

Programme Specification

BSc (Hons) Environmental Monitoring and Modelling 2017/18

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 of study	3 years
Accreditation details	Institute for Environmental Science OR Institute for Environmental Management and Assessment (TBC)
Final award	Bachelor of Science (hons)
Name of award	Environmental Monitoring and Modelling
Interim Exit awards	Certificate of Higher Education Diploma of Higher Education Bachelor of Science (Ordinary Degree)
FHEQ level of final award	Level 6
UCAS code	F751
QAA Subject Benchmark or other external reference	Primarily from the ES3 benchmark document, with input from Computing benchmark document
Director of Programme	Dr Patrick Osborne
Programme Lead	Malcolm Hudson
Date specification was written	24/02/2014
Date programme was validated	July 2014
Date specification last updated	August 2017

Programme Overview

Brief outline of the programme

This programme will focus on applying existing and emerging information technologies to solving environmental problems. Students will gain a deep understanding of core environmental systems and processes – from the hydrosphere, biosphere and atmosphere – combined with a computational thinking approach that will enable them to apply their technical skills in an environmental context. During Part I students will take modules covering core environmental processes, field research and quantitative methods and an introduction to programming, as well as developing their study skills to a university standard. The second Part focusses on technical skills specific to environmental problem solving – GIS, Remote Sensing and Environmental Instrumentation and Monitoring – whilst maintaining and developing other technical skills (data management and quantitative methods) and subject knowledge (Environmental Practice and Issues and an optional contextual module). During Part III the students will take advanced modules in GIS and Environmental Modelling, as well as having the opportunity to apply these skills in the field. They will carry out two independent research projects, one literature based – with a mandatory IT focus – and their dissertation. The dissertation could involve developing a novel solution to an environmental monitoring problem, or using large, complex datasets to develop a model in order to answer environmentally related research questions. On completion of the degree programme, it is envisaged students will be employed in organisations such as the Environment Agency, the Met Office, the Centre for Ecology and Hydrology or large engineering consultancies.

Learning and teaching

This programme will take a problem-based approach to student learning. In each year, the students will have an opportunity to apply their subject knowledge and technical skills to a tangible environmental problem – be this a group project (as in the first year field course) or their individual dissertation. In order to equip the students with the necessary knowledge to understand the environmental problems with which they are faced, they will participate in lectures, tutorials and site-visits. Their technical skills will be developed via computer and “wet” labs, as well as on the field-trips.

Assessment

Students will be assessed on a formative and summative basis throughout the course. Formative assessment will be carried out by specific assignments in the first year, with individual and generic feedback provided. Assignments will include an essay, a practical report and a group oral presentation. Summative assessment will take the form of formal exams (multiple choice, short answer and essay-based), individual essays and practical reports, assessed presentations and group reports and presentations.

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 students with a thorough understanding of the functioning and management of the environment, based on firm scientific foundations
- Provide students with the opportunity to develop specialist knowledge and skills in the application of computer based technology to solving environmental problems
- Enable students to become life-long-learners who are able to maintain and improve their awareness and understanding of new technological developments in the field of environmental monitoring and modelling
- Enable students to develop their problem solving skills as part of a team and on an individual basis
- Produce graduates who can think critically about the environment in the contemporary world and are able to pursue independent study in the subject with enthusiasm
- Develop key transferable skills so that graduates are capable of reaching their full potential and playing a full role in society including careers in academic and / or professional environmental fields, and in non-environmental science professions, industry and commerce.

Programme Learning Outcomes

Programme outcomes have been formulated with reference to the QAA benchmark statement for Earth Sciences, Environmental Sciences and Environmental Studies (ES3).

