

Programme Specification

BSc (Hons) Marine Biology (2019-20)

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

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Full-time
Duration in years	3
Accreditation details	Institute of Marine Engineering, Science and Technology (IMarEST)
Final award	Bachelor of Science with Honours (BSc (Hons))
Name of award	BSc Marine Biology
Interim Exit awards	Certificate of Higher Education (CertHE) Diploma of Higher Education (DipHE)
FHEQ level of final award	Level 6
UCAS code	F713
Programme code	8164
QAA Subject Benchmark or other external reference	
Programme Lead	Tom Ezard (te1e12)

Programme Overview

Brief outline of the programme

Marine biology seeks to understand patterns of biological diversity and quantify change in the marine ecosystem by studying how organisms interact with their environment and respond to change. Marine Biology has developed exponentially over the past years with, for example, the discovery of hydrothermal vents and cold seeps; the ability to conduct experimental programmes at sea; the use of molecular methods in marine biology and the huge expansion of the data base on marine animals.

There has been a massive increase in the interest in marine biodiversity, in terms of the actual species, the causes of such high biodiversity, the scope for exploitation of these natural resources and the potential impact of climate and anthropogenic influences on biodiversity. As a result, marine biology students can expand their biology-knowledge base while appreciating the physico-chemical aspects of the marine environment

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

Learning and teaching

You will develop core knowledge and understanding of subject specific and transferable key skills via compulsory modules and specialised option module lectures. Teaching and learning through the degree programmes will be supported by tutor- and student-led tutorials, seminars and presentations, essays and report writing. You will be trained to make use of peer-reviewed internet sources to support guided independent study, group study and your own research.

Experimental, research, experimental design, data processing and interpretive/analytical skills are further developed through laboratory and practical classes and fieldwork (including boatwork).

Assessment

To test your knowledge and understanding of material presented in the lectures and associated practicals, you will be assessed via a combination of written examinations, essays, group and individual oral presentations, poster presentations and short coursework assignments. Experimental, analytical and research skills are assessed through laboratory experiment write-ups, library based project work, research project reports, field notebooks, fieldwork/boatwork exercises and/or reports.

Special Features of the programme

Fieldwork is an essential and exciting component of your degree programme and is incorporated into various modules. For example in part 2 a 7-day residential field course, currently Dale Fort in South Wales (timetabled in SOES2017).

Further information is available in the Student Handbooks and on the Academic Unit web pages: <http://www.southampton.ac.uk/oes/>. Details of the individual modules taken in each part are provided in the pathway guides.

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

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

Educational Aims of the Programme

You will undertake a balanced programme where you will gain the relevant skills and knowledge for a career in Biology and Marine Biology.

The aims of this programme are to provide:

- A stimulating, informed learning environment through a wide range of interesting and contemporary courses, with flexibility of choice, but allowing you to increasingly focus as you progress from level to level.
- The opportunity to develop a knowledge and understanding of living organisms at several levels of biological organisation from the molecular, through cells and whole organisms, to ecosystems; and from an evolutionary perspective.
- An understanding of (marine) biological systems and processes in theory and practice.
- Exposure to a range of (marine) biological concepts.
- The opportunity to construct individual programmes of study within a coherent framework, including advanced concepts and techniques in biological topics of your choice.
- Training in relevant laboratory and field work skills.
- An opportunity to develop a range of transferable skills (information and communication technology, team working, written and oral communication, time management, planning, data collection, analysis and presentation), and the capacity to give a clear and accurate account of the subject.
- An opportunity for you to develop the ability to think critically and to show that you can pursue

independent study.

- Independent research projects on (marine) biological topics.
- An education and training suitable for a wide variety of careers and to prepare you for higher degrees and careers in (marine) biological research.
- The capability for life-long learning, study and enquiry.

