UNIVERSITY OF LIVERPOOL

Marine Biology BSc (Hons)

COURSE DETAILS

- A level requirements: ABB
- UCAS code: C160
- Study mode: Full-time
- Length: 3 years

KEY DATES

- Apply by: 25 January 2023
- Starts: 25 September 2023

Course overview

From microscopic algae to giant whales, most of our planet's life is found in the oceans. As a marine biologist, you will learn about the behaviour, physiology, and ecology of marine organisms.

INTRODUCTION

You will discover how individuals, populations and communities respond to environmental drivers such as temperature and food availability, as well as to the challenges presented by a changing climate and human interaction. You will also gain the varied skills necessary to examine the marine environment and relay your findings to audiences from the general public through to government bodies.

Contemporary marine biology requires a broad set of skills, including field work, writing and presentation, and data analysis. In your first two years of study, you will develop these core skills and, in year three, you will take advanced modules in areas of interest to you to further develop your overall understanding and growing expertise.

You can choose modules from across the School of Environmental Sciences and from the School of Life Sciences. In each year there are topics such as climate change and ocean physics, population ecology, physiology, conservation, parasitology, microbiology, molecular biology and genetics.

Our research-led teaching approach allows our students to engage with up-to-the-minute science and policy in lectures, practical work, and in their independent research projects in year three. This is an opportunity to explore fields or skills of interest, often working on unanswered questions in marine science. Recent projects include investigating physiological data on how cormorants stay warm while diving in frigid Arctic waters, building

mathematical models of coral reefs, and looking at the impacts of a wind farm on benthic communities.

A number of the School's degree programmes involve laboratory and field work. Fieldwork is carried out in various locations, ranging from inner city to coastal and mountainous environments. We consider applications from prospective disabled students on the same basis as all other students, and reasonable adjustments will be considered to address barriers to access.

WHAT YOU'LL LEARN

- Evolutionary processes
- Laboratory and field techniques
- Diversity of live in the marine environment
- Human threats to ecosystems
- Quantitative skills
- Coastal biodiversity
- Analysis of environmental data
- Conducting independent research

ACCREDITATION

Our degree is one of only a handful in the UK to be accredited by the Institute of Marine Engineering, Science and Technology (IMAREST), opening up opportunities for students and graduates of our programmes.

Course content

Discover what you'll learn, what you'll study, and how you'll be taught and assessed.

YEAR ONE

Compulsory modules develop the essential skills required to be a Marine Biologist and build a foundation of knowledge on the physical and biological environments. Two optional modules allow you to focus a little more on the subjects that interest you.

COMPULSORY MODULES

EVOLUTION (LIFE103)

Credits: 15 / Semester: semester 1

This module describes the evolutionary processes that have resulted in the generation of the diverse life forms that populate the planet.

This includes the theory of evolution by natural selection, and the genetic processes that result in gene evolution and diversity.

Selected scenarios and case studies will apply evolutionary concepts, showing the fundamental importance of evolution to a broad range of the life sciences.

The module is split into two parts: the first part (A) is the same for all students, the second part (B) contains a number of parallel strands tailored to students interest.

Students will be advised by their programme director which strand to follow.

The lectures will be supplemented with a variety of on-line resources.

Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by continuous assessments.

LABORATORY AND FIELD TECHNIQUES FOR ECOLOGISTS (ENVS171)

Credits: 15 / Semester: semester 2

This varied practical module will provide training in a range of ecological skills in a series of field exercises, either in person, or through online equivalent exercises, as necessary. You will experience a range of ecological environments and learn to develop identification and sampling skills for both terrestrial and marine animals and plants. The skills used will have a wide application to many fields of environmental science including biology, ecology and physical geography. You will learn quantitative skills in field ecology and use these to solve fundamental and applied problems. Assessments include a mix of MCQ tests and practical portfolios.

