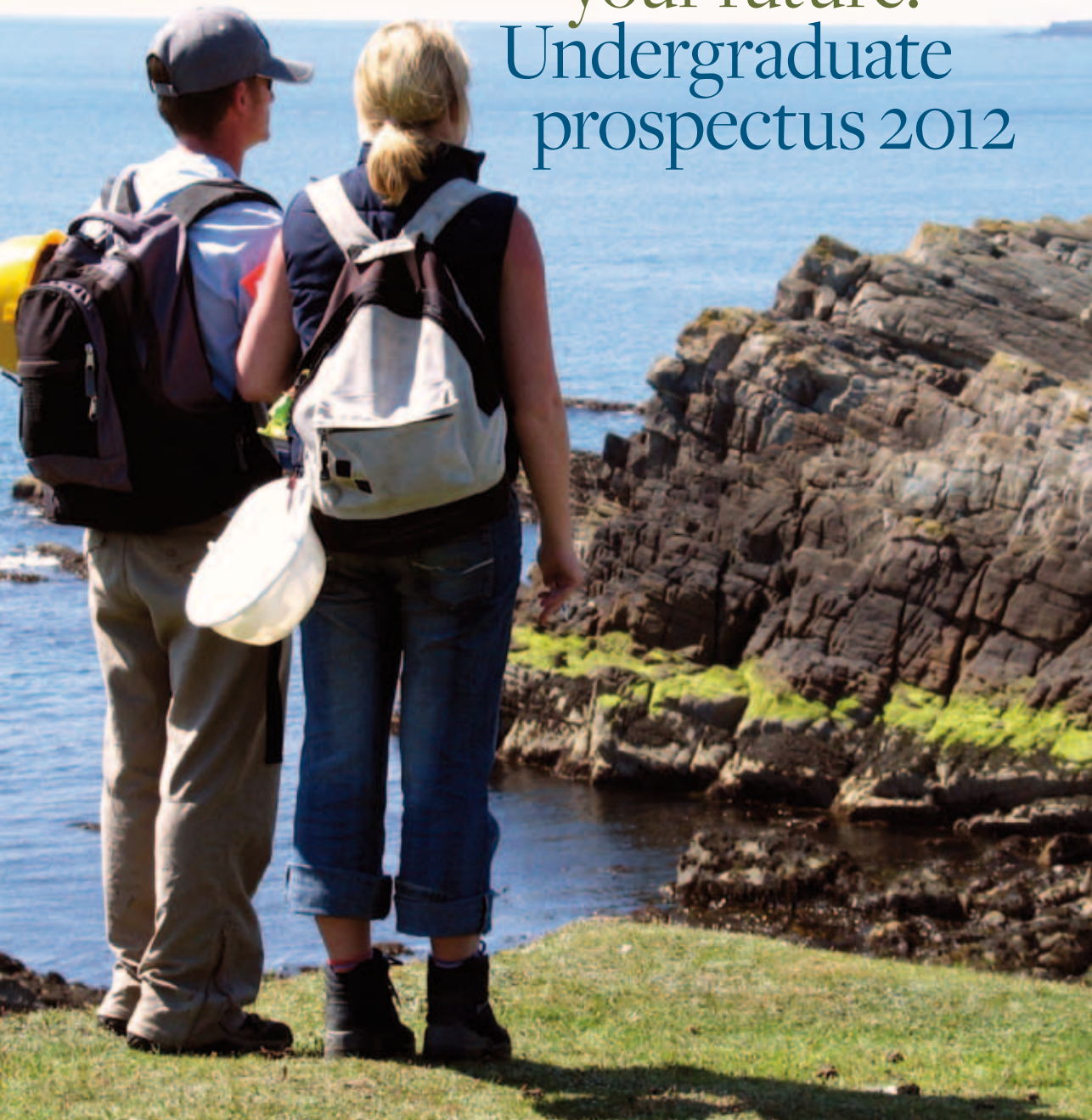


Ocean and Earth Science,
National Oceanography Centre
Southampton

UNIVERSITY OF
Southampton

One planet,
your future.
Undergraduate
prospectus 2012



Welcome to the Ocean and Earth Science prospectus



University applicants face important decisions about what course to take and where to study. The University of Southampton offers an excellent range of programmes in a supportive environment. We have all the advantages that go with a premier league university, including first-rate campus facilities and halls of residence. We also offer the unique advantage of our location within a major international research establishment, the National Oceanography Centre Southampton (NOCS).

Our professionally accredited degree programmes in Oceanography, Geology, Geophysics, Marine Biology and Ocean, Earth and Climate Science have secured the highest possible score for teaching quality in the last Quality Assurance Agency institutional audit, and among the highest scores in the UK for student satisfaction. Our ranking for research in the last Research Assessment Exercise (2008) puts us among the top institutions in the UK in the Earth and Environmental Sciences, with a high proportion of world-leading and internationally excellent academic staff. This means that students will be taught directly by staff who are personally pushing back the frontiers of scientific knowledge.

Our emphasis on field training provides a strong background in transferable and team working skills which are particularly sought after by employers. By following the research of world-class scientists working at the National Oceanography Centre Southampton, students can keep pace with developments at the forefront of our knowledge of the Earth.

Our international standing and unique location provides an excellent environment for our four-year Masters of Science programmes which offer a more in-depth approach to all our disciplines, with advanced training in research skills.

We are sure that you will find Southampton an excellent place to live, a friendly and intellectually stimulating place to work and very much look forward to welcoming you.

I hope that you will find the information in this brochure useful. For further information, please browse our web pages at www.southampton.ac.uk/oes

Professor Tim Minshull | Head of Ocean and Earth Science



1. Degree programmes in ocean and Earth science

Find out about our courses in Oceanography, Marine Biology, Geology and Geophysics. Page 6

2. Understanding the oceans

Investigating the physical, chemical and biological processes of the oceans and life within. Pages 8 and 12

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Geological investigations hold the key to many current global challenges. Page 16

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Learn how physical principles can be applied to study processes operating in, on and around our planet. Page 20

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Introduction

The University of Southampton has a well established reputation for offering outstanding degree programmes in ocean and Earth science.

We are known for our relaxed, friendly and informal atmosphere, which affords students a stimulating environment in which to learn and acquire essential scientific and key work skills.

Ocean and Earth science degree programmes are mostly taught at the prestigious National Oceanography Centre Southampton (NOCS), one of the world's leading centres for research and education in marine and Earth science. NOCS represents a partnership between the University and the Natural Environment Research Council's National Oceanography Centre. As well as conducting world-leading research, NOCS has strong links with a variety of businesses, including offshore industries (oil, gas and communications), environmental technology companies and government agencies, in the UK and overseas.

The Centre is comprehensively equipped with modern instrumentation and laboratory facilities and is also the operational base for the UK's fleet of deep sea research vessels and associated equipment such as Autosub, an autonomous underwater vehicle capable of diving to depths of six kilometres. NOCS also houses the UK's collection of ocean sediment cores, as well as the National Oceanographic Library, which has recently been refurbished.

We currently have more than 50 academic teaching staff (including 15 professors), and a strong technical and administrative support team working in the area of Ocean and Earth Science. It is our ability to offer innovative courses, delivered in a research-led environment by leading experts in the field, which characterises our degree programmes.

Around 180 undergraduate and 65 postgraduate taught students join us each year. There are also around 120 postgraduate research students from the UK and abroad who are actively engaged on a wide variety of research projects. The expanding number of academic staff, together with a manageable intake of students, means that we are an ideal size to promote the development of strong interaction between staff and individual students so vital for your intellectual success.

We offer excellent facilities for study, including purpose-built and fully equipped lecture and seminar rooms, and a wide variety of laboratories designed for the delivery of the practical component of our degree courses. There are also labs dedicated specifically to the undergraduate masters programmes, and a suite of common room, study and quiet rooms.

We run three research vessels: R.V. Callista - a 20m purpose built catamaran (launched in 2005), a 12m inshore launch (R.V. Bill Conway) and a 7.5m RIB for shallow estuarine work (Ocean Adventure), all moored at the waterside campus.

We also have extensive computing facilities with a large range of specialised software, and the University maintains two large undergraduate computer clusters at the National Oceanography Centre Southampton, which are a major student resource.

Our waterfront campus at the National Oceanography Centre Southampton.

Degree programmes

Our undergraduate programmes produce graduates well equipped to enter employment in a wide range of careers and professions.

There are several ways to study for a degree in ocean and Earth science. We offer a number of full-time programmes, including Bachelor of Science undergraduate degrees (BSc) and undergraduate Integrated Master of Science (MSci) degrees. There are also Foundation Year programmes for those without the appropriate A levels, which can lead to a BSc qualification in four years.

Our three year BSc programmes have been designed to give you a comprehensive and rigorous education in all aspects of your chosen discipline and are ideal if you want to enter work or embark on a specialist graduate masters course following graduation.

The four year masters option provides a more in-depth approach with advanced training in research skills, and is particularly suitable if you are seeking a research-orientated career in industry or academia.

Four of our undergraduate masters programmes include periods of study abroad during year three; top-performing students currently go to one of several elite American universities such as Pennsylvania State, the University of North Carolina, Wilmington, and the University of Washington. The four year Master of Oceanography with French involves studying at the University of Bordeaux in France in year three.