Programme Learning Outcomes

Knowledge and Understanding

On successful completion of this programme you will have knowledge and understanding of:

- A1. The need for both multi-disciplinary and an interdisciplinary approach in advancing knowledge and understanding of Earth and marine systems.
- A2. The processes which shape the natural world at different temporal and spatial scales, and their influence on and the modification by human activity.
- A3. The terminology, nomenclature and classification systems used and developed within the disciplines of marine science.
- A4. Methods of acquiring, interpreting and analysing all relevant forms of scientific 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 marine and Earth scientific expertise to debates on environmental issues and how knowledge of these forms the basis for informed concern about the Earth and its people.
- A7. The contribution of your subject to the development of knowledge about the world we live in.
- A8. The relevance of knowledge and skills acquired on your programme of study to professional activity, environmental impact and the world of work.

Teaching and Learning Methods

You will develop core knowledge and understanding of subject specific and transferable key skills via compulsory modules and specialised option module lectures. Teaching and learning through the degree programmes will be supported by tutor- and student-led tutorials, seminars and presentations, essays and report writing. You will be trained to make use of peer-reviewed internet sources to support guided independent study, group study and your own research.

Experimental, research, experimental design, data processing and interpretive/analytical skills are further developed through laboratory and practical classes and fieldwork (including boatwork).

Assessment Methods

To test your knowledge and understanding of material presented in the lectures and associated practicals, you will be assessed via a combination of written examinations, essays, group and individual

oral presentations, poster presentations and short coursework assignments. Experimental, analytical and research skills are assessed through laboratory experiment write-ups, library based project work, research project reports, field notebooks, fieldwork/boatwork exercises and/or reports.

Subject Specific Intellectual and Research Skills

On successful completion of this programme you will be able to:

- B1. The fundamentals of each major discipline (chemistry, physics, biology and geology) applied to the marine sciences.
- B2. The core concepts in biological, chemical and physical processes operating in the marine environment and their interactions.
- B3. The biology and ecology of marine species and their relationship with their habitat throughout all marine ecosystems.
- B4. The organisation of biological organisms from whole individual through to cellular and genetic levels.
- B5. Collection of quantitative data from the biological and physical marine environment.
- B6. The implications of climate change on the marine environment, and the role of marine systems in climate change.
- B7. An awareness of human impact and exploitation on the biological and physical environment and its natural resources, and the resulting feedback on human societies.
- B8. A specialist selection of topics currently at the frontiers of research in marine biology and many of the specialist techniques used to investigate them.
- B9. The range of mathematical and statistical methods applied to the biological and physical marine sciences.

Transferable and Generic Skills

On successful completion of this programme you will be able to:

- C1. Recognise and use marine/biological/oceanographic specific theories, paradigms, concepts and principles.
- C2. Critically analyse, synthesise and summarise information, including prior research.
- C3. Collect and integrate several lines of evidence to formulate and test hypotheses.
- C4. Apply knowledge and understanding to address familiar and unfamiliar problems, including collection and documentation of marine biological/oceanographic information in the field, experimental design of field surveys and sampling programmes.
- C5. Recognise the moral and ethical issues of investigations and appreciating the need for professional codes of conduct.
- C6. Communicate effectively to a variety of audiences in written, verbal and graphical forms.
- C7. Select and use the appropriate method and means of communication for a range of different situation.
- C8. Absorb and respond to a variety of information sources (e.g., textual, numerical, verbal, graphical).
- C9. Appreciate issues of sample selection, accuracy, precision and uncertainty during collection, recording and analysis of data in the field and in the laboratory.
- C10. Prepare, process, interpret and present data, using appropriate qualitative and quantitative techniques, univariate and multivariate statistical analyses and computer software packages, including geographic information systems.

- C11. Develop computing and data analysis skills in a wide range of techniques.
- C12. Solve numerical problems.
- C13. Critically use the Internet as a means of communication and as a source of information.
- C14. Identify individual and collective goals and responsibilities and perform in an appropriate manner.
- C15. Recognise and respect the views and opinions of other team members.
- C16. Appreciate the concepts of experimental learning in groups and team performance.
- C17. Evaluate performance as an individual and as a team member.
- C18. Develop the skills necessary for self-managed and life-long learning (e.g. working independently, time management and organisation skills).
- C19. Identify and work toward targets for personal, academic and career development.
- C20. Develop an adaptable and flexible approach to study and work.