LIFE IN THE SEAS AND OCEANS (ENVS121)

Credits: 15 / Semester: semester 1

The seas and oceans cover 71% of the Earth's surface, with an average depth of 3.6 km and a volume of >1 billion cubic kilometres, the seas and oceans represent around 99% of planet Earth's living space. Around 50-80% of all life on Earth is found in the oceans, with an estimated 240,000 species. As we have only explored around 10% of the oceans, more species and ways of life are still being discovered.

This module is designed to deliver an introduction to the diversity of life in the marine environment. You will be introduced to the range of living organisms in the oceans from microscopic plants and bacteria to whales through a series of E-lectures. During a series of workshops and practicals you will have the opportunity to examine marine organisms in our award winning teaching facilities and explore some of the diverse adaptations marine organisms have adopted in order to meet the challenge of survival in the marine environment. Your knowledge and understanding will be assessed via open-book online tests, a group project and an individual project.

MARINE ECOSYSTEMS: DIVERSITY, PROCESSES AND THREATS (ENVS122)

Credits: 15 / Semester: semester 2

This module introduces the range of diversity of marine ecosystems using example environments from around the world. Each week a new ecosystem will be covered, with the main organisms, key processes and human threats to the ecosystem described and explored. Central to this module are interactive discussion sessions that will build an understanding of how marine ecosystems are expected to respond to the human-induced changes of the anthropocene.

QUANTITATIVE SKILLS FOR ECOLOGY AND MARINE BIOLOGY (ENVS128)

Credits: 15 / Semester: semester 1

This module will help students to develop the quantitative skills needed for ecology, marine biology and related subjects, including basic mathematics, statistics and computing.

It will be delivered via a series of lectures, practical classes and problem-solving sessions.

No mathematical knowledge above GCSE level will be assumed.

The module will be assessed through a combination of continuous assessment and a written exam.

STUDY SKILLS (ECOLOGY AND MARINE BIOLOGY) (ENVS104)

Credits: 15 / Semester: whole session

This module helps students of Ecology & Marine Biology to develop essential study skills, through a combination of tutorials, workshops, and field experience. Students will learn how to write scientific essays and posters, and how to give oral presentations. The university's academic integrity policy will be introduced. An academic advisor will help every student to adjust to the demands of university study. Students will be encouraged to think about their career, how they can obtain relevant skills and experience, and how to write an appropriate CV. It is recommended that students bring/purchase waterproof clothing and boots.

OPTIONAL MODULES

LIVING WITH ENVIRONMENTAL CHANGE (ENVS119)

Credits: 15 / Semester: semester 1

This module examines a number of global scale challenges facing humans on the planet earth related to climate and environmental change.

CLIMATE, ATMOSPHERE AND OCEANS (ENVS111)

Credits: 15 / Semester: semester 1

Climate, Atmosphere and Oceans provides an understanding of how the climate system operates. The module draws on basic scientific principles to understand how climate has evolved over the history of the planet and how the climate system is operating now. Attention is particularly paid to the structure and circulation of the atmosphere and ocean, and how they both interact. The course emphases acquiring mechanistic insight and drawing upon order of magnitude calculations. Students gain quantitative skills by completing a series of coursework exercises. Students address the Net Zero carbon goal via group work involving digital storytelling.

MOLECULES AND CELLS (LIFE101)

Credits: 15 / Semester: semester 1

This module describes the detailed composition of cells and the processes by which they obtain and generate energy, grow, replicate and eventually die.
The lectures will be supplemented with on-line resources and illustrated with some of the latest research methods that are used to study cell structure and function.
Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.
The module will be assessed by both continuous assessments and by a final examination.

ECOLOGY AND CONSERVATION (ENVS157)

Credits: 15 / Semester: semester 2

The zone of life on earth, or the 'biosphere', is a highly dynamic system responding to external pressures including changing human activities. The biosphere obeys a numbers of simple natural principles, but these often interact to create complex and sometimes unexpected responses. Using a wide range of examples we will explore these interactions between organisms and the environment. We will examine how species organise into communities, and how energy and other resources flow through ecosystems. We will explore how ecosystems respond to change, including gradual environmental shifts, sudden disturbance events and the effects of human activities. We will also learn how the key principles of ecology can be applied to conservation. We will assess the current state of the biosphere, and evaluate the major current threats. We will also look towards the future of ecosystems, including whether we can restore degraded habitats, and recreate "natural" landscapes.