Induction

Starting out well at university is your key to future success. We will make every effort to make your transition to university life as smooth as possible.

Before your arrival, we will advise on how to choose your first modules and send you a booklist. At registration, you will meet your personal tutor(s) and receive the Undergraduate Student Guide which covers learning and study skills, assessment and safety

guidelines. You will also be welcomed by members of student-run societies including NOCSoc and the Geological Society (UoSGS). During your first week you will go on a fieldtrip in your subject area, receive an induction to the National Oceanographic Library and take part in health and safety training that will be applicable throughout the rest of your course.

Programme structure

Whichever programme you choose, you will study several core subjects during your first two years. These provide sound preparation for the final part of your degree. Then, in year three and year four you have the freedom and opportunity to choose from our specialised optional modules within ocean and Earth science and across the University. This allows you to build up a flexible study programme, tailored to your specific needs and interests.

Our modules cover a wide range of subjects; some are theory-based, others emphasise applied science in the contemporary world. Most include formal lectures and fieldwork with associated laboratory classes, which enable you to extend your scientific understanding by discussion and analysis with both lecturers and postgraduate students. All of our undergraduate masters programmes feature independent and group project work, which will involve you in high level quantitative investigations as well as advanced key skills training.

All final year students, regardless of degree, undertake a research or mapping project. You will be trained to make independent observations through fieldwork or laboratory research, using traditional skills or innovative instrumentation, to reach independent conclusions from your own results.



Collecting water samples on our research RIB, Ocean Adventure.

Oceanography

Oceanography is the science of exploration, offering insights into physical, chemical and biological processes throughout the marine environment.

The oceans cover more than 70 per cent of the Earth's surface and are fundamentally important as a source of food, energy, and minerals. They are a key controller of climate change including the greenhouse effect, global warming and sea level rise. Pollution of the seas is a key issue across the world.

To learn more about our planet, Oceanography programmes at Southampton span the biology, chemistry, geology, geophysics and physics of the marine domain. The practical applications of oceanography are diverse. It helps us in predicting storm surges and tsunamis, which threaten coastal regions.

Knowledge of the processes that control sediment movement is essential to manage beach erosion. Studying how air and seawater interact adds to our understanding of weather and climate and investigating the impact of ocean acidification on marine life will help us understand biological adaptation to climate change, but also how the chemistry of the ocean affects large scale biogeochemical processes. Oceanography demands a multidisciplinary approach. For example, the effective long-term management of fisheries needs an understanding of the chemical, biological and physical processes which influence the target species. The emerging field of geoengineering will help mitigate the effect of humans on the environment over the last 200 years. Geologists and chemists combine their skills to analyse data from marine sediments and corals which hold the key to understanding climate change.

Our programmes are accredited by the Institute of Marine Engineering, Science and Technology (IMarEST).

MSci Oceanography

UCAS code: F700

Duration: 4 years

If you are looking for a professional career in the marine sciences, then this is the programme for you. Over four years, you will gain an extensive and in-depth knowledge of contemporary oceanographic science, and develop a broad range of sophisticated laboratory and field skills and techniques.

Initially you will learn how the fundamental sciences making up the study of oceanography interact within the marine environment. Later, more emphasis is placed on focusing your knowledge of specialised subject-specific marine science. You will develop your practical skills in the laboratory and on board our research vessels. There is also a dedicated oceanography field course and research-orientated independent projects.

MSci Oceanography with French

UCAS code: F7R1

Duration: 4 years

If you are interested in both science and languages, this programme offers an ideal introduction to a career in Europe as it includes a year's study of oceanography at the University of Bordeaux. In preparation, the University's Language Centre has devised a language component especially for scientists which will comprise 25 per cent of your degree. We are happy to accept students with A level, AS level or GCSE French. You will study a common core of basic marine science, then you may choose to specialise in chemical, physical or geological aspects of oceanography or follow a broader general pathway that gives you a fully interdisciplinary approach to ocean science.

MSci Oceanography with Study Abroad

UCAS code: F702

Duration: 4 years

This degree programme provides the opportunity for excellent students to spend their third year of study at a top university abroad, most likely in the USA. You will follow the usual Master of Oceanography programme in your first and second years then go on to enrol at the overseas university to take an exciting variety of advanced modules during year three. The fourth year will see you back in Southampton and following the innovative, research-led programme of the Master of Oceanography, although opportunities for summer research collaboration with new colleagues abroad may certainly be explored.

Please note, places on this programme are strictly limited.

BSc Oceanography Single Honours

UCAS code: F710

Duration: 3 years

This programme will give you the knowledge and skills needed to embark on a scientific career applied to the sea. You will be able to choose from an exciting range of modules to create a study programme that matches your particular scientific aptitude and interest. Beyond a common core of basic marine science, you may decide to specialise either in chemical, physical or geological aspects of oceanography or to follow a broader general pathway that gives you a fully interdisciplinary approach to ocean science. You will develop the scientific knowledge and challenging skills required to fully understand marine processes from waves, tides and ocean currents, through sediment transport, the chemical composition of seawater to phytoplankton blooms, fisheries and marine mammals.

BSc Oceanography with Physical Geography

UCAS code: F7F8

Duration: 3 years

Studying the sciences of both the ocean and the land will give you the knowledge and skills needed to embark on a wide range of scientific careers. You can choose modules to create a programme that matches your particular scientific aptitude and interests. Beyond a common core of basic marine science and a structured choice of modules offered by Geography, you can pursue biological, chemical, physical or geological aspects of oceanography. This will give you the opportunity to acquire high-level scientific skills while learning about the diverse and complex phenomena that are found in the ocean and its interactions with processes on land. This provides an excellent background for further study or employment in Earth observation, environmental monitoring, and/or computer modelling.

BSc Ocean Chemistry

UCAS code: FF71

Duration: 3 years

Ocean chemistry ranges from the study of microscopic organisms through to global scale climate change, and it underpins our understanding of the ocean system. You will refine your chemical and numeracy skills in year one with modules in marine biogeochemistry taken at NOCS, and a choice of modules offered by Chemistry. You will then specialise in the area of biogeochemistry but still retain a broad base in interdisciplinary oceanography through theory and field based learning.

Your final year project will involve working independently along side world class researchers in an area of your choice. You will acquire a wide-ranging portfolio of skills to ensure your employability on graduation.

For further course and module information please visit www.southampton.ac.uk/oes/undergraduate/index.page

Student experience



Becky Hampshire | MSci Oceanography student

“Having always wanted to study something a bit different at university, which would give me the potential for a unique and exciting career, I decided that studying oceanography was the way to achieve this.

After extensive research and plenty of university open days, the only oceanography course that jumped out at me was at the University of Southampton. The main reason for this was the fact that the National Oceanography Centre Southampton (NOCS) is one of the world’s leading institutions for oceanographic research, with lectures given by scientists involved in new developments in understanding the oceans. For me this is one of the strengths of studying oceanography at the University of Southampton. Not only do you graduate with a degree from a highly accredited institution but in doing so you gain an extremely wide range of practical skills through extensive lab and boat work.

There are lots of opportunities to gain valuable work experience while studying at the University of Southampton. I was able to organise work experience with the FerryBox Project during the summer vacation. This involved assisting on a four-day cruise aboard the Pride of Bilbao collecting real-time salinity, temperature and fluorescence data in the Atlantic. I was able to put the theory I had learnt in lectures into practice, as well as improving my lab and research skills.

A specific area of interest to me is the development of our understanding of the effects of ocean acidification, and I would really like to find a career that involves undertaking new research in this area.”

Marine Biology

Marine biology embraces the study of all forms of life in the oceans, covering a broad range of topics, from hydrothermal vents to coastal lagoons.

To understand life underwater, it is essential to understand how plants, animals and other organisms interact with their environment – and respond to change. All our marine biology programmes combine the subject with related oceanographic sciences, to provide a complete understanding of the marine environment.

Marine biologists have made many exciting discoveries over the past few years. Through carrying out complex experimental programmes at sea, we have found hydrothermal vents and cold seeps. By researching at the molecular level, our knowledge of marine biodiversity has increased massively. We are also examining the scope for exploitation of our natural resources and the potential impact of climate and man on marine plants and animals. As a result, we believe if you are interested in marine biology, you need to expand your knowledge of biological sciences alongside your skills in chemistry, physics and mathematics.

Our marine biology degree pathways will develop your understanding in a progressive fashion, adding knowledge and practical skills over time so that by graduation you will have a suite of biological and oceanographic skills which will allow you to develop your career wherever in the world you wish to live.



A basking shark, photographed by University of Southampton graduate Alexander Mustard/www.amustard.com

MSci Marine Biology

UCAS code: F703

Duration: 4 years

The programme will give you a comprehensive understanding of the biology of marine organisms and their relationship with their environment.

Your first modules will introduce you to the animals and plants that live in the marine environment as well as developing an understanding of the physical and chemical oceanography of the sea. This will be followed by an intertidal field course. In your second year, modules will become more specialised, including the study of marine vertebrates, marine ecology and phytoplankton and primary production. This year will end with a marine biology/oceanography field course in Falmouth. Year three will extend your knowledge in zooplankton, marine ecophysiology, fisheries and aquaculture and marine molecular biology. In your fourth year, you will conduct an independent research project alongside modules in reproduction and larval development, deep sea ecology, marine modelling, tropical marine biology (currently run at the Bermuda Institute for Ocean Science) and contemporary topics in marine biology.