Subject Specific Practical Skills

On successful completion of this programme you will be able to:

- D1. Plan, design, conduct and report, both verbally and in writing, on investigations, including the use of secondary data
- D2. Collect, record and analyse primary data using appropriate techniques in the field and laboratory
- D3. Undertake 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. Locate, retrieve, read, use and reference the marine biological work of others in an appropriate manner.

Programme Structure

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note in some instances modules have limited spaces available.

Part 1 (Year 1)

Typical course content

The programme is offered as a full-time course. The BSc Marine Biology normally lasts for three years.

Study is divided into three parts - each part normally corresponding to one year of full-time study. The programme is delivered in a semester pattern, each semester having 12 weeks for teaching and learning and 2-3 weeks for examinations.

The programme is divided into individual study modules at each part. Each study module is accredited as being worth a certain number of credit points to you on successful completion. Modules are normally worth 7.5 ECTS which is equivalent to 150 hours of study. Normally up to 60 hours comprises contact teaching (lectures, practical sessions, tutorials, etc.), and the remainder of the time is for your own independent study. Modules are generally assessed at the end of each semester, but some are assessed entirely by coursework throughout the duration of the module.

In Part 1 there are a number of compulsory modules, which lay a solid foundation in the basic discipline of this programme. More specialised training and options that enable diversification commence in Part 2.

In Part 3, students are exposed to the forefronts of the discipline's knowledge, with the opportunity to conduct supervised original research.

A full list of the modules available for each part under each programme and module profiles are provided on the academic unit's website at: <http://www.southampton.ac.uk/oes/undergraduate/courses.page> and <http://www.southampton.ac.uk/biosci/undergraduate/courses.page?>

Part I

Year 1

The following Modules are compulsory and must be taken:

Code	Module Title	ECTS	Type
SOES1008	Earth and Ocean System	7.5	Compulsory
SOES1011	Introduction to Functional Marine Biology	7.5	Compulsory
SOES1006	Introduction to Marine Ecology and Evolution	7.5	Compulsory
SOES1005	Introduction to Ocean Biogeochemistry	7.5	Compulsory
SOES1013	Key Skills for Marine Scientists	7.5	Compulsory
SOES1007	Marine Invertebrates	7.5	Compulsory
SOES1004	Physical Oceanography I	7.5	Compulsory
SOES1015	Quantitative Methods in Marine Sciences	7.5	Compulsory

Part II (Year 2)

Part II (Year 2) Compulsory Modules

The following modules are compulsory and must be taken

Code	Module Title	ECTS	Type
SOES2030	Dale Field Marine Biology Fieldwork Skills	7.5	Compulsory
SOES2011	Marine Vertebrates	7.5	Compulsory
SOES2006	Phytoplankton and Primary Production	7.5	Compulsory
SOES2027	Coastal and Estuarine Oceanography II	7.5	Compulsory
SOES2036	Quantitative Methods in Marine Science	7.5	Compulsory

Part II (Year 2) Option Modules

Choose 3 modules from the following

Code	Module Title	ECTS	Type
SOES2017	Marine Benthos Ecology	7.5	Compulsory
SOES2026	Molecular Tools for Advancing Marine Biology Research	7.5	Compulsory
SOES2024	Coastal and Estuarine Oceanography I	7.5	Compulsory
SOES2032	Palaeobiology	7.5	Compulsory
GEOG2010	Introductory Geographic Information Systems	7.5	Compulsory

Part III (Year 3)

Part III (Year 3) Compulsory Modules

The following modules are compulsory and must be taken

Code	Module Title	ECTS	Type
SOES3046	Independent Research Project (Oceanography, Marine Biology)	15	Compulsory
SOES3018	Applied Oceanography and Fieldwork	7.5	Compulsory

