Programme Specification

MEng (Hons), BEng (Hons) Civil Engineering, MEng (Hons) Civil Engineering with a Year in Industry 2018/19

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	5 years (MEng with Industrial Placement Year), 4 years (MEng), (BEng with Industrial Placement Year), 3 years (BEng)
Accreditation details	Institution of Civil Engineers, Institution of Structural Engineers, Chartered Institution of Highways and Transportation, Institute of Highway Engineers
Final award	Certificate of Higher Education Diploma of Higher Education Bachelor of Engineering (with Honours) Master of Engineering.
Name of award	Civil Engineering Civil Engineering with Industrial Placement Year Civil Engineering with a Year in Industry
Interim Exit awards	Certificate of Higher Education Diploma of Higher Education Bachelor of Science (ordinary)
FHEQ level of final award	Level 7 (MEng), Level 6 (BEng)
UCAS code	H200 BEng Civil Engineering HH20P BEng Civil Engineering with Industrial Placement Year H201 MEng Civil Engineering HH20 MEng Civil Engineering with Industrial Placement Year H202 Civil Engineering with a Year in Industry
QAA Subject Benchmark or other external reference	Engineering, Engineering Council UK-SPEC, Joint Board of Moderators
Director of Programme	Dr Luke Myers
Date specification was written	2nd May 2009 (Dr A Anwar)
Date programme was validated	July 2014
Date specification last updated	August 2017

Programme Overview

Brief outline of the programme

BEng and MEng programmes are offered which are fully accredited 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 very wide range of optional modules in specialist areas relevant to the latest research 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 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.

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 Engineering discipline.
- Provide you with a range of specialist modules integrated within the structured learning environment, reflecting the internationally-renowned research expertise within the Faculty, 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 Faculty and stimulate individual innovation, self-assessment and teamwork skills required in engineering.
- (MEng with Year in Industry) Provide the opportunity to work for a year in industry to complement your academic development with work experience within the context and structure of a degree programme.
- (BEng/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. The programme outcomes have been developed with reference to the Accrediting Institution guidelines and the UK-SPEC Degree Output Standards General and Specific Learning Outcomes.

Knowledge and Understanding

Having successfully completed this programme you will be able to demonstrate knowledge and understanding of:

A1. Mathematics and science that are relevant to Civil Engineering.
A2. The fundamental concepts, principles and theories of Civil Engineering.
A3. Detailed knowledge and understanding of the essential facts, concepts and principles relevant to the practice of Civil Engineering.
A4. The principles of engineering design and construction and their application to conceptual and detailed design.
A5. Information and communication technology relevant to the practice of Civil Engineering.
A6. Management and business practices that are relevant to the Civil Engineering industry.
A7. Health and safety issues, risk assessment and regulatory frameworks.
A8. The social and professional responsibilities of civil engineers.
A9. Environmental issues and the importance of Civil Engineering to the quality of the environment.
A10. The role of the engineers in society and the constraints within which their engineering judgement will be exercised.

Teaching and Learning Methods

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 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:

B1. Plan, conduct and report on an individual research programme.
B2. Analyse and solve engineering problems, using appropriate mathematical methods as necessary.
B3. Be creative in the solution of problems and in design development.
B4. Design engineering elements and systems to meet a need, evaluate critically and make improvements.
B5. Integrate and evaluate information and data from a variety of sources.
B6. Take a holistic approach to solving problems and designing systems, applying professional judgement to balance risks, cost, benefits, safety, reliability, aesthetics and environmental impact.

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.
- Individual feedback is provided on all work submitted.

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.

Transferable and Generic Skills

Having successfully completed this programme you will be able to:

C1. Communicate effectively – in writing, verbally and through drawings
C2. Apply mathematical skills – algebra, geometry, modelling and analysis.
C3. Learn independently in familiar and unfamiliar situations with open-mindedness and in a spirit of critical enquiry.
C4. Work constructively as a member of a team.
C5. Manage time and resources.
C6. Use Information and Communications Technology.
C7. Use the library, internet and other sources effectively.
C8. Manage tasks and solve problems, transfer techniques and solutions from one area to another, apply critical analysis and judgement.
C9. Learn effectively for the purpose of continuing professional development and in a wider context throughout their career.
C10. Communicate in a foreign language when you select a language option or study abroad.