MSci Marine Biology with Study Abroad

UCAS code: F704

Duration: 4 years

This degree is a development of the very successful Master of Marine Biology programme and follows the same pathway in years one, two and four.

In your third year, you will have the opportunity to study at a top overseas university, currently the University of North Carolina (UNC), Wilmington or the University of Bergen, where you will take a variety of advanced modules over one or two semesters. You will then return to Southampton for your final year. Year four includes a variety of innovative research-led modules in reproduction and larval development, deep sea ecology,



“The multitude of skills I use for my job were all enhanced through my time at Southampton. There is no doubt that a degree from Southampton will aid any good student in furthering their career in marine science as far as they want to go.”

Lucy Wells graduated from the BSc Marine Biology course in 2006. She now works as a Reef Restoration Manager in the Turks and Caicos Islands, managing artificial reef projects put in place to salvage threatened corals in the area.

Read more at: www.southampton.ac.uk/oes/alumni/our_alumni.page

marine modelling and contemporary topics in marine biology. You will also undertake an independent research project, which will take up around a third of your time. You can choose from topics suggested by academic staff, develop your own ideas with guidance or potentially stay on and work at the overseas university during the summer of your third year.

Please note, places on this programme are strictly limited.

BSc Marine Biology with Oceanography

UCAS code: F7C1

Duration: 3 years

This programme examines the biology of marine organisms within their environments from intertidal coasts to deep-sea and hydrothermal vent systems. You will gain a detailed knowledge of the physics, chemistry and sedimentology within the oceans and how plants and animals have adapted to that environment. Aspects of the biology of marine organisms are covered, including pelagic and benthic ecology, physiology, reproduction and larval development and fisheries. During your first Easter vacation, you will start to develop practical field and boatwork skills on a seven day course based in Southampton. Just before the start of your second year, an intertidal marine ecology field course will improve your skills and introduce you to independent research. At the end of year two, you will take part in the interdisciplinary, boat-based field course currently run at Falmouth. The combination of theoretical knowledge and practical skills provides you with an excellent start to your career from a well regarded university.

Our Marine Biology programmes are accredited by the Institute of Marine Engineering, Science and Technology (IMarEST).

For further course and module information and for details of the current location of fieldtrips, please visit:

www.southampton.ac.uk/oes/undergraduate/index.page

Student experience



Rachel Boschen | MSci Marine Biology student

“Ocean and Earth Science’s close association with the National Oceanography Centre Southampton (NOCS) was a considerable attraction for me, as it gives access to all kinds of exciting and innovative research. The course is extremely varied, giving an excellent grounding in the marine environment before allowing specialisation in marine biology. Lectures combine classic marine science with new, often in-house, developments within the subject. The Waterfront Campus is perfectly located with access to the docks and University research vessels, which are frequently used in fieldwork allowing students to apply their knowledge.

The experience gained from my course has secured me internships abroad at the Marine Animal Rehabilitation Centre at the University of New England, Maine and at NOCS working with ChEss (Chemosynthetic Ecosystems Science). The University’s careers events and exhibitions have helped me expand my network of contacts within the marine field. I have also been involved with the Marine Life Talk Series at the National Oceanography Centre Southampton, both as a speaker and as organiser and host, which has allowed me to communicate my passion for the marine environment to the public.

There are also opportunities to be a scientific diver with NOCS-diving, which has been an excellent experience, developing my underwater surveying and marine species identification skills. The University offers some fantastic fieldtrips including shore ecology in Dale, oceanography in Falmouth and tropical marine ecology in Bermuda.

After I have finished my MSci, I would like to go on and do a PhD, preferably in deep sea research, maybe even staying on at University of Southampton!”

Geology

If you choose to study geology, you could soon be exploring for much-needed new economic resources or informing policy on global climate change.



The science of geology seeks to understand the complex and dynamic physical, chemical and biological processes on and within our planet. The better we understand the current systems, the better we will understand our planet's past, exploit its resources wisely, and be able to predict its future. Geology integrates many disciplines and could be the degree for you if you want to continue with a broad study of science.

Geology is now a very sophisticated discipline. There have been many new analytical and theoretical developments over the past years, often with direct practical applications. For example, the discovery, assessment and extraction of oil, gas and mineral reserves is dependent on the skills of the geologist. We harness remote sensing, field mapping, 3D seismic surveying, geochemistry, sedimentology and micropalaeontology, in addition to environmental impact studies and remediation.

Research into the hazards involved with earthquakes, tsunamis and volcanic eruptions, and in the areas of vulcanology, plate tectonics and coastal geology is improving our ability to predict and plan for such natural disasters. New equipment now allows marine geologists to map and sample the deepest parts of the world's oceans, to examine the deep ocean crust, understand hydrothermal systems, and to obtain long sequences of sediment from ocean drilling expeditions.

Geology has a critical role to play in understanding global climate change. By examining the Earth's response to periods of rapid climate change in the remote past, we can inform predictions of future changes to the climate, ocean currents and sea levels.

All of our Geology degree programmes are accredited by The Geological Society of London.

MSci Geology

UCAS code: F601

Duration: 4 years

If you are looking for a professional career in the Earth Sciences, this programme will provide you with a great breadth and depth of geological knowledge and a complete understanding of current research areas in geology. Particular emphasis is placed on research skills developed through extensive group and independent work. Interaction with scientists from the NOCS research community is embedded in the programme, ensuring a research-led experience. This degree programme has an excellent track record of securing geological employment for all those students seeking such positions upon graduation, and has received praise from several major geoscience companies. It also enables candidates to enter a PhD programme without either an initial MSc or MRes qualification.

MSci Geology with Study Abroad

UCAS code: F603

Duration: 4 years

This degree is a variation of our highly successful Master of Geology programme with the opportunity to spend time during your third year at a top US university, including Pennsylvania State, which has one of the powerhouse Earth Science departments in America. You will follow Southampton's MSci Geology programme in years one and two, then, following your five week independent mapping project during the summer vacation, you will enrol at the overseas university to study an exciting variety of advanced modules during year three. Your final year, back in Southampton, will again follow the innovative, research-led Master of Geology programme, but you may also carry out summer research collaborations with new colleagues from your overseas university.

Please note, places on this programme are strictly limited.

BSc Geology Single Honours

UCAS code: F600

Duration: 3 years

This programme has been specifically designed to give you a comprehensive training in all aspects of geology, providing an understanding of the nature, dynamics and evolution of the physical, chemical and biological processes operating on the Earth over the past four billion years. In the later stages, you can tailor your degree to your own requirements, by choosing specialist modules in particular areas. These can range from the applied aspects of mineral, petroleum and environmental geology to the frontier areas of marine geophysics, sediment dynamics, micropalaeontology, ocean margins, seafloor exploration and palaeoclimate change. We can help you to select the right modules to ensure you have the necessary background knowledge for a specific area of geological employment.

BSc Geology with Marine Biology

UCAS code: F6C1

Duration: 3 years

This programme has been designed to help you develop a thorough background in geology together with an understanding of the biology, evolution and ecology of the organisms most commonly found in the fossil record. This degree combination is unique to Southampton. There are two pathways through the marine biology part of the degree. The first covers whole organism biology, namely the marine vertebrates, marine invertebrates and their ecology; this is the choice for those interested in palaeobiology. The second option investigates the biology of the microorganisms that regulate the Earth system and in the past have been so abundant as to have formed huge thicknesses of sediments, such as chalk deposits. Understanding microfossils is important in palaeoceanography and palaeoclimatology; this pathway offers both taught modules and research project options in these fields where Southampton is a world leader.

All students attend both the marine biology and geology field courses. This degree will equip you for a scientific career in Earth system history, palaeoceanography or palaeoclimatology.

BSc Geology with Physical Geography

UCAS code: F6F8

Duration: 3 years

This programme has been designed to give you comprehensive training in all aspects of the physical world. You will develop an understanding of the nature and dynamics of the internal and surface processes operating on the Earth today and how these processes have evolved. The modules available will not only provide extensive coverage of all of the fundamental aspects of cutting edge geology, but also the ability to tailor your degree to your own requirements, by choosing to specialise in particular areas of both geology (75 per cent) and physical geography (25 per cent). Geological specialisations range from the applied aspects of resource and environmental geology to the frontier areas of sediment dynamics, seafloor exploration and the history of the oceans. An equally-wide choice is available to you in physical geography, with most students choosing to specialise in surface physical processes such as rivers, glaciers, coastal erosion and in such areas as Quaternary climatic change.

For further course and module information please visit www.southampton.ac.uk/oes/undergraduate/index.page

Student experience



Alex Coleman | MSci Geology

“When I visited Southampton on the University open day, I immediately liked the atmosphere as well as the green and open spaces of the Highfield Campus. I knew that as my course progressed I would also spend a lot of time at the National Oceanography Centre Southampton and I was impressed by the facilities and the location right next to the dock. The content of the geology courses offered particularly appealed to me because of the variety; although my main interest is palaeontology I wanted to learn about a broad range of topics before choosing a career specialism.