Knowledge and Understanding

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

- A1 the need for both a multi-disciplinary and an interdisciplinary approach in advancing knowledge and understanding of Earth systems, drawing, as appropriate, from the natural and the social sciences
- A2 the processes which shape the natural world at different temporal and spatial scales and their influence on and by human activities
- A3 the terminology, nomenclature and classification systems used in environmental science

- A4 methods of acquiring, interpreting and analysing environmental science information with a critical understanding of the appropriate contexts for their use
- A5 issues concerning the availability and sustainability of resources, for example, the different value sets relating to the Earth's resources as commodities and/or heritage
- A6 the contribution of environmental science to debate on environmental issues and how knowledge of these forms the basis for informed concern about the Earth and its people
- A7 the contribution of environmental science to the development of knowledge of the world we live in
- A8 the applicability of environmental science to the world of work
- A10 approaches to handling complex datasets efficiently in order to explore, visualise, analyse and model environmental processes
- A11 the principles and practice of devising instrumentation for environmental data acquisition

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. Strong emphasis is also placed on the importance of using the flexibility of the programme to build an individual portfolio of knowledge and skills and which reflects your particular interest(s) in the environment.

Assessment methods

Knowledge is assessed throughout the programme through a combination of formative methods (to provide you with constructive feedback to help you develop your skills and understanding) and summative methods (to assess your performance). Formative assessment takes the form of feedback on essays, practical reports and oral presentations, and is stressed during earlier stages of study. Formative assessment is delivered in part through informal assessment of work that does not contribute directly to your performance in modules (e.g. class debriefings on oral presentations). Summative assessment takes the form of unseen examinations and tests, multiple choice examinations, short answer papers, and various project work and coursework. You will also be given feedback on your work as part of summative assessment.

Subject Specific Intellectual and Research Skills

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

- B1 recognising and using subject-specific theories, paradigms, concepts and principles
- B2 analysing, synthesising and summarising information critically, including prior research
- B3 collecting and integrating several lines of evidence to formulate and test hypotheses
- B4 applying knowledge and understanding to complex and multidimensional problems in familiar and unfamiliar contexts
- B5 recognising the moral and ethical issues of investigations and appreciating the need for professional codes of conduct

Teaching and Learning Methods

Intellectual skills are developed through lectures, seminars, tutorials, workshops, discussion groups (verbal and internet), and laboratory and practical exercises. Independent reading from a wide range of sources (printed and electronic) covering a variety of issues (linked to formal module material and general environmental issues) also contributes to the development of your intellectual skills by exposing you to differing opinions and perspectives. Applications of theoretical concepts to real-life situations are explored and evaluated by compilation of a portfolio, including personal and professional skills portfolios, and experiential learning assessment.

Assessment methods

A wide range of assessment methods is used to assess intellectual skills, including formal unseen examinations, coursework, oral & poster presentations, internet discussions, and peer assessment.

Transferable and Generic Skills

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

- C1 receiving and responding to a variety of information sources (e.g. textual, numerical, verbal, graphical)
- C2 communicating appropriately to a variety of audiences in written, verbal and graphical forms
- C3 appreciating issues of sample selection, accuracy, precision and uncertainty during collection, recording and analysis of data in the field and laboratory
- C4 preparing, processing, interpreting and presenting data, using appropriate qualitative and quantitative techniques and packages including geographic information systems
- C5 solving numerical problems using computer and non-computer-based techniques
- C6 using the internet critically as a means of communication and a source of information
- C7 identifying individual and collective goals and responsibilities and performing in a manner appropriate to these roles
- C8 recognising and respecting the views and opinions of other team members
- C9 evaluating performance as an individual and a team member
- C10 developing the skills necessary for self-managed and lifelong learning (e.g. working independently, time management and organisation skills)
- C11 identifying and working towards targets for personal, academic and career development
- C12 developing an adaptable and flexible approach to study and work

Teaching and Learning Methods

Development of key skills is through training sessions, workshops, tutorials and through self-evaluation using *pro-forma* learning skills portfolios. Key skills are delivered through core subjects and are emphasized early in the programme to ensure that these skills are in place for use throughout later stages of study. Completion of the various tasks required in modules primarily aiming to deliver knowledge and understanding also contributes to development of these skills, for example, by self-reflection of feedback, organising time to meet deadlines, and use of ICT to produce written work and deliver oral or visual presentations. Written communication skills are practised in all modules. In addition to work done by individuals, tasks are also undertaken in groups in some modules, for which training is at an early stage in the programme (Part I).