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 year 1 through to an extensive design project in year 4. Typically, this takes the form of both individual and group project work, and problem based learning.

Assessment Methods

Skills are formatively assessed through written reports and oral presentations, practical and laboratory reports. Summative assessment is through unseen examinations, extended essays and completion of a research project, including an interim progress report.

Subject Specific Practical Skills

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

D1. Carry out safely a series of planned experiments.
D2. Use laboratory equipment to generate data.
D3. Analyse experimental results and assess their validity.
D4. Prepare technical drawings including the use of CAD and freehand sketching.
D5. Prepare technical reports.
D6. Give technical presentations using a variety of media.
D7. Use computer packages and write computer programs.
D8. Make effective use of scientific literature from various sources.

Teaching and Learning Methods

Practical skills are developed in experimental laboratories, computer laboratories, design exercises and research based investigations.

Assessment Methods

Practical skills are assessed through laboratory experiment reports, coursework exercises, project reports and 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.

The teaching is structured on a semester pattern. You study modules comprising 60 ECTS (120 CATS) in each of Parts I (level 4), II (level 5) and III (level 6), and 75 ECTS (150 credits) in Part IV (level 7). There are several degree possibilities in the programme of study:

- Three years full-time, leading to a Bachelor of Engineering (BEng) with Honours
- Four year full-time, leading to a Bachelor of Engineering with Industrial Placement Year (BEng) with Honours
- 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 Bachelor of Engineering BEng (Ordinary), following successful completion of at least 150 ECTS (300 CATS), including 30 ECTS (60 CATS) at level 6.

Each module is a self-contained part of the programme of study and carries a credit rating.

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 (http://www.calendar.soton.ac.uk/sectionIV/sectIV-index.html)

Students studying on the MEng Civil Engineering, Year in Industry normally have their industrial placement year between Parts II and III. Students studying on the BEng or MEng Civil Engineering with Industrial Placement Year will have their industrial placement only between Parts II and III. Both 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 duration of MEng Civil Engineering, Year in Industry may be extended by one year through enrolment on the Engineering Foundation Year. This does not apply to those students studying on the MEng Civil Engineering with Industrial Placement Year.

The Programme Structure is outlined in Appendix 1.

Typical course content

The first three parts of the BEng and MEng are identical and cover all technical aspects of civil 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.

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, AutoCAD and Revit Architecture. Skills in AutoCAD and Revit Architecture continue to be developed in Part II Design 2, and the University is a registered test centre that enables students to take the Professional examinations in these packages at the end of the second year free of charge.
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 at the National Construction College in Norfolk. 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 1 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, with the test taking place at the University and the University providing to successful students a CSCS card valid for three years.
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 professional training in the industry standard finite element analysis software LUSAS, 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 one flexible learning module offered from across the University, or a foreign language module. This enables them should they wish to broaden their learning experience and experience new learning styles as well as a wider range of knowledge outside of but relevant to engineering.
7. There is a very wide range of optional modules available to students on the MEng programmes in their final year. Covering the range of advanced topics in the mainstream civil engineering disciplines of structural, geotechnical and hydraulic engineering, but also linking to the research interests of the Academic Unit in water and environmental engineering, coastal engineering, transportation and energy, including a number of modules that originate with specialist MSc programmes in some of these areas.

Programme details

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.

Refer to Appendix 1 for credit structure

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.

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 and can be found in Appendix 4.

Progression Requirements

The programme follows the University's regulations for ***Progression, Determination and Classification of Results: Undergraduate and Integrated Masters Programmes*** as set out in the University Calendar http://www.calendar.soton.ac.uk/sectionIV/sectIV-index.html

Additional regulations applying to the assessment of Part I of your programme, the Industrial Placement Year and our other BEng (Hons)/MEng regulations may be found here: http://www.calendar.soton.ac.uk/sectionVIII/sectVIII-index.html

Intermediate exit points

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
Bachelor of Science (Ordinary)	at least 150	30
Diploma of Higher Education	at least 120	45
Certificate of HE	at least 60	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 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 systems for the support of student learning in the Faculty as well as available from central University facilities.