Part III (Year 3) Optional Modules

Choose 5 modules from the following

Code	Module Title	ECTS	Type
BIOL3009	Applied Ecology	7.5	Optional
SOES3013	Zooplankton Ecology and Processes	7.5	Optional
SOES3041	Communicating and Teaching in the Undergraduate Ambassadors Scheme	7.5	Optional
BIOL3056	Global Change Biology	7.5	Optional
SOES3017	Marine Fisheries Ecology	7.5	Optional
SOES3031	Marine Molecular Biology	7.5	Optional
SOES3053	Understanding Coral Reefs	7.5	Optional
SOES3054	Marine Conservation and Policy	7.5	Optional
GEOG3068	Biogeography	7.5	Optional

Progression Requirements

The programme will follow 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 General Academic Regulations in the University Calendar:

<http://www.calendar.soton.ac.uk/sectionIV/sectIV-index.html>

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 Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia).
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV
- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community, (18.00-08.00)
- 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 tutor system - our tutorial system aims to provide personalised pastoral and academic care for all students. You will be allocated a member of the academic staff as your personal tutor on arrival at University, and he/she will be charged with your guidance throughout your undergraduate career. You will also have a shadow tutor for contact if your personal tutor is absent. You can also approach the Programme Leader for Marine Biology, or the Academic Unit's Senior Tutor if necessary.
- Programme and module guides/information. Hard copies are available, but are mainly published on the web: www.southampton.ac.uk/oes/ and www.blackboard.soton.ac.uk.
- Two large computer clusters at the NOCS for dedicated use by undergraduate students, with extra computer resources for M-level students. Additional computer clusters are available for your use on the other University campuses, as well as at the Halls of Residence.
- Teaching staff via email and personal contact.
- Support from the administrative staff of the Student Office, which is readily available during the normal working day.
- Training on Ocean and Earth Science's research vessels, which are fully equipped for boatwork practicals and project work in the local estuary and coastal waters and in our shore-side laboratory and aquarium facilities.
- Equipment to support your field work, including laptop computers, GPS, specialised shipboard data acquisition systems deployed from the 19m research vessel RV Callista.
- A research-led environment at the NOCS, which provides a high quality learning environment for

students.

- A wide range of well-equipped laboratories and aquaria which are available for student project work, and specific study rooms.
- Close collaboration between Ocean and Earth Science and staff from the Natural Environment Research Council's NOCS provides additional support for student learning, particularly with regard to independent research projects.
- Specialised teaching labs and lecture theatre at the NOCS.

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, OES Education and Quality Committee, Faculty Programmes Committee OR providing comments to your student representative to feedback 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.
- Accreditation carried out by the Institute for Marine Engineering, Science and Technology (IMarEST).
- A national Research Assessment Exercise (our research activity contributes directly to the quality of your learning experience).
- Institutional Review by the Quality Assurance Agency.

Further details on the University's quality assurance processes are given in the [Quality Handbook](#).

Career Opportunities

This programme of study aims to maximise students' career opportunities via provision of the following:

Provide you with a high quality and intellectually stimulating experience of learning in a supportive environment.

- Equip you to undertake a successful career as a professional marine biologist in the public or private arena, or in a wide range of other contexts.
- Provide you with a sound background and suitable qualification that would enable you to proceed to a more specialist higher degree at the MSc or PhD level.
- Develop your critical and analytical problem-solving powers, especially in relation to the marine sciences, but also those which have a broader application.
- Develop your intellectual, practical and fieldwork skills in the collection, analysis, interpretation and understanding of marine biological and oceanographic data.
- Develop your powers of observation, analysis and understanding in order that you can make decisions with appropriate acknowledgement of uncertainties.
- Give you the experience of undertaking an original project at the forefront of Earth or marine science in a professional research environment.
- Provide you with opportunities for shared multi-disciplinary learning in the marine sciences.
- Enable you to engage with life-long learning, study and enquiry, and to appreciate the value of education and research to society.
- Enhance your interpersonal skills, particularly in the context of the work place.