MICROBIOLOGY (LIFE110)

Credits: 15 / Semester: semester 2

ECOLOGY AND THE GLOBAL ENVIRONMENT (LIFE120)

Credits: 15 / Semester: semester 2

This module will introduce students to the physical and chemical contexts of the biosphere, the cycling of important elements at different scales, the distribution of biomes and the ecosystem concept.

Ecological concepts such as succession, niche, food web theory and ecosystem stability will be introduced, and how these are impacted by human activities.

The module will also consider the conservation of biodiversity over a range of biological scales using UK and global case studies. The lectures will be supplemented with on-line resources.

Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by coursework, including online test.

Programme details and modules listed are illustrative only and subject to change.

YEAR TWO

Year two develops more specialist knowledge of Marine Biology, while allowing you to take a wide range of options in areas that interest you. You choose three optional modules.

COMPULSORY MODULES

STUDYING UK COASTAL MARINE BIODIVERSITY (ENVS241)

Credits: 15 / Semester: semester 1

This module is a fieldwork based module which will be co-taught with the Marine Biological Society of the UK in Devon prior to the start of semester one. The MBA is the UK's learned society for Marine Biologists and we are delighted that experts from the MBA will be teaching on this module. Students will learn about the diversity of coastal marine taxa sampled at sea, how you sample them and identify them, and research more detail on the species found. This will include information on their distribution, taxonomy, habitats and key features. Students will learn how to research and produce an accessible guide (as part of a team) that can be used by the public to learn about a whole group of common UK fauna, this forms part of the assessment. In addition students will sit an open book online examination covering the materials taught on the field course.

MARINE ECOLOGY FIELD STUDIES (ENVS278)

Credits: 15 / Semester: semester 2

This module introduces the ecology of coastal marine ecosystems and the techniques for studying them through staff-led field visits, seminars, laboratory practicals and computer analysis sessions. It will explore the diversity, occurrence, distribution and energy flow of the plant and animal communities in these ecosystems. We will also consider the morphological, physiological and behavioural adaptations of marine organisms to coastal environments. Students are introduced to key skills required for coastal ecology, including learning how to employ classic field techniques, making use of traditional, e.g. corers, and more modern, e.g. video surveying with a remote operated vehicle, equipment. Our focal study area will be the Mersey and Dee estuaries with their range of physical conditions and habitats.

MARINE ECOPHYSIOLOGY, ECOLOGY AND EXPLOITATION (ENVS251)

Credits: 15 / Semester: semester 2

The marine environment presents a particular set of challenges for the organisms which inhabit it and these conditions are constantly changing as a result of human interventions. This module will provide a solid grounding in a number of topics, concepts and issues in the marine environment relating to the physiology and ecology of marine organisms and how they are affected by the activities of humans. Module content will be delivered primarily through interactive lectures supported by computer-based practical exercises and assessed by examination (55%) and coursework (45%). Students will be guided to specific sections of textbooks, online resources and scientific papers to shape their learning.

RESEARCH AND CAREER SKILLS (ENVS204)

Credits: 15 / Semester: whole session

This module aims to develop the specific skills required by marine biologists, ocean scientists and environmental scientists as they prepare for their final year of study and the next steps in their careers.

In semester one, students will focus on developing skills in critiquing and reading the scientific literature. Lectures, workshops and tutorials will guide students in developing these skills. This will be assessed through a literature review essay. In the second half of semester one students will be introduced to the process of scientific research through a series of lectures, workshops and tutorials, this will continue in semester two.

In semester two students will continue to learn about scientific research and how to write a research report. Students will analyse and synthesise a real scientific data set, create professional display items and write a research report in standard scientific format. This will be assessed through a written research report. Students will be supported through this via a series of lectures, workshops and tutorials.