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
- 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.
- 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.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Student Services Centre
- 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 Destinations, 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 Faculty and your Discipline you will be able to access:

- Coursebooks for each year of the programme.
- Introductory sessions for all years of the programme.
- Library information retrieval seminar.
- Workshop training.
- Small group tutorials in Part of the programmes.
- Engineering Development and Manufacturing Centre (EDMC) equipped with a range of workshop equipment, CAD/CAM.
- Engineering and specific software available on all computers.
- Personal 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.
- 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.
- Faculty 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 Faculty Programmes Committee
- Meetings, individually or as group, with programme external examiner.

It should be noted that meetings with personal 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.
- Subject oriented Teaching Panels, convening at the end of each academic year, which consider the outcomes of each module's evaluation.
- Moderation of examination papers, coursework and projects, both internally and externally.
- Comments by external examiners, who produce an annual report.
- Peer observation of teaching for each member of staff contributing to learning and teaching, once per academic year.
- Annual examiners' meetings and examiners' boards.
- Annual programme and module reviews considering your feedback from all sources, feedback from teaching panels, external examiners and other bodies and student performance.
- Periodic meetings of the Faculty Industrial Advisory Board.
- Response to results from the National Student Survey
- Accreditation by professional institutions.
- Periodic Programme Review by the University.

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

Student graduating from our BEng and MEng degrees obtain employment as graduate engineers with many leading employers in the civil engineering industry, 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 Engineering with a Year in Industry obtain a year's placement with the assistance of the University and the Year in Industry programme, which significantly increases their graduate employability. In addition to careers in civil 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 Examiners(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/studentservices/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, options updated)

September 2013 (A Bloodworth, options amended)

February 2014 (A Bloodworth, options amended

June 2014 (A Bloodworth, codes revised for Faculty modules, additional sections added, for programme validation)_CQA_15072014

04 March 2015 FPC (module semester changes, new options added)

Update to Programme Overview (CMA Changes) – September 2015

Addition of Industrial Placement Year and textual changes – CQA August 2016

Addition of summative assessment for Part 1 – CQA July 2017

Updated to reflect 201819 version and removal of Admissions Criteria – CQA March 2018

Update to Appendix – CQA June 2018

Updated Faculty name to Faculty of Engineering and Physical Sciences July 2018

Appendix 1

MEng (Hons), BEng (Hons) Civil Engineering, BEng/MEng Civil Engineering with Industrial Placement Year, MEng Civil Engineering with a Year in Industry

The information within this Appendix is liable to change in minor ways from year to year. It is accurate at the time of writing.

Part 1

All modules below are at level 4 and are core, i.e. all required assessments 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	15/30
CENV1027 Civil Engineering Fundamentals	15/30
FEEG1003 Thermofluids	7.5/15
FEEG1002 Mechanics, Structures and Materials	15/30
MATH1054 Mathematics for Engineering and the Environment	7.5/15

Part 2

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	2	7.5/15
CENV2008	Hydraulics	2	7.5/15
CENV2024	Structural Design and Materials	1	7.5/15
CENV2031	Structural Analysis	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 Engineering with a Year in Industry spend a year normally between Parts II and III on industrial placement, assessed in the module CENV3064 Year in Industry (30 CATS).

Students taking the BEng Civil Engineering or MEng Civil 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.

Part 3

Modules at level 6 (or one option may be taken at Level 5) 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 project	2	7.5/15
CENV3020	Geotechnical Engineering	1	7.5/15
CENV3056	Structural Engineering	1	7.5/15
CENV3060	Highway and Traffic Engineering	1	7.5/15
	Plus a minimum of 7.5 ECTS/15 CATS credits from:		
CENV3059	Water & Wastewater Engineering 1	2	7.5/15
CENV3061	Engineering Hydrology	2	7.5/15
CENV3057	Urban Design	2	7.5/15
CENV3065	Railway Engineering and Operations	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 4

MEng

Modules at level 6 and 7 totalling 75 ECTS/150 CATS credits. FEEG6013 Group Design Project is Core. No more than 15 ECTS/30 CATS credits may be taken at Level 6

