENV6123; CENV6148; CENV6154; CENV6158; FEEG6013
EA6	CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; FEEG3003 (FEEG3009) CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6164; FEEG6013
IPY2	FEEG3009

Transferable and Generic Skills

Learning Outcome	Module
G1	CENV1026; CENV1027; FEEG1002; FEEG1003; MATH1054 CENV2006; CENV2008; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031; MATH2048 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 (FEEG3009) CENV6084; CENV6085; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013
G2	CENV1026; CENV1027; FEEG1002; FEEG1003; MATH1054 CENV2006; CENV2008; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031; MATH2048 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 (FEEG3009)

	CENV6084; CENV6085; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013
G3	CENV1026; CENV1027; FEEG1002; FEEG1003; MATH1054 CENV2006; CENV2008; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031; MATH2048 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 (FEEG3009) CENV6084; CENV6085; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013
G4	CENV1026; CENV1027; FEEG1002; FEEG1003; MATH1054 CENV2006; CENV2008; CENV2024; CENV2026; CENV2027; CENV2028; CENV2031; MATH2048 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; CENV3063; FEEG3003 (FEEG3009) CENV6084; CENV6085; CENV6090; CENV6112; CENV6123; CENV6141; CENV6148; CENV6152; CENV6154; CENV6158; CENV6162; CENV6164; FEEG6013
IPY3	FEEG3009

Subject Specific Practical Skills

Learning Outcome	Module
P3	CENV1026; CENV1027; FEEG1002; FEEG1003 CENV2006; CENV2008; CENV2024; CENV2028; CENV2031 CENV3015; CENV3063; FEEG3003 (FEEG3009) CENV6164; FEEG6013
P8	CENV1026; CENV1027 CENV2028 CENV3015; CENV3056; CENV3059; CENV3061 CENV6084; CENV6123; CENV6148; CENV6152; CENV6154; CENV6158; CENV6164; FEEG6013
P10	CENV3015; CENV3056; CENV3061 (FEEG3009) CENV6123; CENV6154; FEEG6013
IPY4	FEEG3009

Discipline Specific Learning Outcomes

Learning Outcome	Module
D2	CENV1026; CENV1027 CENV2024; CENV2028 CENV3015; CENV3020; CENV3056; CENV3059; CENV3061; FEEG3003 CENV6085; CENV6090; CENV6123; CENV6148; CENV6152; CENV6154; FEEG6013

D3	CENV1026; CENV1027 CENV2028 CENV3015; CENV3059; CENV3061 CENV6123; CENV6148; CENV6152; CENV6154; CENV6164; FEEG6013
D4	CENV1026; CENV1027 CENV2008; CENV2028 CENV3015; CENV3056; CENV3059; CENV3061 CENV6085; CENV6123; CENV6141; CENV6154; CENV6164; FEEG6013
D5	CENV1026; CENV1027 CENV2028 CENV3015 CENV6085; CENV6152; FEEG6013
D6	CENV1026; CENV1027 CENV2028 CENV3015; FEEG3003 CENV6084; CENV6090; FEEG6013
D7	CENV2028 CENV3015 CENV6084; CENV6085; CENV6152; FEEG6013
D8	CENV2028 CENV3015 FEEG6013
IPY5	FEEG3009

Part I Summative Assessment Schedule

The table below shows the summative assessment structure for Part I:

Schedule A			
	Approximate Timing	Pass Mark	Repeat Assessment mode
Multiple Choice Exam: Engineering Fundamentals	Semester 2 exam period. 2 hours	60%	Internal & External
Long Answer Exam: Engineering Problem Solving	Semester 2 exam period. 2 hours	40%	Internal & External
Discipline Specific Assessment	Semester 1 and 2	40%	Internal & External
Mathematics Exam	Semester 2 exam period. 2 hours	40%	Internal & External
Schedule B			
	Timing	Pass Mark	Repeat Assessment mode
Assessment in Design	End of Semester 2	40%	Internal only
Laboratory Report	End of Semester 2	40%	Internal only
Technical Essay	End of Semester 2	40%	Internal & External

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		Students 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.
Stationery		You will be expected to provide your own day-to-day stationary items, e.g. pens, pencils, notebooks, etc). <ul style="list-style-type: none"> · The third year module FEEG3003 Individual Project requires you to print an AI portrait poster on paper. The typical cost for this is in the range £5 to £20.
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. 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.
IT	Computer discs	For CENV2026, you will need two CDs to submit computer codes. please refer to the module profile for CENV2026.
Clothing	Protective Clothing:	Students are required to purchase their own safety boots for the Constructionarium (CENV1027). A budget cost of £40 should be allowed. Information will be given on Blackboard about local suppliers with whom discounts have been negotiated. Please refer to the module profile for CENV1027.
	Hard hat; safety boots; hi-viz vest/jackets;	

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
	Fieldcourse clothing:	You will need to wear suitable clothing when attending fieldcourses, e.g. waterproofs, walking boots. You can purchase these from any source.
Printing and Photocopying Costs		<p>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. Students are expected to cover the costs associated with the printing of drawings and graphic presentations. These are typically expected to be of the order of £20 - 50 per student. The third year module FEEG3003 Individual Project requires you to print an AI portrait poster on paper at a typical cost of £20.</p> <p>A list of the University printing costs can be found here: https://www.southampton.ac.uk/isolutions/students/printing-for-students.page</p> <p>The third year module FEEG3003 Individual Project requires you to print an AI portrait poster on paper. The typical cost for this is in the range £5 to £20.</p>
Optional Visits (e.g. museums, galleries)		Some modules may include additional optional visits. You will normally be expected to cover the cost of travel and admission, unless otherwise specified in the module profile. For costs related to study abroad please see the relevant module profile.
Travel and Subsistence		For additional costs related to travel and subsistence for the Industrial Placement Year, please refer to the module profile for FEEG 3009.