Students will also develop knowledge of careers in their field and enhance their employability through a series of lectures, SOES careers week, an assessment centre exercise and job video interview. The video interview will be assessed.

STATISTICS FOR ENVIRONMENTAL SCIENTISTS (ENVS222)

Credits: 15 / Semester: semester 1

This module provides training in statistics for environmental scientists. We provide training in industry-standard software – R and RStudio – to allow students to explore, present, and analyse data, and we ensure that the practical training is fully supported by explanations of the underlying theory. The practical work is focused on real environmental data, often generated by the students themselves so that they understand where the data have come from and have access to the full context as they learn how to describe and explain the findings of their analyses. Students will leave with the tools to collect, work with, and present data necessary for scientific writing.

OPTIONAL MODULES

ANIMAL BEHAVIOUR (LIFE211)

Credits: 15 / Semester: semester 1

This module provides an introduction to the fundamental evolutionary principles that explain a wide range of animal behaviours. These include sexual selection and animal mating behaviours, the evolution of co-operative societies, as well as conflict and conflict resolution. The lectures will be supplemented with on-line resources. Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module. The module will be assessed by both continuous assessments and by a final examination.

COMPARATIVE ANIMAL PHYSIOLOGY (LIFE212)

Credits: 15 / Semester: semester 2

This module describes the physiological problems encountered by animals in their natural environments, and how these problems are overcome.

The setting is environmental, relating lifestyle and physiology to habitat and to the rigours of a potentially hostile environment.

The module will explain how the lifestyles of animals and the independence of animals from environmental disturbance are critically linked to the management of energy flow through their bodies. Physiological mechanisms will be described at all levels of organisation in relation to energetics, temperature, respiration, osmoregulation, and nitrogen excretion. Emphasis will be placed on differentiating the molecular, cellular and system levels of organisation and their integrated role in optimising animal-environmental interactions.

The module is taught through a mixture of asynchronous and synchronous sessions. The former consist of pre-recorded videos, the latter are interactive online sessions to promote student engagement and active learning. Students will also be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by Coursework

OCEANOGRAPHY, PLANKTON AND CLIMATE (ENVS245)

Credits: 15 / Semester: semester 1

The tiny plankton are the base of marine food chains and also affect the Earth's climate. If you want to understand how and where these organisms live in the ocean, you need to step out of your own experience as a terrestrial animal. In this module we will get you to think about how the viscosity and flow of water control the different sizes of plants and animals by determining how they can acquire light, nutrients and food. For instance, a copepod zooplankton needs to detect, grab and hold on to tiny food particles in what, to the copepod, feels like a very sticky fluid environment. For us it would be a little like trying to swim through thick honey and reaching out to grab a ping-pong ball. On much larger scales the physics of ocean circulation and mixing controls the distributions and diversity of different plankton species and the availability of the nutrients that they need. Plankton play a key role in Earth's climate, but this can depend on the plankton species. Plankton also respond to changes in Earth's climate, with important shifts in species distributions currently being caused by our warming climate. In this module we take you from the micron scales of the tiniest plankton up to the scale of the open ocean to illustrate the fundamental links between the ocean's physical and biogeochemical processes, plankton communities and Earth's climate.

MARINE POLLUTION (ENVS232)

Credits: 15 / Semester: semester 2

Marine systems are changing with globally increasing temperatures and increasing carbon dioxide concentrations in the atmosphere, which are affecting the chemistry, physics and ultimately biology of the marine systems at unprecedented rates. These changes are expected to accelerate in the coming decades. Localised anthropogenic stressors such as excess nutrients, plastic debris, trace metals (e.g. mercury, copper), marine heatwaves and/or other emerging contaminants are affecting our coastal and open ocean waters. This module focuses on the processes and recent scientific evidence about a range of marine pollution issues.