Module Code	Module Name	Semester	ECTS/ CATS Credit Points
FEEG6013	Group Design Project	1&2	22.5/45
CENV6152	Project Economics and Management	1	7.5/15
	Plus a minimum of 60 credits from:		
CENV6084	Coastal & Maritime Engineering and Energy	1	7.5/15
CENV6085	Waste Resource Management	2	7.5/15
CENV6086	Advanced Structural Engineering	2	7.5/15
CENV6112	Transport, Energy and the Environment	2	7.5/15
CENV6122	Advanced Foundation Engineering	2	7.5/15
CENV6134	Earthquake Engineering	1	7.5/15
CENV6141	Bioenergy	2	7.515
CENV6148	Energy Performance Assessment of Buildings	2	7.5/15
CENV6153	Transport Modelling	1	7.5/15
CENV6154	Groundwater Hydrology and Contamination	1	7.5/15
CENV6158	Water and Wastewater Engineering 2	2	7.5/15
CENV6162	Water Resources Planning and Management	1	7.5/15
CENV6164	River Engineering	2	7.5/15

FEEG3004	Human factors in Engineering	1	7.5/15
FEEG6010	Advanced Finite Element Analysis	2	7.515
FEEG6011	Architectural and Building Acoustics	2	7.5/15
SESG6039	Composites Engineering Design and Mechanics	1	7.5/15
MATH3081	Operational Research	1	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
SESG3019	Teaching and Communication and the UG Ambassador Scheme	1	7.5/15

		Knowledge and Understanding										Subject Specific Intellectual Skills						Transferable/Key Skills										Subject specific practical skills								
Module Code	**Module Title**	**A 1**	**A 2**	**A 3**	**A 4**	**A 5**	**A 6**	**A 7**	**A 8**	**A 9**	**A 10**	**B 1**	**B 2**	**B 3**	**B 4**	**B 5**	**B 6**	**C 1**	**C 2**	**C 3**	**C 4**	**C 5**	**C 6**	**C 7**	**C 8**	**C 9**	**C 10**	**D 1**	**D 2**	**D 3**	**D 4**	**D 5**	**D 6**	**D 7**	**D 8**	
MATH 1054	Mathematics for Engineering and the Environment	x																x	x			x														
FEEG 1003	Thermo Fluids	x	x										x					x	x	x	x	x		x				x	x	x		x				
FEEG 1002	Mechanics, Structures and materials	x	x										x					x	x	x	x	x		x				x	x	x		x				
CENV 1026	Design and Computing for Civil Engineers		x	x	x	x	x	x	x				x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x			x		
CENV 1027	Civil Engineering Fundamentals	x	x	x		x				x			x			x		x	x	x	x	x	x	x	x			x	x	x		x		x		
CENV 2006	Soil Mechanics	x	x	x	x								x	x		x		x	x	x	x	x		x	x			x	x	x		x				
CENV 2008	Hydraulics	x	x	x	x								x	x		x		x	x	x	x	x		x	x			x	x	x		x				
CENV 2024	Structural Design and Materials	x	x	x	x								x	x	x	x			x	x		x	x	x		x										
CENV 2031	Structural Analysis	x	x	x	x								x		x	x		x	x	x		x	x	x	x	x		x	x	x		x		x	x	
CENV 2026	Numerical Methods	x	x	x	x								x		x	x		x	x	x		x	x	x	x	x				x		x		x	x	
CENV 2027	Construction Management		x	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x		x	x	x	x	x						x		x	x	