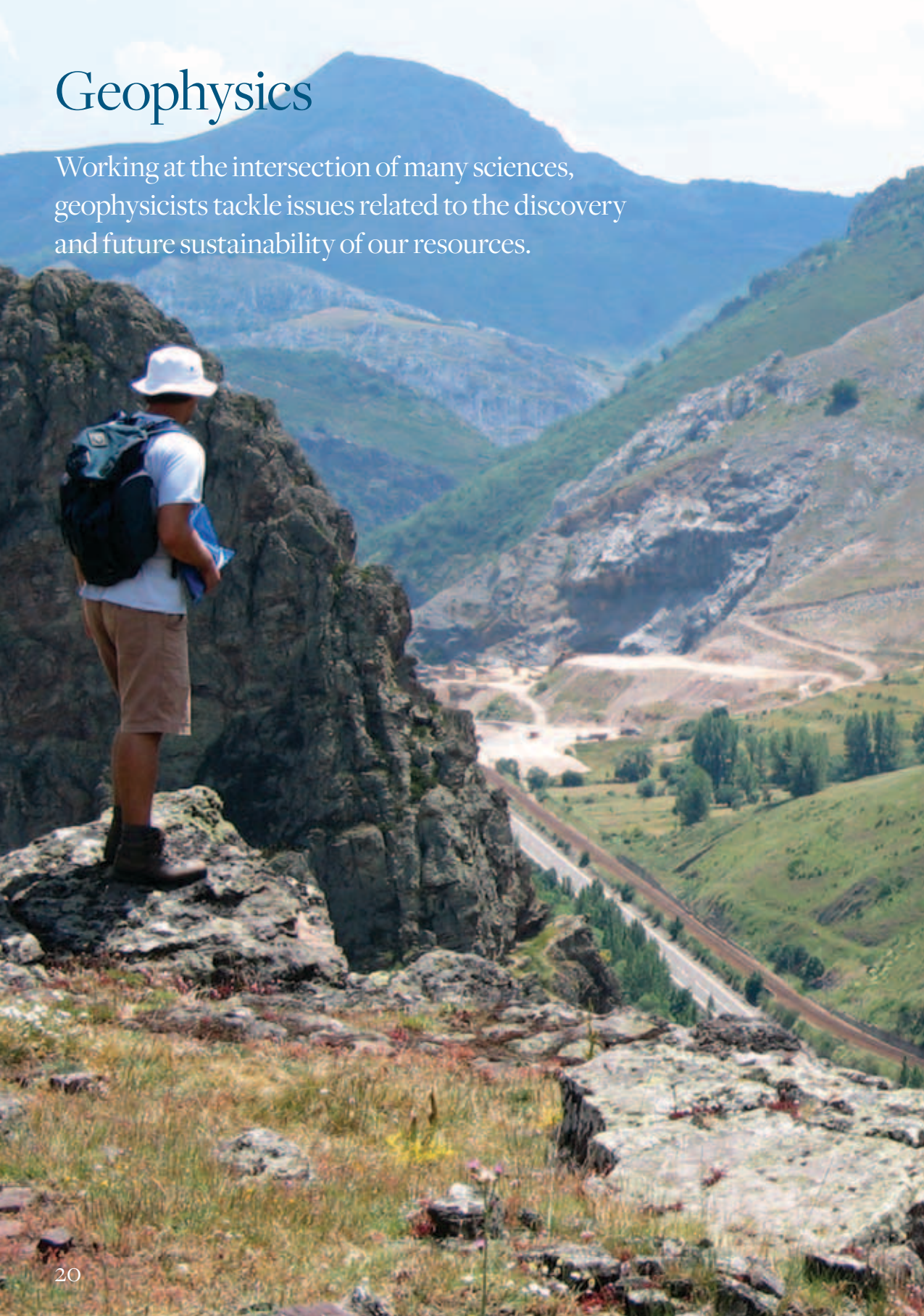
The lecturers I met at the open day were very friendly and enthusiastic about the subject, and as a student I’ve found them willing to put in time and effort to engage and challenge me. I have a really good rapport with my tutor, who has taken time to get to know all his tutees on an individual basis so we feel comfortable asking for support if we need it.

During the summer I’m doing two periods of paid work experience – one with Cambridge University’s Sedgwick Museum and CASP (Cambridge Arctic Shelf Programme), and one with engineering and development consultants Mott MacDonald. At the moment I’m working with the museum’s collection of fossil specimens and rock samples, helping to sort and catalogue them. It’s a great opportunity to apply the skills learned during lectures and practicals on fossil and facies identification. At Mott MacDonald’s I will be working in the Land Contamination Department looking at the geology/hydrology of land sites for building construction and land use zoning.

I feel I have really progressed in my first year at Southampton and I’m looking forward to the rest of the course. Next year I’m going on a number of field trips to develop more practical skills including stratigraphic logging, mapping, mineral and rock identification. I have already been to Tenby and Dorset, and this year we are going to Ingleton in Yorkshire and then to Spain during the Easter holidays. Next summer I will undertake a five week independent mapping project either abroad or in the UK. Although the trips train us to be field geologists they also are great fun, and give us a chance to get to know the other students and lecturers really well - maybe that’s why Geology is rated so highly as a subject in student satisfaction surveys!”

Geophysics

Working at the intersection of many sciences, geophysicists tackle issues related to the discovery and future sustainability of our resources.



Geophysics is all about how physical principles can be applied to study processes operating in, on and around our planet, such as motion within its core tectonic movements, dynamics of the oceans and atmosphere, and the interactions in space between the solar wind and the Earth's magnetic field.

At a practical level, engineers employ geophysical methods to explore below the Earth's surface in the search for oil, gas and other natural resources as well as for scientific investigation. Increasingly, geophysicists are involved in monitoring the environment and assessing natural hazards, whether globally or connected with specific engineering projects. A recent study from the British Geophysical Association identified this subject area as one with considerable employment potential for talented graduates.

At Southampton, geophysics is a wide ranging degree, with major components taught in Mathematics and Physics and Astronomy, as well as other options in Geography and Archaeology. Our academic staff have a broad range of research interests and teach several modules unique to Southampton, particularly involving hands-on experience with the acquisition and interpretation of marine geophysical data. You can choose to follow a curriculum focused on solid Earth processes, but can also develop your interests in areas such as ocean circulation and climate change.

The programme has strong links to industry, through a combination of summer placements, one year industry placements and the opportunity to undertake research work on real industry data in years three and four.

All of our Geophysics degree programmes are accredited by The Geological Society of London.

MSci Geophysics

UCAS code: F660

Duration: 4 years

If you are looking for a professional career in geophysics or quantitative Earth science, this is the programme for you. This four year degree will equip you with a broad knowledge of contemporary geophysics and a range of geophysical, geological and mathematical skills, including field skills and computer programming. These skills transfer readily into the world of work, and MSci Geophysics students have been very successful in finding summer placements and subsequent employment in the geophysical industry.

The final year of the degree has a strong emphasis on research skills and independent study skills through extensive project work and interaction with the wider research community at the National Oceanography Centre Southampton.

MSci Geophysics with Study Abroad

UCAS code: F661

Duration: 4 years

This programme could see you spending your third year at a top US university, including Pennsylvania State, at one of the powerhouse Earth science departments.

You will undertake the usual Master of Geophysics programme in years one and two, then following your summer geophysics field course, you will enrol at an overseas university to take an exciting variety of advanced modules. These take advantage of the different research specialisations at the US institutions, as you will be studying in a continent with a very different geological history to the UK. Your final year will be spent back in Southampton, following a slightly modified form of the Master of Geophysics year four. There may also be opportunities to explore summer research collaboration with new colleagues from your overseas university.

Please note, places on this programme are strictly limited.



“The great thing about studying at the National Oceanography Centre Southampton is its reputation; major companies know they can recruit high quality students here. After graduating I took up an internship with Rio Tinto Mining & Exploration Ltd, and was subsequently offered my first job, responsible for the geophysics on its West Africa diamond exploration programme.”

James Alderman graduated in 2005 from the Master of Geophysics course. He is now a geophysicist with Rio Tinto Mining & Exploration Ltd.

Read more at: www.southampton.ac.uk/oes/alumni/our_alumni.page

BSc Geophysical Sciences

UCAS code: F640

Duration: 3 years

This programme has been designed to provide comprehensive training in geophysics. The modular system will provide you with extensive knowledge of all of the fundamental aspects. You will have the opportunity to tailor your degree to your own requirements by choosing options in particular areas of the subject, ranging from sea floor exploration to tides and waves within the oceans, or studying the Earth from satellites, with further options available in maths, physics, and archaeology. You will gain experience working both independently and in groups to solve problems and carry out original research projects.

Geophysical computing and modelling can also be pursued to a high level using industry standard software.

A further option is to take a year working in industry between the second and third years of your programme.

For further course and module information please visit www.southampton.ac.uk/oes/undergraduate/index.page



An undergraduate student doing a gravity survey on the geophysics field course.

Student experience



Louise Moorhead | MSci Geophysics

“The University of Southampton is a great university at which to study, and in particular Ocean and Earth Science offers excellent teaching in world-class facilities at the National Oceanography Centre Southampton.