UNDERSTANDING MARINE AND TERRESTRIAL SPATIAL ECOLOGY USING GIS (ENVS255)

Credits: 15 / Semester: semester 2

This module explores the concepts and applications of Geographical Information Systems (GIS) to solve contemporary questions in spatial ecology. The module involves applied case studies and practical work designed to develop both an understanding of GIS principles and concepts, such as data acquisition, integration and spatial analyses, and its application to analyse and understand 2D and 3D spatial data.

EVOLUTIONARY BIOLOGY (LIFE213)

Credits: 15 / Semester: semester 1

This module seeks to explain how the process of natural selection underpins the origins of biodiversity.

The first part of the module will address the origins of phenotypic diversity, focussing on where heritable phenotypic variation comes from and how it shapes the evolutionary process within species (microevolution).

Having established a basic model for understanding how evolution works, the second part of the module will explain the link between microevolution and evolution above the species level (macroevolution), overviewing the major evolutionary transitions. At the end of the module, students will choose between two specialised short courses on either evolutionary ecology or molecular evolution.

The lectures will be supplemented with online resources. Students will be given guided reading, and regular formative assessment exercises that will enable students to evaluate their understanding of the module.

The module will be assessed by both continuous assessments (40%) and by a final examination (60%).

POPULATION AND COMMUNITY ECOLOGY (LIFE214)

Credits: 15 / Semester: semester 2

This module aims tointroduce students to the concepts and principles underlying the dynamicinteractions within populations and between species within communities. It willdraw upon examples taken from across the globe: pressures on fish stocks; useof natural predators for biological control processes; how mutualisticinteractions benefit communities, such as coral reefs and leguminous plants. Itwill also explore how knowledge and understanding of these species andcommunity interactions can help plan for ecological mitigation and restoration.The lectures will be supplemented with on-line resources. Students will begiven guided reading, and regular formative assessment exercises will enable stu dents to evaluatetheir understanding of the module. The module will be assessed by coursework.

Programme details and modules listed are illustrative only and subject to change.

YEAR THREE

The core compulsory modules focus on research skills and include your independent research project. A wide choice of specialist research-led modules from right across the University allows you to focus on the subjects which interest you the most. You choose four optional modules.

COMPULSORY MODULES

CONTEMPORARY ISSUES IN ECOLOGY AND MARINE BIOLOGY (ENVS301)

Credits: 15 / Semester: whole session

This module aims to develop a number of skills, attributes and experiences required by graduates in ecology and marine biology with a focus on careers, an appreciation of the current state of their field and an international perspective. This is achieved through a programme of interactive tutorials and associated activities, directed via the virtual learning environment. In doing so, students will engage with up to date reasearch and scientific communication in the fields of ecology, conservation, biodiversity and marine biology. To complement this, students will undertake a series of activities to boost their employability, tailored to their specific needs, to prepare students for life after graduation.

MARINE BIOLOGY HONOURS FIELD CLASS (ENVS303)

Credits: 15 / Semester: semester 1

This module aims to further develop students' experience of the variety of UK biota and the ability to carry out a research project, both achieved through group work on a field class. Working closely with a member of staff, small groups of students will conduct small-scale projects in the laboratory or field. Our hosts are FSC Millport, who provide an outstanding diversity of research opportunities in this historic location for marine biology. Assessed via a group presentation during the field class and a group report submitted later in Semester One, this module provides exceptional preparation for students' Honours year.

INDEPENDENT RESEARCH PROJECT (ENVS306)

Credits: 30 / Semester: whole session

This module consists of a two-semester dissertation research project, carried out individually by a student with supervision by a member of academic staff. Projects can be field-, laboratory- or desk-based studies on a predefined project and the student will learn about project design, data collection, analysis and interpretation of results.