| | | |

CENV 6085	Waste Resource Management	x	x	x	x		x	x		x			x			x	x		x						x					x		x				
CENV 6086	Advanced Structural Engineering		x	x	x								x		x	x		x	x	x		x		x	x										
CENV 6112	Transport, Energy and the Environment	x	x	x		x		x		x			x	x		x	x	x	x	x		x	x	x	x	x				x		x	x	x	x	
CENV 6122	Advanced Foundation Engineering	x	x	x	x	x		x					x	x	x	x	x	x	x	x		x	x	x	x	x						x		x	x	
CENV 6134	Earthquake Engineering	x	x	x				x	x				x		x	x		x	x	x		x		x	x	x						x			x	
CENV 6141	Bioenergy	x	x	x	x					x		x	x			x	x	x	x	x		x		x	x							x	x		x	
CENV 6148	Energy Performance Assessment of Buildings	x	x	x	x					x	x		x	x	x		x	x	x	x					x					x		x		x	x	
CENV 6153	Transport Modelling	x	x	x		x	x		x		x		x	x		x	x	x	x	x		x	x	x	x	x								x		
CENV 6154	Groundwater Hydrology and Contamination	x	x	x		x		x		x			x	x	x	x	x	x	x	x		x	x	x	x	x						x		x	x	
CENV 6164	River Engineering	x	x	x	x	x		x		x	x		x	x	x	x	x	x	x	x		x	x	x	x	x						x		x	x	
CENV 6158	Water and Wastewater Engineering 2	x	x	x	x	x		x	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x						x		x	x	
FEEG 6010	Advanced Finite Element Analysis	x	x			x		x					x	x	x	x		x	x	x		x	x	x	x	x				x		x		x	x	
CENV 6162	Water Resources Planning and Management	x	x	x		x		x	x	x	x		x	x	x	x	x	x	x	x		x	x	x	x	x				x		x		x	x	

FEEG 3004	Human Factors in Engineering																																			
FEEG 6011	Architectural and Building Acoustics	x	x	x	x					x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x		x		x	x	
SESG 6039	Composites Engineering Design and Mechanics	x	x	x	x								x	x	x	x		x	x	x	x	x		x	x	x		x	x	x		x			x	
MAT H3081	Operational Research	x		x		x	x						x	x		x	x	x	x	x	x	x	x	x	x	x						x		x	x	
CENV 6090	Energy Resources and Engineering	x	x							x		x				x	x	x	x														x	x		x	
CENV 6123	Coastal Flood Defence and Management		x	x	x	x	x	x		x	x		x	x	x	x	x	x	x	x													x		x	x	
SESG 3019	Teaching and Communication and the UG Ambassador Scheme								x		x	x		x	x	x	x	x		x	x	x		x	x	x							x		x	

Appendix 2

Part 1 Modules Assessment

Module	Title	CATS	Teamwork	Report	Essay	Exam	Other	LO info	Repeat internal only	Notes
CENV1026	Design and Computing for Civil Engineers	30								Tbc
CENV1027	Civil Engineering Fundamentals	30								Tbc
FEEG1002	Mech, Structures & Materials	30				100%				
FEEG1003	ThermoFluids	15				100%				
MATH1054	Math for E and E	15				100%				
				√				G1, G2, G3b	√	
					√			G1, G2, G3b		

Appendix 3

Part I Summative Assessment Schedule

The table below shows the summative assessment structure:

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

Appendix 4:

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 approved models are Casio FX-570 and Casio FX-85GT Plus. These may be purchased from any source and no longer need to carry the University logo.
Stationery		You will be expected to provide your own day-to-day stationary items, e.g. pens, pencils, notebooks, etc). Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
T**extbooks**		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. CENV3020 Students may wish to purchase a copy of the Powrie textbook, cost circa £40. **https://www.southampton.ac.uk/courses/modules/cenv3020.page**

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
		FEEG1002 Book: Callister, cost circa £60, but large number available in library **https://www.southampton.ac.uk/courses/modules/feeg1002.page**
Equipment and Materials	Design equipment and materials:	Standard construction/modelling materials will be provided where appropriate, unless otherwise specified in a module profile. For customisation of designs/models calling for material other than standard construction/ modelling materials, students will bear the costs of such alternatives. CENV1026 Students are provided with a sketch book and drawing equipment for design at the start of the year, but replacement costs are borne by the student. CENV1026 A range of standard construction materials are provided to support the Design Project within this module. However, students are encouraged to develop unique designs and choose alternative materials, the costs of which will be covered by the Faculty should they be deemed appropriate and clearly presented by a given cut-off date. The costs of additional materials and components identified after this date would be borne by the student group. **https://www.southampton.ac.uk/courses/modules/cenv1026.page** CENV2026 A range of standard construction materials are provided to support the design projects within this module. However, students are encouraged to develop unique designs and choose alternative materials, the costs of which will be covered by the Faculty should they be deemed appropriate and clearly presented by a given cut-off date. The costs of additional materials and components identified after this date would be borne by the student group. **https://www.southampton.ac.uk/courses/modules/cenv2026.page** CENV2028 A range of standard construction materials are provided to support the design projects within this module. However, students are encouraged to develop unique designs and choose alternative materials, the costs of which will be covered by the Faculty should they be deemed appropriate and clearly presented by a given cut-off date. The costs of additional materials and components identified after this date would be borne by the student group. 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 £50 per group (typically five students per group), also depending on the quality of printing chosen. **https://www.southampton.ac.uk/courses/modules/cenv2028.page**