I was first attracted to the course because I was looking for a degree which combined the sciences and maths but also could be applied in a job after graduating. There is a wide variety of module choice, with the first two years spent learning the basis of geophysical principles, geology, maths and physics and then the opportunity to become more specialised with the options to be more palaeoclimate, marine geophysics or petroleum focused. There are also a variety of residential fieldtrips, including Wales, Brittany, and Tenerife, depending on module choices. This is a great chance to get to know other students and put into practice what is learnt in lectures. Depending on progress through first and second year exams there is the prospect of studying abroad in America for a year.

In my final year I have had the opportunity to be part of a team of five (two geophysicists and three geologists) representing the University in the Imperial Barrel Awards which is organised by the American Association of Petroleum Geologists (AAPG). We presented to an industry panel at the European Regional final in Prague where we were successful and then competed in the Global Final in Houston, USA, where we came second!

This has been a fantastic experience and been a worthwhile insight into prospect exploration, using data provided by an oil and gas company, to evaluate the potential of a specific region. We were able to apply what we had learnt in theory to work through the interpretation process that is used in industry. I know I would not have had this opportunity at any other universities in the UK as an undergraduate. Taking part in an international competition also provided the chance to network extensively with major players in the industry.

The staff at the University of Southampton are all helpful and approachable, there is excellent teaching and facilities. I have enjoyed every minute of my time at the University, and I would recommend studying here to anyone.”

Ocean, Earth and Climate Science

Understanding the processes that influence and control our climate systems will give you a broad education in Earth, ocean and environmental sciences.

Our planet is a complex and dynamic system. Gaining an appreciation of how it works is critical to our understanding of its environment and climate. At Southampton we are ideally positioned to capitalise on the research expertise of our internationally renowned scientific staff and to deliver the most up-to-date and topical programme of this type in the country.

This degree will give you detailed knowledge of the oceans, Earth and climate systems by examining the nature and dynamics of the interacting physical, chemical, geological and biological processes which have operated throughout our planet's lifetime of more than 4 billion years. Special emphasis is placed on understanding the processes which are operating right now. Our multidisciplinary programme employs the applied aspects of practical geology and oceanography, alongside the more mathematical areas of climate modelling and ecosystem dynamics.

MSci Ocean, Earth and Climate Science

UCAS code F790

Duration: 4 years

This multi-disciplinary degree programme has been designed to provide a broad and complete education in Earth and marine science, examining the way in which our planet functions as a system, to determine our environment and climate. You will gain a thorough understanding of the nature and dynamics of the interacting physical, chemical, geological and biological processes operating on the Earth throughout its history and right now. The programme covers all aspects of the Earth system including the oceans, atmosphere, ice, solid Earth and the biosphere.

You will develop a sound knowledge of this exciting and rapidly growing area of interdisciplinary science. However, in the later stages of your degree you may tailor your studies to your own interests, by choosing to specialise in some areas of the subject. In the final year you will undertake an independent research project which will provide you with an opportunity to explore your own interests with the support and guidance of a member of our academic staff.

Foundation Year programmes

Successful completion of the Foundation Year could earn you a place on one of our degree programmes.

A Foundation Year programme may suit you if you are studying for A levels in subjects different from those normally required for one of our degrees. It may also interest you if you are a mature applicant, with skills and experience from employment, or if you come from a part of the world where the education system is different from the British A level system.

We offer:

- Geology with Foundation Year (UCAS code: F602)
- Oceanography with Foundation Year (UCAS code: F701)
- Marine Biology with Foundation Year (UCAS code: F705)

You will largely spend your Foundation Year at Eastleigh College where you will be taught biology (five hours per week), chemistry (six hours per week) and maths (four hours per week). To enter the first year of an Honours Geology, Oceanography or Marine Biology degree, you will need to achieve at least 60 per cent in biology, chemistry and maths in your Foundation Year.

For further information please visit:

www.southampton.ac.uk/foundationyear/science

- Geophysics with Foundation Year (UCAS code: F662)

The Foundation Year is accredited by the Institution of Electrical Engineers. You will take courses in computing, electricity/electronics, maths, mechanical science and engineering principles. To enter the first year of an Honours Geophysical Science degree, you will need to achieve at least 70 per cent in your Foundation Year. For further information please visit: www.southampton.ac.uk/foundationyear/epg

Students registered on the Science Foundation Year are full-time members of the University of Southampton

student community with access to accommodation within halls of residence and full use of recreational, sports, library and IT facilities.

Entry requirements

Each application is considered individually, however, it is preferred if you have achieved at least grade C in English, Mathematics and Science at GCSE level or an equivalent qualification for overseas students.

Teaching and assessment

Foundation Year students are taught in small groups so that we can offer you a high level of learning support. Your full-time programme will be delivered through a combination of lectures, workshops, laboratories and private study. Assessment is mainly by unseen written examination (70 per cent) and by a variety of coursework assignments (30 per cent).

Next steps

Step 1

Contact us for more information.

Undergraduate programmes
t: +44 (0)23 8059 7755
e: ugafnes@southampton.ac.uk
www.southampton.ac.uk/oes/undergraduate/index.page

Foundation Year programmes
t: +44 (0)23 8059 3113
e: foundyr@soton.ac.uk
www.southampton.ac.uk/foundationyear/science

Step 2

Visit us:

You can look round informally on one of the University's Open Days in July and September - for dates and more information please visit: www.southampton.ac.uk/study/visitsopendays

Step 3

Choose your course:

Apply via UCAS
t: 0870 1122211
www.ucas.co.uk

When we receive your completed UCAS form, you will be contacted and invited to one of our Visit Days.

We interview all potential UK entrants as part of the selection process and include tours as part of the day.

Fieldwork

The development of skills in the field is a crucial component of our degrees, as well as being one of the most challenging and rewarding.



Some of the most exciting and valuable work you will undertake during your time at Southampton will take place on our residential and one day field courses. They allow you to develop observational and technical skills as well as increase your confidence to place theories discussed in lectures into their appropriate context. Several modules have elements of fieldwork directly attached, including shore and boatwork.

Oceanography

All branches of marine science rely on samples or measurements taken from the sea or estuaries, so fieldwork forms an important part of your degree.

Throughout your programme, you will gain experience of a wide range of modern surveying and sampling techniques. Residential field courses in years one and two working on our research vessels boost your boatwork and laboratory skills.

Marine Biology

All aspects of marine biology require the ability to identify organisms and sample the environment; a wide range of formal field coursework is built into our programmes. You will gain skills in inshore and offshore sampling and surveying techniques using our research vessels. All students attend two boat-based and one shore-based residential field courses and all

Master of Marine Biology students attend a ten day tropical marine course, currently based at the Bermuda Institute of Ocean Science. This introduces you to the essential elements of tropical marine biology and the ecological systems of coral reefs, mangroves and seagrass, providing the opportunity to develop your identification and sampling skills.

Geology

Fieldwork is an essential part of any geologist's training and is perhaps the most rewarding and enjoyable part of the degree. All field classes involve a variety of independent and teamwork exercises, designed to help you develop field, equipment-based and investigative skills. We are fortunate that Southampton has easy access to many areas of classic British geology such as the World Heritage Site of the Dorset coast, the dinosaur-rich Isle of Wight and southwest England. Many individual modules have associated one day field courses to local areas of geological interest. You will also have the opportunity to take part in a number of residential field courses dependent on which modules you choose to study. If you are registered for the three year Geology Single Honours or Geology masters degrees you will undertake an independent mapping project in the summer vacation at the end of your second year. This involves an advanced one week training class followed by the five week field

mapping project to make a large scale geological map of a selected area. In recent years, mapping destinations have included parts of Greece, Spain, France, Bulgaria, Scotland, Cyprus and South Africa. Students on other three year degree programmes may choose to do either a mapping or a research project, depending on their personal academic preferences.

Geophysics

Geophysicists need to be experienced in a wide range of data gathering and analytical techniques in the field, both on land and at sea.

During your degree you will gain experience in both geological and geophysical field studies. You may also take part in residential field courses during your first year to gain experience with geophysical surveys. Further training in the use of geophysical instrumentation will be gained during the summer of your second year, and you will be supported in devising and carrying out your own surveys.

Ocean, Earth and Climate Science

Selected elements of fieldwork from the Oceanography and Geology programmes are combined to provide you with a deeper appreciation of the processes involved, through the acquisition of key practical skills. Geological records preserve evidence for a tremendous range of conditions on the Earth, from eras of great

climatic stability to periods of change. Such records can tell us much about past ocean composition and ecosystems, and the extent to which our climate can change or recover from disruption, while the current state of the planet can be directly observed with a wide variety of techniques. Through this combination of fieldwork, our practical programme provides you with a unique opportunity to explore both present day and past environments.

Many compulsory costs associated with carrying out fieldwork as part of your degree programme are covered by the University, at no additional cost to you.

For further information please visit www.southampton.ac.uk/oes/undergraduate/core_costs.page

Scientific diving

The University of Southampton runs a professional scientific diving team, working within the Health and Safety Executive's Approved Code of Practice (ACoP), for science and archaeology. The team welcomes student divers with a range of experience and backgrounds and involves them in appropriate dives with a view to increasing their scientific capabilities underwater.