OPTIONAL MODULES

SURVIVING THE MARINE ENVIRONMENT: ADAPTATION, BEHAVIOUR AND CONSERVATION (ENVS310)

Credits: 15 / Semester: semester 1

This module aims to foster a broad understanding of contemporary theory in behavioural ecology, evolutionary biology and ecophysiology, with special reference to the marine environment. We will consider processes that operate at scales from individuals to populations and consider implications of these processes for the conservation of marine species and ecosystems. This 15 credit module builds on knowledge acquired about techniques, theory and processes acquired in Year 1 (e.g. Marine Biology: Life in the Seas and Oceans & Marine Ecosystems: Diversity Processes & Threats) and Year 2 (e.g. Marine Ecophysiology, Ecology & Exploitation) and provides the opportunity to experience the integration of current research themes in marine biology.

COASTAL ENVIRONMENTS: SPATIAL AND TEMPORAL CHANGE (ENVS376)

Credits: 15 / Semester: semester 1

This module considers the evolution and response of coastal environments to marine and riverine processes and their variations in relation to past, present and future climate change. Attention is given to physical processes and inter-relationships acting along coastlines and coastal changes in response to sea level rise, variations in storms activity, wave climate and sediment supply. Consideration is also given to coastal management and climate change adaptation & mitigation measures. Topics will be investigated through a combination of lectures, field trips, and development of a project aimed at identifying optimum coastal protection schemes for real case studies.

MARINE PLANNING THEORY AND PRACTICE (ENVS341)

Credits: 15 / Semester: semester 1

Marine planning is a recent endeavour, taking shape internationally as a new approach to the management of the seas and oceans, in the interests of marine nature conservation and the sustainable use of the seas for shipping, energy, fishing, minerals extraction, tourism, etc. It is developing as a means of organising the use of national sea space in a growing number of countries around the world. This module provides an introduction to the theoretical and practical foundation in marine planning for students with interests in spatial planning or marine science and management. Assessment is by two assignments: presentation and essay.

INTEGRATIVE COMPARATIVE ANIMAL PHYSIOLOGY (LIFE339)

Credits: 15 / Semester: semester 1

This module will provide students with an insight into physiological mechanisms underpinning adaptations to potentially hostile environmental conditions such as anoxia, toxic sulphide, high hydrostatic pressure and extreme temperatures.

It will also explore the physiological mechanisms related to homeostasis and the evolution of air-breathing, terrestriality and endothermy.

The module will take an integrative approach, considering physiological mechanisms from molecules to cells, tissues, whole animals and the environment.

The module is taught through a mixture of pre-recorded short online lectures and synchronous online seminars and is assessed by coursework.

MARINE ECOLOGY: THEORY AND APPLICATIONS (ENVS383)

Credits: 15 / Semester: semester 2

This module develops the connections between ecological theory and management of marine communities and ecosystems. The theory will mainly focus on mathematical models of the dynamics of populations and communities, and will include practical work with software. The second half of the module aims to give a rounded overview of the current understanding of vulnerability of marine taxa to human activities and climate change, and enable students to evaluate consequences of loss of species on ecosystem structure and functioning, as well as on human wellbeing.

CURRENT TOPICS IN ANIMAL BEHAVIOUR (LIFE322)

Credits: 15 / Semester: semester 2

This module addresses contemporary topics in animal behaviour within an evolutionary framework. It combines current experimental and field research and links behaviour to other areas including ecology, neurobiology, comparative cognition and human evolution. The module is delivered through traditional lectures and a combination of guided and self-directed reading. The module is assessed by formal examination and continuous assessment.

GLOBAL CARBON CYCLE (ENVS335)

Credits: 15 / Semester: semester 2

Increasing amounts of carbon dioxide in the atmosphere are having a profound impact on our Earth system. This module will introduce students to the fundamental theory behind the global carbon cycle. It will evaluate how carbon is partitioned between the atmosphere, land and ocean in the contemporary and past system, why the ocean stores 50 times more carbon than the atmosphere and considers the impact of increasing carbon dioxide on the organisms living on land and in the ocean.