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, and work-based learning skills portfolios.

Subject Specific Practical Skills

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

- D1 planning, conducting, and reporting on environmental investigations, including the use of secondary data
- D2 collecting, recording and analysing data using appropriate techniques in the field and laboratory
- D3 undertaking field and laboratory investigations in a responsible and safe manner, paying due attention to risk assessment, rights of access, relevant health and safety regulations, and sensitivity to the impact of investigations on the environment and stakeholders
- D4 referencing work in an appropriate manner
- D5 using advanced mathematical tools and statistical methods for the analysis of complex datasets
- D6 designing and building instrumentation for environmental monitoring

Teaching/learning methods

Subject practical skills are developed early in the programme (Part I) to ensure you have an appropriate level of competence, regardless of your previous training and experience. Skills are developed to a higher level in a compulsory field course (Part III). Field courses focus on field techniques and practices, and on working safely. Skills acquired may underpin practical exercises and projects in optional modules and may underpin the final year research project. The use of published data and information is used to provide context and comparison for practical and research projects, along with use of secondary data.

Assessment

Formative assessment of knowledge acquired is through formal written reports, oral presentations, inspection of field notebooks and inspection of the risk assessments completed prior to undertaking field surveys. Summative assessment is primarily made through written reports assessments on completion of projects.

Programme Structure

Typical course content

Part I will provide a knowledge and skill foundation, from which the remainder of the programme will progress. Core environmental science knowledge and understanding will be covered with modules on the earth's physical, biological and chemical systems and cycles. Students will be introduced to relevant field, laboratory and analytical methods and tools in the context of environmental science research. Visits to local study sites will give the opportunity to practice these skills in the field, whilst the residential field-trip will include a student-led group research project where all the knowledge, research and field skills are put into practice.

Part II will cover more specialised analytical techniques, including spatial analysis and advanced statistical modelling. A new, flagship module will cover environmental instrumentation and monitoring, during which students will: learn how to set up and use cutting edge environmental monitoring equipment; develop novel solutions to environmental monitoring problems; collect and analyse environmental data and present the findings. Students will continue to develop their wider environmental knowledge and understanding via Environmental Practice and Issues, and will also begin to develop their own specialism via an optional module – this will be chosen from a selected list which includes a range of the University-wide Curriculum Innovation modules.

During Part III, students will further develop their analytical and technological skills via advanced GIS and spatial analysis modules. An optional module (again, chosen from a carefully selected list) will allow for further specialisation. A residential fieldtrip will provide the opportunity to learn more advanced field-techniques and to carry out a group research project. Two individual research projects (one literature-based and one field or lab-based) will allow students to apply their research skills in an area of personal interest.

Special Features of the programme

The programme includes two residential field-trips, and numerous one-day field / site visits. Part II Environmental Instrumentation and Monitoring module involves practical work with cutting-edge environmental monitoring kit, such as differential GPS surveying equipment, infra-red cameras, air-quality monitors and anemometers, as well as the opportunity to develop unique solutions to monitoring problems using equipment such as Raspberry Pi boards. Throughout the course, students will be encouraged to solve problems independently and to “learn how to learn”.

Programme details

The full list of core, compulsory and optional modules available to environmental science students is laid out in **Appendix 1**. Students are able to tailor their degree via option modules in Parts II and III, and also through choice of research project topics in all Parts (ENVS1007, ENVS2013, FEEG3003).

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 2.

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 2.

Progression Requirements

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

Faculty regulations specific to this degree as set out in the University Calendar <http://www.calendar.soton.ac.uk/sectionVIII/fee-ug.html>

Intermediate exit points (where available)

You will be eligible for an interim exit award if you complete part of the programme but not all of it, as follows:

Qualification	Minimum overall credit in ECTS/CATS credits	Minimum ECTS/CATS Credits required at level of award
Bachelor of Science (Honours)	At least 180/360	45/90
Bachelor of Science (ordinary)	at least 150/300	30/90
Diploma of Higher Education	at least 120/300	45/90
Certificate of Higher Education	at least 60/120	45/90

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
- 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.