Work placements and exchanges

Industrial or academic placements and exchanges can help you secure an exciting career path.

Today's employment market is very competitive, and additional experience in the subject area of your degree can be especially important and help you to stand out when it comes to applying for jobs. We therefore encourage our students to undertake placements and internships, often overseas, within an industrial company or organisation, either over the summer vacation or through a year-long placement, in order to use their knowledge on real world projects.

Hands-on industrial experience will help you stand out from rival job applicants and may even lead to an offer of sponsorship during your final year and employment on graduation.

We encourage our students to take advantage of these opportunities, and our flexible courses are designed to allow such placements.

"Neflex is one of the largest recruiters of graduate geoscientists in the UK and the University of Southampton's geology degrees provide a sound training and suitable preparation for a career in industry. We value the quality of the independent project that is undertaken which builds on a solid base of skills learnt in the lecture room, laboratory and field."

Mike Simmons | Managing Director, Neflex



"Between my third and fourth years I was lucky enough to secure an internship with Neflex, a petroleum consultancy company. I worked as an assistant to the team in charge of the region incorporating Afghanistan, Armenia, Azerbaijan, Georgia, Iran, Pakistan and Turkey. I decided to take full advantage of my internship and devised a project in conjunction with the company for my fourth year Advanced Independent Research Project."

Tim Eatwell graduated in 2010 from the MSci Geology programme. He is now working as a geologist for Equinox in Saudi Arabia.

Read more at: www.southampton.ac.uk/oes/undergraduate/our_students.page

Over the last few years, students have completed summer placements with major companies such as Rio Tinto, Anglo American, BP and Shell, as well as many other organisations and smaller companies involved in the natural resources sector. Geophysics undergraduates can have a summer placement in their second or third years assessed, with the marks contributing to their degree. Informal arrangements have developed with the Canadian Institute of Ocean Science, Bedford which hosts up to six second year oceanography or marine biology students each summer, and the Bermuda Institute of Ocean Science which offers a full internship and summer course programme. Your tutor will help you to make contact with sponsoring companies.

Ocean and Earth Science students find summer placements with a number of organisations around the world.

One regular placement is at the Institute of Ocean Sciences on Vancouver Island in Canada:

"It is a credit to the UK educational system that all representatives from the University of Southampton have been brilliant, personable and diplomatic, and they have all fitted in well."

Terry Curren | Department of Fisheries and Oceans, Canada



"Over the last fifteen years the University of Southampton has provided a stream of highly skilled and talented graduates that have joined Rio Tinto Exploration and are now the leaders of our programmes worldwide. The success rate of Southampton graduates is unprecedented in our global graduate recruitment programme and so Rio Tinto has chosen to cement its already strong relationship with its support of the field programmes at the University."

Chris Welton Exploration Executive at Rio Tinto and a University of Southampton Geology graduate

Master of Geology graduate, Terhi Salo, drilling for minerals in Namibia.

Career prospects

Our graduates are highly sought after by a wide range of employers because we integrate skills-based learning into our degree programmes.

Your degree will include both academic and vocational elements. The University of Southampton prides itself on its robust research-led taught programmes, yet you will also learn many important work-related skills.

This means your qualification could be your passport to employment in many fields ranging from major multinational companies and government agencies involved with mineral, oil and gas exploration companies, conservation and environmental agencies, coastal management and geophysical survey companies, meteorology, geological service companies, local authorities, museums, water boards, civil engineering and construction companies, through to universities and allied research institutes.

Many of our graduates go on to pursue further qualifications at doctoral or research masters level in

fields such as environmental sciences, water quality management, environmental resource management, environmental coastal engineering, exploration geophysics, seismology, fisheries, marine pollution, remote sensing, hydrogeology, mining geology, mineral resources, engineering geology, basin analysis and hydrocarbon exploration.

Every year some of our graduates take a PGCE qualification and take their multidisciplinary degree knowledge into teaching.

As all our programmes incorporate training in important workplace skills such as numeracy, computing, communication, teamwork and problem solving, opportunities can open up in areas outside your specialisation, including such diverse careers as accountancy, management, marketing, retail and the armed services.



Recent career destinations

In oceanography and marine biology we have an excellent graduate employment record with research laboratories across the UK. In addition, recent graduates have secured posts across the marine sector.

- ABP Research
- English Nature
- BP
- Environment Agency
- Oil Spill Response Centre
- British Antarctic Survey
- Plymouth Marine Lab
- Gardline
- Loch Duart Salmon Farm
- Wildlife Trusts
- Science and Technology
- QinetiQ
- Institute of Marine Engineering
- Ceemaid Ltd
- SeaStar Survey
- British Maritime Technology
- Centre for Environment, Fisheries and Aquaculture
- SAMS
- Fugro Geos Limited
- Environmental Marine Unit (EMU)

In geology our students are very much in demand, with graduates entering different forms of employment in the hydrocarbon and mineral exploration industries, geological engineering, geological survey organisations, geophysical companies and a wide variety of environmental monitoring-related positions. Our graduates have also entered employment with museum services and geological conservation organisations. Over the past decade we have developed a record of graduates entering the mineral exploration industry that is the best in the whole of Europe.

- Shell
- Halcrow
- Resolve Geological
- Rio Tinto
- Nexen Inc.
- RAW
- Anglo American
- Gardline
- Coffey
- Neftex
- White Young Green
- Environmental Marine Unit (EMU)
- BG Group
- Mowlem Construction
- Natural History Museum
- Deloitte
- Capita Symonds
- IHS Group
- Fugro Geos Limited
- Core Lab
- Balfour Beatty
- Barrick
- Gaz de France Geoenvironmental
- Stratex
- Datalog
- Equinox Minerals Limited
- Senergy
- Integrated Geochemical Interpretation Limited
- Aureus Mining
- Citadel Resource Group
- Queensland Mining Corporation
- Bambuk Minerals Limited

In geophysics our students are similarly in great demand from both geophysical and environmental companies, applying their knowledge and skills in a wide range of industries, including oil and mineral exploration, offshore engineering, environmental studies and archaeology. Many of these positions have developed from internships with such companies, that see our students in both summer and year long placements.

- CGG-Veritas
- GSB Prospection
- Rio Tinto
- Fugro Geos Limited
- OHM Limited
- Environmental Marine Unit (EMU)
- Petroleum Geo-Services
- Gardline
- GX Technology



“The MSci Geology course at Southampton provided me with the perfect skills set for my current role in the minerals exploration industry. The balance between fieldwork, research and industry-related courses made Southampton the obvious choice. I use many of the skills that I picked up as a student every day whilst exploring for gold in Ethiopia and Djibouti.”

Ben Saunders graduated from an MSci Geology degree in 2009. He is now an exploration geologist for Stratex, working in Ethiopia.

Read more at: www.southampton.ac.uk/oes/undergraduate/our_students.page

Teaching excellence



We strive to provide excellence in all of our teaching and learning activities. The professional accreditation of our programmes by the Geological Society of London and the Institute of Marine Engineering, Science & Technology, acknowledges the high standard of our degree offer.

Ocean and Earth Science was awarded the highest possible score for teaching quality in the last Quality Assurance Agency institutional audit (2008) and we consistently secure amongst the highest scores in the UK for student satisfaction (National Student Survey).

The world leading research that is conducted by academics at the National Oceanography Centre Southampton, is fed directly into teaching – you will often be taught by scientists who are leaders in their field.

We employ a wide range of teaching methods including lectures, seminars and tutorials, practicals and fieldwork.

Lectures are used to pass on knowledge and enthusiasm for the subject and act as a springboard for individual study through directed reading lists.

Seminars and tutorials, in small groups of six to ten, cover basic study and organisational skills, introduce general themes and provide a key forum for developing confidence as well as written and verbal communication skills. These sessions are also used for in-depth discussions of matters arising from lectures as well as more general issues.

Learning statistical, laboratory and computational techniques forms an important component of the

undergraduate programme. You will be able to perfect your skills in word processing, spreadsheet and data analysis and computer graphics.

Laboratory sessions introduce students to scientific skills which will be vital to your career development. Residential and one day fieldwork, both in the UK and overseas, is undertaken by all our students.

Assessment methods

Learning is assessed continuously through a wide range of methods including essays, practical exercises, presentations, projects and fieldwork, as well as the conventional written examinations at the end of each semester. We believe your final year performance will best reflect your ability and potential; your major research or mapping project will represent a significant component of your final degree classification marks.

Feedback systems

We will normally return your coursework and examination marks within three weeks of submission, together with any relevant constructive criticism. In this way, we aim to improve your performance continually during your time with us.

Each module is subject to student evaluation on an annual basis. Our student community can also provide input to staff about teaching through elected representatives on the Staff-Student Liaison Committee. Matters raised by the committee are reported back to the Academic Unit Board for further action. Alongside our teaching quality and pastoral support systems, this helps us to address swiftly any areas of concern.

Our research is addressing some of the most challenging scientific questions and pressing societal needs of our age.

Research at the National Oceanography Centre Southampton is focused around specific research themes. Most degree pathways allow students to become involved in independent or group project work with staff from any of these areas.