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
		CENV3015 A range of standard construction materials are provided to support the design projects within this module. However, students are encouraged to develop unique designs and choose alternative materials, the costs of which will be covered by the Faculty should they be deemed appropriate and clearly presented by a given cut-off date. The costs of additional materials and components identified after this date would be borne by the student group. **https://www.southampton.ac.uk/courses/modules/cenv3015.page** CENV3057 A range of standard construction materials are provided to support the design projects within this module. However, students are encouraged to develop unique designs and choose alternative materials, the costs of which will be covered by the Faculty should they be deemed appropriate and clearly presented by a given cut-off date. The costs of additional materials and components identified after this date would be borne by the student group. **https://www.southampton.ac.uk/courses/modules/cenv3057.page**
	Field Equipment and Materials:	CENV1027 For field trips, students will need to wear suitable clothing e.g. waterproofs and stout shoes. You can purchase these from any source. Travel for field trips will be provided. Students will be expected to bring or purchase their own lunch and any additional refreshments https://www.southampton.ac.uk/courses/modules/cenv1027.page
IT	Computer Discs	CENV2026 The costs associated with printing courseworks (approx.20-40 pages) and two CDs to submit computer codes to be covered by the each student. **https://www.southampton.ac.uk/courses/modules/cenv2026.page**
Clothing	Lab Coats	
	Protective Clothing: Hard hat; safety boots; hi-viz vest/jackets;	CENV1026 Students are required to purchase their own safety boots for the Constructionarium. A budget cost of £40 should be allowed for. Information will be given on Blackboard about local suppliers with whom discounts have been negotiated.
	Fieldcourse clothing:	You will need to wear suitable clothing when attending fieldcourses, e.g. waterproofs, walking boots. You can purchase these from any source.

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
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. CENV1026 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 £50 per group (typically three students per group), also depending on the quality of printing chosen. CENV2026 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 £50 per group (typically five students per group), also depending on the quality of printing chosen. . **https://www.southampton.ac.uk/courses/modules/cenv1026.page** CENV2028 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 £50 per group (typically five students per group), also depending on the quality of printing chosen. **https://www.southampton.ac.uk/courses/modules/cenv2028.page** CENV3015 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 £50 per group (typically five students per group), also depending on the quality of printing chosen. **https://www.southampton.ac.uk/courses/modules/cenv3015.page** CENV3057 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 £50 per group (typically five students per group), also depending on the quality of printing chosen. **https://www.southampton.ac.uk/courses/modules/cenv3057.page** FEEG3003 Students are responsible for the printing costs of their poster for the Poster Presentation Day. This may range from approximately £5 - £20. **https://www.southampton.ac.uk/courses/modules/feeg3003.page** In addition to the experimental, computational and workshop resources available, reasonable expenses for travel and materials of up to £100 may be reclaimed through the Faculty Student Office.

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
		FEEG6013 – Group Design project Students are expected to cover the costs associated with the printing and binding of reports and the printing of drawings and graphic presentations. These are typically expected to be of the order of £100 per group, also depending on the quality of printing and binding chosen. Note that funds from the project's budget cannot be used for this purpose **https://www.southampton.ac.uk/courses/modules/feeg6013.page**
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.
Travel and Subsistence		FEEG3009 Industrial Placement year. You will need to find your own accommodation near to your place of work. You are responsible for travel and subsistence costs.
Anything else not covered elsewhere		**FEEG3003 Individual Project** In addition to the experimental, computational and workshop resources available, reasonable expenses for travel and materials of up to £80 may be reclaimed through the Faculty Student Office. **https://www.southampton.ac.uk/courses/modules/feeg3003.page**