Associated with your programme you will be able to access:

- A personal academic tutor to support you in your studies and pastoral care
- Membership of the professional accreditation body
- Professional and learning resources provided by the accreditation body
- Membership of the Environmental Sciences Student Society (ESSS)

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

- Completing student evaluation questionnaires for each module of the programme
- Acting as a student representative on various committees, e.g. Staff: Student Liaison Committees, Faculty Programmes Committee OR providing comments to your student representative to feed back on your behalf.
- Serving as a student representative on Faculty Scrutiny Groups for programme validation
- Taking part in programme validation meetings by joining a panel of students to meet with the Faculty Scrutiny Group

The ways in which the quality of your programme is checked, both inside and outside the University, are:

- Regular module and programme reports which are monitored by the Faculty
- Programme validation, normally every five years.
- External examiners, who produce an annual report
- Professional body accreditation/inspection
- A national Research Assessment Exercise (our research activity contributes directly to the quality of your learning experience)
- Institutional Review by the Quality Assurance Agency

Criteria for admission

The University's Admissions Policy www.southampton.ac.uk/admissions_policy applies equally to all programmes of study. The following are the typical entry criteria to be used for selecting candidates for admission. The University's approved equivalencies for the requirements listed below will also be acceptable. The entry criteria for our programmes are reviewed annually by the Faculty. Those stated below were correct as of July 2017. Applicants should refer to their specific offer conditions on their offer letter.

Undergraduate programmes

Qualification	Grades	Subjects required	Subjects not accepted	EPQ Alternative offer (if applicable)	Contextual Alternative offer (if applicable)
GCE A level	ABB (including 2 science subjects)	Mathematics or Physics	General Studies Critical Thinking Use of Maths Thinking Skills	One A level grade (or equivalent) lower combined with EPQ at grade B or higher.	BBB
BTEC	DDD including relevant science modules	Science Modules and Mathematics	Na	Na	DDM including relevant science modules
International Baccalaureate	32 Points overall, 16 at Higher Level including 5 in Higher Level Mathematics or Physics	Higher Level Mathematics or Physics	Na	Na	30 Points overall, 16 at Higher Level including 5 in Higher Level Mathematics or Physics
GCSE	C	English			
	C	Mathematics			

Mature applicants

Mature applicants are offered the Science Foundation Year

Recognition of Prior Learning (RPL)

The University has a [Recognition of Prior Learning Policy](#). Entry to Part II is acceptable upon completion of a comparative Part I and / or Part II at another institution. Each case is assessed on an individual assessment based on copies of transcripts and Learning outcomes.

English Language Proficiency As per the University's Admissions policy on English Language requirements, found here, www.southampton.ac.uk/admissions-language the requirements for this programme are: International English Language Testing System (IELTS) – Band C

Overall	Reading	Writing	Speaking	Listening
6.5	5.5	5.5	5.5	5.5

University Commitment

The University will at all times seek to operate admissions regulations that are fair and are in accordance with the law of the United Kingdom, and the University's Charter, Statutes, Ordinances and Regulations.

This includes specific compliance with legislation relating to discrimination (e.g. Equality Act 2010) and the University's Equal Opportunities Policy Statement. This includes a commitment that the University will:

- actively assist groups that experience disadvantage in education and employment to benefit from belonging to the University
- actively seek to widen participation to enable students that do not traditionally participate in Higher Education to do so;
- ensure that admission procedures select students fairly and appropriately according to their academic ability and that the procedure is monitored and regularly reviewed.

Entry Requirements

A typical offer for entry to our BSc and MEnvSci degrees may be found on the University website at https://www.southampton.ac.uk/engineering/undergraduate/courses/environmental_sciences_list.page?

Alternative qualifications

We are happy to receive applications from candidates with alternative qualifications; these will be considered on individual merit provided they contain sufficient maths and science content.

International applications

Applications from candidates resident in other European countries and overseas are welcome and will be considered on individual merit, provided they contain sufficient maths and science content.