Geochemistry

We apply geochemical analysis and modelling to questions of major societal, economic and environmental importance. Our research is divided into two linked themes: quantifying geochemical exchanges between Earth's oceans, mantle, solid crust, sedimentary blankets, atmosphere and life, and their changes through history; societal geochemistry examines how can we quantify, forecast, and mitigate effects of climate change, pollution, global consumption and geohazards to human health, the environment, and the sustainable use of natural resources.

Marine Ecosystems

Ecosystems research involves all aspects of ecology from shallow coastal lagoons to the deep sea plains and hydrothermal vents, from the tropics to the poles. We have very active field research with most underpinned by molecular techniques. Our coastal researchers study animals and plants from coastal lagoons to seas 30-40m deep. In shallow coastal waters, we investigate the ecophysiology and immunology of marine animals. Moving into deeper water, our

ecophysiological research examines physiological and biochemical adaptations of nematodes. A major theme of the 'Marine Ecology' group is deep-sea ecology, including the taxonomy of a variety of groups including the foraminifera, amphipods and the echinoderms.

Geology and Geophysics

More than 50 staff and PhD students work in this area. Our research strengths include tectonics and dynamics of active plate boundaries and continental margins, deepwater sedimentation processes including mass wasting and associated geohazards, the role of fault system growth and evolution in crustal deformation and high-resolution geophysics, including geophysical maritime archaeology. We have world-class facilities for controlled source electromagnetic sounding; ocean bottom seismology, sea floor imagery and the analysis of cores and other samples.

Ocean Biogeochemistry

While the oceans dominate the hydrological cycle on our planet, and act as a major reservoir for organisms and elements, many aspects of how this part of the global system works are still poorly understood. Using interdisciplinary approaches, research in this area focuses on the linked physical, chemical and biological processes that drive the major elemental cycles (C, N, P) in the ocean, and how these relate to climate change, anthropogenic pressures and ecosystem responses.

Ocean Technology and Sensors

Research in this area centres around the development and application of innovative instruments, sensors, vehicles and systems for the measurement and management of the oceans. Our challenges are enormous, ensuring the accuracy of sensors and instruments immersed in some of the ocean's most hostile conditions. NOCS is uniquely positioned for this multidisciplinary research and draws together researchers from a number of departments at the University, as well as its own Science and Technology divisions.

Palaeoceanography and Palaeoclimate

Our goal is to understand past changes in the Earth system, an essential context for future climate prediction. Our global research plays major roles in important international palaeoceanographic coring programmes. Research strengths include variation in atmospheric CO₂ levels/ocean acidity, ocean circulation, global temperature, and continental ice volume (sea level) and high frequency climate change on seasonal through centennial scales.

Physical Oceanography

Physical oceanographers seek to understand, quantify and predict the physical character of the ocean, and the dynamic processes that control its circulation and mixing. Participating in a wide variety of oceanographic cruises, we use shipboard

instruments, moorings, floats and autonomous underwater vehicles to make in-situ measurements of key ocean processes. Of further vital importance are measurements that help us to accurately estimate air-sea exchanges of heat, momentum and gases throughout the World Ocean. Building on our expertise in ocean remote sensing, and with strong links to space agencies, we are exploring patterns of change and variability in satellite measurements of surface temperature, sea level and productivity. Aligned with this suite of observations, we develop and use a wide range of ocean and climate models to test new hypotheses, to predict climate change, and to explore the role of the ocean in the wider Earth system.

Coastal and Shelf Seas

Research in this area enhances our understanding of the character and evolution of the coastal zone through multidisciplinary scientific research and addresses key coastal issues both nationally and internationally. Fundamental processes are investigated through coordinated field and laboratory experimentation linked to numerical prediction. Key research includes mechanisms of sediment transport and behaviour, stability and evolution of salt marshes, intertidal mudflats and beaches and the behaviour of offshore sandbanks.

For more information about our research, please visit: www.southampton.ac.uk/oes/research/index.page

Southampton at a glance

A dynamic and forward thinking University situated in the heart of the south coast of England.

World class reputation

The University of Southampton is recognised globally for academic excellence. We are one of the top 100 universities in the world and a member of the prestigious Russell Group of research-intensive UK universities.

First class teaching and facilities

Undergraduate teaching across the University is informed by our cutting-edge research, and students benefit from world class facilities that make Southampton one of the best learning environments in the UK. With its excellent resources and expert academic staff, Ocean and Earth Science at the University of Southampton has received the highest possible score for teaching quality in the last Quality Assurance Agency institutional audit and consistently achieves high scores for student satisfaction in national assessment exercises.

Fantastic location

Southampton is just over one hour from central London and Heathrow Airport, and within easy reach of open countryside. It is one of the leading cultural and leisure destinations in the south of England, close to many places of interest. The city has excellent transport links across the UK and to mainland Europe.

Excellent accommodation

We can offer more than 5000 high quality rooms and flats in 20 halls of residence, tailored to your needs and at competitive prices. All first year students are guaranteed a room in halls, provided that certain conditions are met*. For international students, this guarantee applies throughout your degree programme.

*Please see our website for further details:
www.southampton.ac.uk/accommodation

A great social life

Our Students' Union features bars, restaurants, a nightclub, a 330-seat cinema and a regular campus market. It runs a varied programme of events, from live music and karaoke through to club nights and comedy. Our campuses also house internationally-acclaimed arts venues. The city of Southampton has a vibrant mix of bars, nightclubs, restaurants, cafés, cinemas, arts and sporting venues.

Visit www.SUSU.org for more information on the Student's Union.

Southampton city

Southampton is one of the UK's premier venues for sailing and watersports, with some of the best marina facilities on the south coast. An interesting mix of old and new, with superb shops, beautiful parks and gardens, Southampton is an ideal base for exploring the south coast, the New Forest and the Isle of Wight.

A cosmopolitan university

The University has more than 5,000 European Union and international students from 130 countries. We provide a range of support for international students, including a one-week welcome programme and a 'Meet and Greet' service from London Heathrow Airport at the start of the academic year. We are one of the few UK universities to offer accommodation to international students for the full duration of their studies.

Superb sports facilities

Our impressive sporting facilities include an £8.5million indoor sports complex, a six lane 25metre swimming pool, 160 fitness stations, an eight-court badminton sports hall and a 76 acre outdoor site with pitches for hockey and football, and floodlit tennis courts.

Visit www.sportrec.southampton.ac.uk for more information, including details of our sports bursary scheme.



International students

We currently have 5,000 EU and international students from more than 130 countries studying with us.

The University of Southampton welcomes international students and offers a warm, friendly and multicultural community in which to study. With a global reputation for excellence in research and teaching, we are part of a network of university partnerships stretching around the globe.

We run an induction programme for international students, which takes place in September before the beginning of the academic term. This provides an excellent opportunity for students to meet and socialise and to find out more about the University and their degree programme. The University and Southampton city have many vibrant communities from all over the world. Celebrations such as Chinese New Year and Divali bring together students, staff and local residents from across the city.

Further details about entry requirements for international students, including English language requirements and information about additional language courses offered by the University, can be found at www.southampton.ac.uk/oes/international/index.page

The University's International Office can assist you with any queries before you apply and during your studies. Staff from the International Office can also provide you with details of forthcoming exhibitions that they will be attending in your country. For further details, please go to: www.southampton.ac.uk/international

Before you apply

International enquiries:

Email: global@southampton.ac.uk

Tel: +44 (0)23 8059 9699

EU enquiries:

Email: ugafnes@southampton.ac.uk

Tel: +44 (0)23 8059 7755

After you apply

All enquiries:

Email: ugafnes@southampton.ac.uk

Tel: +44 (0)23 8059 7755

Applications and offers

We make the application process as smooth and efficient as possible; our admissions tutors are always on hand to help.

If you are interested in studying at the University of Southampton you must apply through UCAS (www.ucas.com). We welcome candidates from diverse backgrounds and accept a wide variety of alternatives to A levels for entry to our degree programmes, including Scottish Advanced Highers, the Irish Leaving Certificate and various Baccalaureate programmes.

We will consider your application as soon as possible after it arrives at the University. In selecting applicants, we use the information provided on your UCAS form to determine whether you have the potential to flourish while studying with us.

We are always pleased to consider applicants with non-traditional backgrounds who do not fulfil our normal entry requirements. Applications from mature students (people who are over 21) are particularly welcome. Our experience is that such students have much to contribute to Ocean and Earth Science. You will not usually need to meet the normal entry requirement, but we usually expect evidence of commitment in the form of recent relevant study (for example, one or two A level courses, an Open University foundation course or an appropriate Access course would be acceptable).

In most cases applicants will be invited to visit the University for interview, an integral part of the admissions process, prior to a formal offer being made. However, because of the large number of people applying to some of our degree programmes, it may not be possible to offer later applicants this opportunity.

Our standard A level offers are summarised in the table opposite. While these are useful as a guide, we try to be flexible in our approach to making offers. Please get in touch if you are unsure about our entry criteria and we will be happy to provide advice in advance of your application.

Contact us

www.southampton.ac.uk/oes
Email: ugafnes@southampton.ac.uk
Tel: +44 (0) 23 8059 7755

Deferred entry

You may choose to defer entry to obtain industrial work experience, work overseas, travel or simply to earn some money, and we are happy to accommodate these requests. You should still apply for a place at university during your final year in school or college and indicate that you wish to defer entry on your application form. It is often possible to defer at a later stage, but please let us know as early as possible.