Possible paths for graduates of this programme include:

- Postgraduate degrees
- Teaching
- Government agencies, e.g. British Antarctic Survey; the Environment Agency
- Global corporations, e.g. British Petroleum
- Nature Conservation Groups
- Research laboratories
- Commercial consultancies

External Examiner(s) for the programme

Name: Dr Kerry Howell - Plymouth University

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 Academic 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.

Appendix 1:

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 also have to pay for:

Additional Costs

Type	Details
Clothing	<p>Lab coats and safety spectacles: Marine Biology students will receive a lab coat, dissection kit and waterproof notebook during Induction. If these are lost the student must replace them at their own expense.</p> <p>Field course clothing: You will need to wear suitable clothing when attending field courses, e.g. waterproofs, walking boots. You can purchase these from any source.</p>
IT	<p>Data Storage: Students are expected to provide their own data storage device</p> <p>Software Licenses: Will be provided by the University where appropriate.</p> <p>Hardware: It is advisable that students provide their own laptop or personal computer, although shared facilities are available across the University campus.</p>
Stationery	<p>You will be expected to provide your own day-to-day stationery items, e.g. pens, pencils, notebooks, etc. Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.</p>
Textbooks	<p>Where a module specifies core texts these should generally be available on the reserve list in the library. However, students may prefer to buy their own copies. These can be purchased from any source.</p> <p>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.</p>
Approved Calculators	<p>Candidates may use calculators in the examination room only as specified by the University and as permitted by the rubric of individual examination papers. These may be purchased from any source and no longer need to carry the University logo.</p>
Fieldwork: logistical costs	<p>Where a student contribution is made, invoices will be issued approximately 2 weeks prior to the start of a field course and payment will be due within 7 days. Dates and costs are correct at the time of going to press.</p> <p>Oceanography students will receive a lab coat and waterproof notebook during Induction.</p>
Insurance	<p>Students are automatically insured whilst on University organised field courses undertaken as part of their official studies</p>
Equipment and Materials	<p>Field Equipment and Materials: For compulsory residential field courses, accommodation and travel are provided (for Independent Geology Mapping a fixed amount is provided to cover these costs for the least expensive area). You are usually expected to cover the costs of food and drink, although some courses may include meals. For optional field courses, students are asked to make a contribution to the travel and/or accommodation costs. Details are</p>

	<p>provided in the table below.</p> <p>Please note that if a field course is compulsory for your degree programme and you later move from that degree programme to one where that field course is optional, you will be charged for the cost of that field course. To provide an example: students on the MSci Marine Biology programme undertaking the field course to Bermuda will be charged the full cost of the field course if they later choose to transfer to the BSc Marine Biology degree programme.</p> <p>In addition to the field courses mentioned in this booklet, there are also one-day field courses associated with specific modules; students are expected to cover food and drink costs for these days, but transport is arranged and paid for by the department. As the department arranges transport, should students wish to make their own way to or from field courses, then they must meet these costs themselves.</p>
Printing and Photocopying Costs	<p>Coursework such as essays, projects and dissertations may be submitted online. However, some items will require submission as a printed copy, including some items where it is not possible to submit online. The University printing costs for taught students are currently:</p> <p>A4 - 4p per side (black and white) or 18p per side (colour) A4 - 7p double sided (black and white) or 35p double sided (colour) A3 - 8p per side (black and white) or 35p per side (colour) A3 - 14p double sided (black and white) or 50p double sided (colour)</p> <p>Please remember that we are unable to refund any credit that has not been used by the end of your course, so please consider this when topping up your printing/copy account.</p> <p>You will be given a printing allowance towards the costs of printing lecture handouts or you may choose to use digital versions only during lectures.</p> <p>The University Print Centre also offer a printing and copying service as well as a dissertation/binding service. They also provide a large format printing service, e.g. Academic posters.</p>

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.