CONSERVATION BIOLOGY (LIFE326)

Credits: 15 / Semester: semester 1

This module uses research-led teaching to explore current thinking in conservation biology;

The module explores patterns of biodiversity and encourages students to critically evaluate the evidence supporting alternative explanations for the extinctions or demise of many animal and plant species;

It also enables students to critically evaluate different approaches to conserving biodiversity;

The module is taught via lectures and student led seminars, in the form of debates. To support independent learning, students will also be guided to sections of specific textbooks and expected to follow upreferences, primary and secondary sources, listed by staff.

Programme details and modules listed are illustrative only and subject to change.

HOW YOU'LL LEARN

Teaching strategies include a mix of lectures, tutorials, workshops, field classes, research vessel cruises, laboratory work, computer sessions, group projects and individual work under supervision. You will typically receive around 15 hours of formal teaching each week, as well as about 60 hours on residential field courses each year. You will study four modules per semester. A module might involve two one-hour lectures each week, and a laboratory or computer-based practical as well. Tutorials are an integral part of our approach, involving groups of 5-7 students meeting regularly with a member of academic staff to discuss study skills, careers, current research and topical issues.

As you progress through your degree, you are increasingly challenged to engage with current debates, to think critically and to study independently. You will do an 'Honours Project' throughout year three, which is a piece of independent research (field, lab or data analysis) on a topic of your choice, supervised by a member of academic staff. If you opt for the four-year integrated master's programmes, you will spend 50% of your final year on a 'master's project' working closely within a research group on an area which may well generate publishable results.

A number of the School's degree programmes involve laboratory and field work. The field work is carried out in various locations, ranging from inner city to coastal and mountainous environments. We consider applications from prospective students with disabilities on the same basis as all other students, and reasonable adjustments will be considered to address barriers to access.

HOW YOU'RE ASSESSED

Assessment methods are tailored to the specific needs of each module and are designed to reflect student progression from year to year. Authentic assessment is embedded in our programmes, ensuring that you are prepared for the types of problems encountered, and have the skills needed, in commercial, research and public sector jobs. Assessment methods include written exams, assessed essays, laboratory and computer practicals, field assignments including field notebooks, poster presentations, research reports, scientific papers, group work, and oral presentations. In your third year you will complete a dissertation selected from a range of topics. This is your opportunity to develop skills as an independent academic researcher, supported on a one-to-one basis by an expert in the field.

LIVERPOOL HALLMARKS

We have a distinctive approach to education, the Liverpool Curriculum Framework, which focuses on research-connected teaching, active learning, and authentic assessment to ensure our students graduate as digitally fluent and confident global citizens.

Careers and employability

We produce highly employable marine biologists, trained in industry-relevant skills and modern equipment and software, and who can apply their knowledge to a wide range of fields including conservation, aquaculture, pollution and environmental monitoring.

87% **OF STUDENTS ARE IN WORK AND/OR FURTHER STUDY 15 MONTHS AFTER GRADUATION.**

Graduate Outcomes, 2018-19.

Our graduates have a diverse range of careers in the following areas which include: the media, environmental consultancy, administration, academia, teaching, local and national government and international banking. Examples of recent graduate careers in the sector include: fisheries observers, surveyor, seabird research assistant, turtle conservation field leader, field assistant on mammal surveys, rangers and conducting environmental surveys for construction work. Many choose to continue their studies at master's or PhD level on topics such as fish assemblages in mangroves, marine ecosystem responses to climate change and carbon sequestration in soils.

RECENT EMPLOYERS

- Joint Nature Conservation Committee (JNCC)
- United Utilities
- Fairbanks Environmental
- Wildlife Sense
- Earth and Marine Environmental Consultants
- International Pole and Line Foundation

PREPARING YOU FOR FUTURE SUCCESS

At Liverpool, our goal is to support you to build your intellectual, social, and cultural capital so that you graduate as a socially-conscious global citizen who is prepared for future success. We achieve this by:

- Embedding employability within your curriculum, through the modules you take and the opportunities to gain real-world experience offered by many of our courses.
- Providing you with opportunities to gain experience and develop connections with people and organisations, including student and graduate employers as well as our global alumni.
- Providing you with the latest tools and skills to thrive in a competitive world, including access to Handshake, a platform which allows you to create your personalised job shortlist and apply with ease.
- Supporting you through our peer-to-peer led Careers Studio, where our career coaches provide you with tailored advice and support.