If your first language is not English, we need to ensure that your listening, written and spoken English skills would enable you to enjoy the full benefit of your studies. For entry onto our programmes, you will need an International English Language Testing System (IELTS) score of 6.5 or an equivalent qualification.

Mature applicants

Applications from mature applicants are welcome - your qualifications and experience will be considered on individual merit, provided they contain sufficient maths and science content.

Equality and diversity:

In accordance with the University's Equality and Diversity Policy, all reasonable effort will be made to ensure that no prospective or existing student is treated less favourably on the grounds of age, race, colour, nationality, ethnic origin, creed, disability, HIV status, sexual orientation, gender, marital or parental/carer status, political belief or social or economic class, or any other type of discrimination.

Disabled applicants will be treated according to the same procedures as any other applicant with the added involvement of Enabling Services to assess their needs. The programme may require adaptation for students with disabilities (e.g. hearing impairment, visual impairment, mobility difficulties, dyslexia), particularly the practical laboratory sessions, and we will attempt to accommodate students wherever possible.

Career Opportunities

This innovative new programme will focus on combining the core knowledge of the earth's systems and processes that environmental scientists need, with technical skills necessary for monitoring environmental phenomena.

Career opportunities for graduates of this degree course are wide ranging and include: environmental monitoring; modelling; water resources and pollution control; carbon management; sustainable waste management; sustainable energy; wildlife conservation and ecological management; consultancy; and academic research.

External Examiners(s) for the programme

Name Dr Karen Anderson

Institution. University of Exeter

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 (or other appropriate guide) or online at (<http://www.southampton.ac.uk/studentservices/academic-life/faculty-handbooks.page>).

Revision History

1. Minor revisions (including title) 10 July 2007 (SCK)
2. New Brand added July 2008
3. Updated to reflect University restructuring June 2011 AB.
4. Revisions approved by Senate 19 June 2013 as part of new programme validation process
5. Minor changes made to form guidance on completion of Intended Learning Outcomes, and Learning outcomes and Assessment Mapping document template, for clarity; and changes to wording of support for student learning section, altering to second person throughout – agreed with the Chair and to be reported to UPC October 2013_CQA_150714
6. Update to Programme Overview (CMA Changes) – September 2015
7. Change to modules March 2016
8. CQA textual updates August 2016, March 2017, August 2017

BSc (Hons) Environmental Monitoring and Modelling 2016/17

Appendix 1: Programme Structure

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

Core = must be taken and must be passed at 40% or higher.

Compulsory (Comp) = must be taken and must be passed at the University pass mark or higher.

Part I Core/Compulsory Modules

Module Code	Module Name	Credit Points ECTS/CATS	Choice Type	Semester	Level
ENVS1004	Environmental Science: Concepts and Communication	7.5/15	Core	1 & 2	4
ENVS1005	Quantitative Methods	7.5/15	Core	1	4
ENVS1006	Environmental Science: Research & Applications	7.5/15	Core	1 & 2	4
ENVS1007	Environmental Field Techniques & Applications	7.5/15	Core	2	4
FEEG1001	Design and Computing	15/30	Comp	1 & 2	4

Part II Optional Modules

Note that a maximum of 15 ECTS/30 CATS of optional modules at level 4 are permitted

Module Code	Module Name	Credit Points ECTS/CATS	Choice Type	Semester	Level
	Maximum of 15 ECTS/30 CATS from:				
BIOL1003	Ecology & Evolution	7.5/15	O	2	4
GEOG1001	The Earth System	7.5/15	O	2	4
SOES1008	Earth and Ocean System	7.5/15	O	1	4

Part II Core/Compulsory Modules

Module Code	Module Name	Credit Points ECTS/CATS	Choice Type	Semester	Level
COMP2202	Database and Database Applications	7.5/15	Comp	1	5
ENVS2008	GIS for Environmental Scientists	7.5/15	Core	2	5
ENVS2011	Advanced Quantitative Methods	7.5/15	Core	2	5
ENVS2012	Environmental Instrumentation	7.5/15	Core	1	5
ENVS2013	Practical Environmental Monitoring	7.5/15	Core	2	5
ENVS2014	Environment and Sustainability	7.5/15	Core	1	5
ENVS3011	Environmental Field Studies	7.5/15	Core	1	6
GEOG2007	Remote Sensing for Earth Observation	7.5/15	Comp	1	5