UCAS code and degree title	Typical offer grades
F601 MSci Geology	AAB grade A levels or equivalent, the A grades to be from two of the following: biology, chemistry, geology, maths or physics
F603 MSci Geology (with Study Abroad)	AAA grade A levels or equivalent from the following: biology, chemistry, geology, maths or physics
F600 BSc Geology Single Honours	ABB grade A levels or equivalent, to include two from biology, chemistry, geology, geography, maths, environmental studies or physics
F6C1 BSc Geology with Marine Biology	ABB grade A levels or equivalent, to include biology (grade A) and at least one from chemistry, geology, maths, environmental studies or physics
F6F8 BSc Geology with Physical Geography	ABB grade A levels or equivalent, to include geography (grade A) and at least one from biology, chemistry, geology, maths, environmental studies or physics
F660 MSci Geophysics	AAB grade A levels or equivalent, to include maths and physics, one of which must be an A grade
F661 MSci Geophysics (with Study Abroad)	AAA grade A levels or equivalent to include maths and physics and one from further maths, biology, chemistry or geology
F640 BSc Geophysical Sciences	ABB grade A levels or equivalent, to include maths and physics.
F790 MSci Ocean, Earth and Climate Science	AAB grade A levels or equivalent, to include maths and at least one other from physics, chemistry, biology or geology.
F700 MSci Oceanography	AAB grade A levels or equivalent, to include at least two from biology, chemistry, geology, maths, environmental studies or physics
F702 MSci Oceanography (with Study Abroad)	AAA grade A levels or equivalent from biology, chemistry, geology, maths or physics
F7R1 MSci Oceanography with French	ABB grade A levels or equivalent to include two from biology, chemistry, geology, maths, environmental studies or physics. A-level French is preferred but at least grade A GCSE (or equivalent) French is required.
F710 BSc Oceanography Single Honours	ABB grade A levels or equivalent, to include at least two from biology, chemistry, geology, maths, environmental studies or physics
F7F8 BSc Oceanography with Physical Geography	ABB grade A levels or equivalent, to include geography and at least one from biology, chemistry, geology, maths, environmental studies or physics
FF71 BSc Ocean Chemistry	ABB grade A levels or equivalent, to include chemistry and at least one from biology, geology, maths, environmental studies or physics
F703 MSci Marine Biology	AAB grade A levels or equivalent from biology (A grade required) and any two from chemistry, geology, maths, environmental studies or physics. Geography may be accepted as the third subject if supported by an extended project or 'core science' subject at AS B grade
F704 MSci Marine Biology (with Study Abroad)	AAA grade A levels or equivalent from biology (required), physics, chemistry, geology or maths
F7C1 BSc Marine Biology and Oceanography	ABB grade A levels or equivalent. Biology (A grade required) and one from chemistry, geology, maths, environmental studies or physics
F602 Geology with Foundation Year	A Foundation Year programme may suit you if you are studying for A levels in subjects different from those normally required for our degrees. It may also interest you if you are a mature applicant, with skills and experience from employment, or if you come from a part of the world where the education system is different from the British A level system. For further details see: www.southampton.ac.uk/foundationyear/science or www.southampton.ac.uk/foundationyear/epg (Geophysics)
F701 Oceanography with Foundation Year	
F662 Geophysics with Foundation Year	
F705 Marine Biology with Foundation Year	

Maths, biology, physics, geology and chemistry are accepted as core A level science subjects for our degree pathways. We do not accept psychology as a science subject; geography and environmental sciences/studies are only accepted for specific programmes.

Please note that the entry information above is accurate at the time of going to print. You are advised to consult our website for full and up-to-date details of subjects and grades considered for degree entry, together with some alternative qualification equivalence information. www.southampton.ac.uk/soes/undergraduate/courses.page

Fees and funding

The standard tuition fee for full time UK students studying at Southampton is £9,000 at the time of going to print. For the most up to date information, please visit www.southampton.ac.uk/study/feesandfunding

In order to ensure that we continue to attract the most talented, ambitious students to study with us, regardless of their financial circumstances, we have introduced a competitive package of provisions to cover many compulsory costs associated with your degree, in the areas of field work, equipment, text books, and printing costs relating to assignments.

For full details of the compulsory course costs included in your tuition please visit: www.southampton.ac.uk/oes/undergraduate/fees_and_funding.page

We also offer a £300 annual credit to all our undergraduate students, to spend on sports, the arts, public transport and a host of other services. This is unique in the UK.

Scholarships and bursaries

Ocean and Earth Science students can benefit from a variety of scholarships, prizes and opportunities made possible by the generosity of alumni, friends and industry.

Examples of awards available to our students include support from Rio Tinto for students on the independent mapping project in Geology, the Brian Sedgwick Oversby Endowed Fund to support the best student in independent mapping and to encourage igneous/metamorphic mapping, and the Robin Saunders Endowed Memorial Fund which provides up to four annual bursaries for mature and financially disadvantaged geology students.

Scholarships will be awarded based on academic achievement, both on entry to degree programmes and on progression through the degree.

Entry level scholarships

Up to ten scholarships worth £500 will be awarded to entrants to Ocean and Earth Science degree programmes, based on A level (excluding General Studies) or equivalent performance.

Scholarships on entry are available only to those students and who make Southampton their first choice in the UCAS process. Scholarships must be repaid if students do not complete the academic year in which they are awarded. Scholarships will be paid each year in January.

Scholarships on progression

Scholarships worth £500 will be awarded to students who achieve an aggregate of at least 90 per cent in the Engineering Foundation Year or the Science Foundation Year and who progress onto an Ocean and Earth Science degree.

Scholarships worth £500 will be awarded to the students with the ten best aggregate marks for the year across all the degree programmes in Ocean and Earth Science at the end of years one and two.

Scholarships worth £1000 will be awarded to the students with the ten best aggregate marks at the end of year three who are continuing into the fourth year of one of our MSci programmes.

Further information and a full list prizes and scholarships can be found at: www.southampton.ac.uk/oes/undergraduate/fees_and_funding.page



Tending to an experiment in the research aquarium at the National Oceanography Centre Southampton

How to find us



Ocean and Earth Science
National Oceanography Centre,
Southampton
University of Southampton
Waterfront Campus
European Way
Southampton
SO14 3ZH

By air

Southampton International Airport is adjacent to Southampton Airport Parkway railway station where the Uni-link bus service U1 and U4 runs via Highfield Campus to the National Oceanography Centre, Southampton. There is a full UK domestic service, as well as flights to mainland Europe and the Channel Islands.

By train

Fast services from London, Bournemouth/Weymouth, Portsmouth and Bristol/South Wales stop at Southampton Central Station. There are usually plenty of taxis at the station to take you to the NOCS, or the Uni-link bus service U1C leaves the station via the City Centre for the NOCS every 20 minutes.

By road

If using the M3 (from London, the North and the Midlands) leave at Junction 14 and onto the A33 into Southampton; from the West leave the M27 at Junction 3, onto the M271 and the A35/33 into Southampton; from the East leave the M27 at Junction 5 and onto the A335/A33 into Southampton. On all routes follow signs for the Waterfront and Dock Gate 4. Once through Dock Gate 4, take the second turning on the left into European Way and the NOCS entrance is 100 yards further along on the right-hand side.

Relevant web links are shown throughout the Ocean and Earth Science Undergraduate Prospectus. Please also consult www.southampton.ac.uk/oes online for further details and/or any changes which have appeared since first publication of the Ocean and Earth Science Undergraduate Prospectus. or phone +44 (0) 23 8059 7755 for more information.

Disclaimer

The University of Southampton will use all reasonable efforts to deliver advertised programmes and other services and facilities in accordance with the descriptions set out in its prospectuses, student handbooks, welcome guides and website. It will provide students with the tuition, learning support, services and facilities so described with reasonable care and skill.

The University, therefore, reserves the right if it considers it to be necessary to alter the timetable, location, content or method of delivery of events provided such alterations are reasonable.

Financial or other losses

The University will not be held liable for any direct or indirect financial or other losses or damage arising from changes made to the event timetable, location, content or method of delivery of various services and facilities set out herein.

Force majeure

The University will not be held liable for any loss, damage or expense resulting from any delay, variation or failure in the provision of services and facilities set out herein, arising from circumstances beyond the University's reasonable control, including (but not limited to) war or threat of war, riot, civil strife, terrorist activity, industrial dispute, natural or nuclear disaster, adverse weather conditions, interruption in power supplies or other services for any reason, fire, boycott and telecommunications failure.

In the event that such circumstances beyond the reasonable control of the University arise, it will use all reasonable endeavours to minimise disruption as far as it is practical to do so.

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This information can be made available, on request, in alternative formats such as electronic, large print, Braille or audio tape, and in some cases, other languages. Please call +44 (0)23 8059 7726 to request an alternative format.

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www.southampton.ac.uk/oes

UK and EU enquiries:

ugafnes@southampton.ac.uk

+44 (0) 23 8059 7755

International enquiries:

global@southampton.ac.uk

+44 (0) 23 8059 9699