Fees and funding

Your tuition fees, funding your studies, and other costs to consider.

TUITION FEES

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support. Learn more about tuition fees, funding and student finance.

UK fees **Also applies to Channel Islands, Isle of Man and Republic of Ireland**	
Full-time place, per year	£9,250
Year in industry fee	£1,850
Year abroad fee	£1,385

International fees	
Full-time place, per year	£25,350

*Fees stated are for the **2023-24** academic year.*

ADDITIONAL COSTS

We understand that budgeting for your time at university is important, and we want to make sure you understand any course-related costs that are not covered by your tuition fee. This includes costs for a lab coat, geological field kit, and sustenance during compulsory field trips.

Find out more about the additional study costs that may apply to this course.

SCHOLARSHIPS AND BURSARIES

We offer a range of scholarships and bursaries to help cover tuition fees and help with living expenses while at university.

Scholarships and bursaries you can apply for from the United Kingdom

Select your country or region for more scholarships and bursaries.

Entry requirements

The qualifications and exam results you'll need to apply for this course.

Your qualification	**Requirements** About our typical entry requirements
A levels	ABB Applicants with the Extended Project Qualification (EPQ) are eligible for a reduction in grade requirements. For this course, the offer is **BBB** with **A** in the EPQ. You may automatically qualify for reduced entry requirements through our contextual offers scheme. If you don't meet the entry requirements, you may be able to complete a foundation year which would allow you to progress to this course. Available foundation years: • Biological Sciences (with a Foundation Year) leading to BSc (Hons) • Earth Sciences entry route leading to BSc (Hons) (4 year route including a Foundation Year at Carmel College)
GCSE	4/C in English and 4/C in Mathematics

Your qualification	**Requirements** About our typical entry requirements
Subject requirements	Biology and one other science (Mathematics, Further Mathematics, Economics, Physics, Chemistry, Geography, Geology, Environmental Science/Studies/Technology*, Applied Science (Double Award), Computer Science) at A level. *Not in combination with each other For applicants from England: For science A levels that include the separately graded practical endorsement, a "Pass" is required.
BTEC Level 3 National Extended Diploma	D*DD in a relevant subject. Relevant subjects considered include: Animal Management, Countryside Management, Applied Science, Marine Biology, and Ecology. If the BTEC you are taking is not listed here, please contact us to check its acceptability for this programme. Please note that BTEC Forensic Science pathway is not acceptable for this programme.
International Baccalaureate	33 including 6 at higher level Biology, plus another Science at Higher Level grade 5, no score less than 4.
Irish Leaving Certificate	H1, H2, H2, H2, H3, H3 including H2 or above in Biology and a second science
Scottish Higher/Advanced Higher	Not accepted without Advanced Highers at ABB including Biology and 1 other science.
Welsh Baccalaureate Advanced	Accepted at Grade B with AB at A levels including Biology and 1 other science.

Your qualification	Requirements About our typical entry requirements
Access	45 Level 3 credits in graded units,including 30 at Distinction and a further 15 with at least Merit. 15 Distinctions in Biology and one other science are typically required. Acceptable science subjects are Mathematics, Physics, Chemistry, Geography or Geology. GCSE Mathematics and English grade C/4 also required.
International qualifications	Select your country or region to view specific entry requirements. Many countries have a different education system to that of the UK, meaning your qualifications may not meet our entry requirements. Completing your Foundation Certificate, such as that offered by the University of Liverpool International College, means you're guaranteed a place on your chosen course.

ALTERNATIVE ENTRY REQUIREMENTS

- If your qualification isn't listed here, or you're taking a combination of qualifications, contact us for advice
- Applications from mature students are welcome.

THE ORIGINAL REDBRICK