Part II Optional Modules

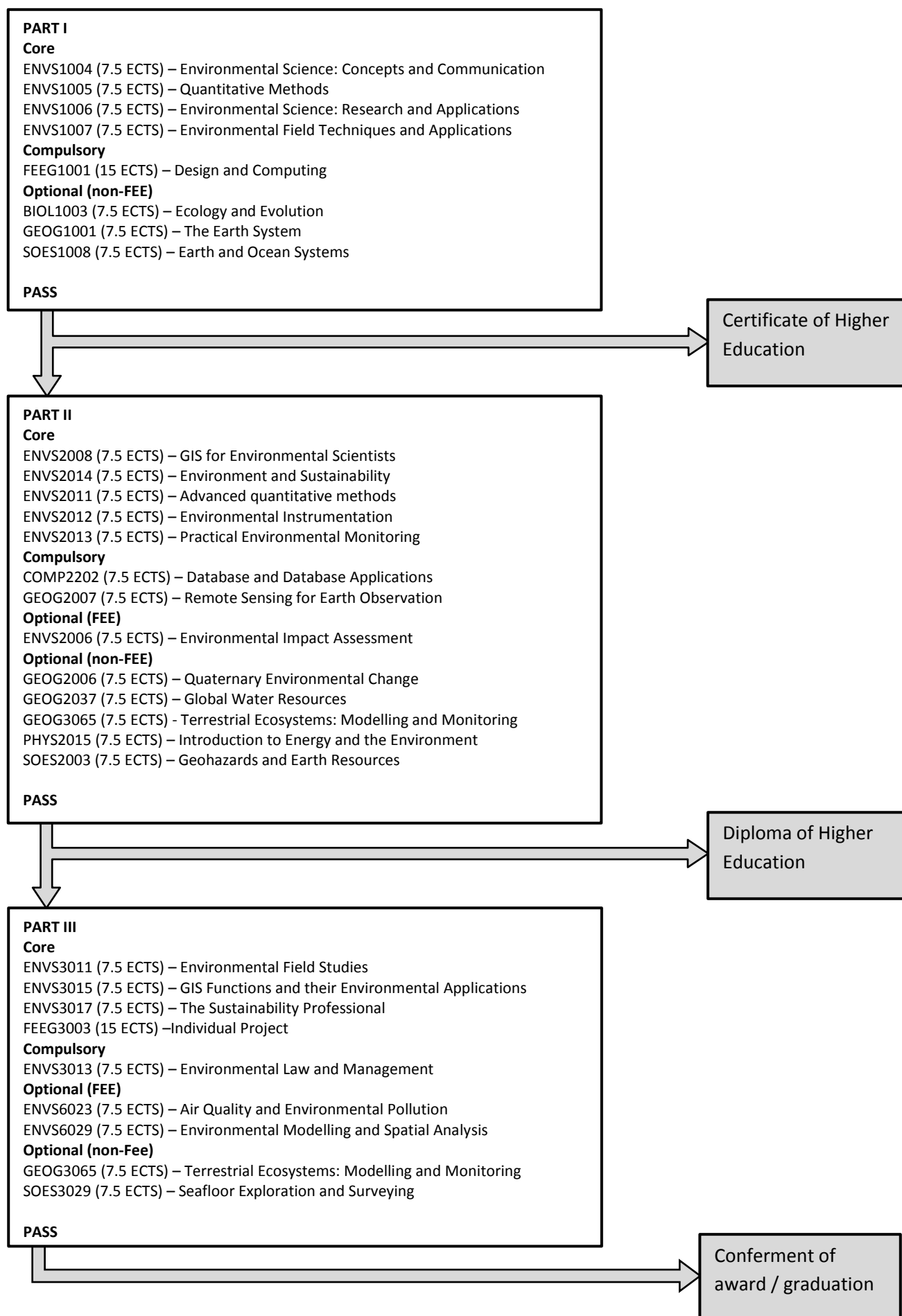
Module Code	Module Name	Credit Points ECTS/CATS	Choice Type	Semester	Level
ENVS2006	Environmental Impact Assessment	7.5/15	O	2	5
GEOG2006	Quaternary Environmental Change	7.5/15	O	1	5
GEOG2037	Global Water Resources	7.5/15	O	2	5
PHYS2015	Introduction to Energy in the Environment	7.5/15	O	2	5
SOES2003	Geohazards and Earth Resources	7.5/15	O	2	5

Part III Core/Compulsory

Module Code	Module Name	Credit Points ECTS/CATS	Choice Type	Semester	Level
ENVS3011	Environmental Field Studies	7.5/15	Core	1	6
ENVS3013	Environmental Law & Management	7.5/15	Comp	2	6
ENVS3015	GIS Environmental Functions	7.5/15	Core	1	6
FEEG3003	Individual Project	7.5/15	Core	1 & 2	6

Part III Optional Modules

Module Code	Module Name	Credit Points ECTS/CATS	Choice Type	Semester	Level
SOES3029	Seafloor Exploration and Surveying 1	7.5/15	O	2	6
ENVS6023	Air Quality & Environmental Pollution	7.5/15	O	1	7
ENVS6029	Environmental Modelling & Spatial Analysis	7.5/15	O	2	7



Learning outcomes and Assessment Mapping

		Knowledge and Understanding										Subject-specific Intellectual Skills							Transferable/Generic Skills													Subject-specific Practical Skills					
Module code	Module title	A1	A2	A3	A4	A5	A6	A7	A8	A10	A11	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	D1	D2	D3	D4	D5	D6
ENVS1004	ES concepts and communication	x	x	x	x	x	x	x	x			x	x		x				x	x				x	x	x	x	x	x	x					x		
ENVS1005	Quantitative Methods	x	x	x	x			x	x			x	x	x	x				x		x	x	x					x				x	x				
ENVS1006	ES Research & Applications	x	x	x	x	x	x	x				x	x	x	x	x			x	x	x	x	x	x				x				x	x	x	x		
ENVS1007	Env Field Tech & Applies	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	x	x	x		
ENVS2008	GIS for Env Scientists	x	x	x	x		x	x				x	x		x				x	x	x	x	x	x				x				x	x		x		
ENVS2009	Env Practice & Issues	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		
ENVS20XX	Env Instrum & Mon	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		x
ENVS20YY	Adv Quant Methods	x	x	x	x			x		x			x	x	x	x			x	x	x	x	x	x								x			x	x	
ENVS3010	Research Project	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	x		
ENVS3011	Env Field Studies	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	x	x		
ENVS3015	GIS Functions & Env Applies	x	x	x	x		x	x	x			x	x		x				x	x		x	x	x	x	x	x	x		x			x		x		
ENVS3XXX	The Sustainability Professional	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	x	x	x		

Assessment mapping for core modules contributing to the learning outcomes

Module Code	Module Title	Coursework 1	Coursework 2	Coursework 3	Coursework 4	Exam 1	Exam 2
ENVS1004	ES concepts and comms	Essay 50%				Unseen 1 hour 50%	
ENVS1005	Quantitative Methods	Practical test 2 hours 50%	Practical test 2 hours 50%				
ENVS1006	ES Research & Applications	Practical report 35%	Fieldwork proposal 25%			Multiple choice exam 40%	
ENVS1007	Env Field Tech & Applies	Practical report 80%	Group presentation 20%				
ENVS2008	GIS for Env Scientists	Practical portfolio 30%	Consultancy report 40%	Assessed practical 30%			
ENVS2014	Environment & Sustainability	Group film 40%	Internet seminars 60%				
ENVS2011	Advanced Quantitative Methods	Poster presentation 40%				Practical exam 1 30%	Practical exam 2 30%
ENVS2012	Env Instrumentation and Monitoring	Individual essay 40%	Group presentation 10%	Group report 40%			
FEEG3003	Research Project	Interim report 15%	Presentation and oral examination 10%	Final report 75%			
ENVS3011	Env Field Studies	Project proposal & risk assessment 10%	Group report 20%	Journal article 50%	Group presentation 20%		
ENVS3015	GIS Functions and their Env Applications	Group Review of GI Software 25%	Individual Essay 25%	Development of a bespoke GI tool 50%			
ENVS3017	The Sustainability Professional	Sustainability Consultancy Report. Individual	Sustainability Portfolio. Individual submission (50% of module)				

		submission (50% of module)					
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Appendix 2:

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.
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:	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.

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
Clothing	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, which are detailed in the individual Module Profile.</p> <p><u>FEEG3003</u> Students are responsible for the printing costs of their poster for the Poster Presentation Day. This may range from approximately £5 - £20. http://www.southampton.ac.uk/engineering/undergraduate/modules/feeg3003_individual_project.page</p>
Field Trips	Other:	<p><u>ENVS1004</u> The cost of travel, accommodation and required safety equipment, along with breakfast and dinner if required, will be paid for by the University. Costs to you: You will need to provide and wear your own suitable clothing when attending field courses, e.g. waterproofs, walking boots. You can purchase these from any source and costs will vary depending on your preference. You will be expected to purchase your own lunch and any additional refreshments. http://www.southampton.ac.uk/engineering/undergraduate/modules/envs1004_environmental_science_concepts_and_communication.page?</p> <p><u>ENVS1006</u> The cost of travel, accommodation and required safety equipment, along with breakfast and dinner if required, will be paid for by the University. Costs to you: You will need to provide and wear your own suitable clothing when attending field courses, e.g. waterproofs, walking boots. You can purchase these from any source and costs will vary depending on your preference. You will be expected to purchase your own lunch and any additional refreshments. http://www.southampton.ac.uk/engineering/undergraduate/modules/envs1006_environmental_science_research_and_applications.page?</p> <p><u>ENVS1007</u> The cost of travel, accommodation and required safety equipment, along with breakfast and dinner if required, will be paid for by the University. Costs to you: You will need to provide and wear your own suitable clothing when attending field courses, e.g. waterproofs, walking boots. You can purchase these from any source and costs will vary depending on your preference. You will be expected to purchase your own lunch and any additional refreshments. http://www.southampton.ac.uk/engineering/undergraduate/modules/envs1007_environmental_field_techniques_and_applications.page?#overview</p> <p><u>ENVS2008</u> The cost of travel, accommodation and required safety equipment, along with breakfast and dinner if required, will be paid for by the University. Costs to you: You will need to provide and wear your own suitable clothing when attending field courses, e.g. waterproofs, walking boots. You can purchase these from any source and costs will vary depending on your preference. You will be expected to purchase your own lunch and any additional refreshments. http://www.southampton.ac.uk/engineering/undergraduate/modules/envs2008_gis_for_environmental_scientists.page?</p> <p><u>ENVS3011</u> The cost of travel, accommodation and required safety equipment, along with breakfast and dinner if required, will be paid for by the University. Costs to you: You will need to provide and wear your own suitable clothing when attending field courses, e.g. waterproofs, walking boots. You can purchase these from any source and costs will vary depending on your preference. You will be expected to purchase your own lunch and any additional refreshments. http://www.southampton.ac.uk/engineering/undergraduate/modules/envs3011_environmental_field_studies.page?</p> <p><u>ENVS3015</u> The cost of travel, accommodation and required safety equipment, along with breakfast and dinner if required, will be paid for by the University. Costs to you: You will need to provide and wear your own suitable clothing when attending field courses, e.g. waterproofs, walking boots. You can purchase these from any source and costs will vary depending on your preference. You will be expected to purchase your own lunch and any additional refreshments.</p>

Main Item	Sub-section	PROGRAMME SPECIFIC COSTS
		http://www.southampton.ac.uk/engineering/undergraduate/modules/envs3015_gisenvironmental_functions_and_applications.page?#overview
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.
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. http://www.southampton.ac.uk/engineering/undergraduate/modules/feeg3003_individual_project.page