School of Earth and Ocean Sciences

Undergraduate Degree Programmes

www.cardiff.ac.uk/earth-ocean-sciences
The School of Earth and Ocean Sciences

92% of our graduates were in employment and/or further study six months after graduating.

Source: HESA Destination of Leavers Survey 2016/17

You will receive the highest quality teaching, delivered by lecturers at the cutting-edge of international research.

We own a research vessel, Guiding Light, which is used for field work in coastal mapping and hydrographic surveying.

“Cardiff has afforded me unbelievable opportunities and experiences.”

Jess Cartwright
“Studying Exploration and Resource at Cardiff University was a fantastic experience.”

Charlie Kirkwood

“The variety of modules allowed me to gain employment in different sectors of the marine industry.”

Kate McElligott

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Choose Cardiff

Studying for a degree is a major investment for your future and choosing your university and degree programme is one of life’s all-important decisions.
The School of Earth and Ocean Sciences excels in teaching and research, and provides a supportive and inspiring place to learn about the evolution of the Earth, its life and how it works.

Our graduates are highly regarded by employers and our courses are professionally-accredited. Our enthusiastic staff are approachable experts in their fields, who have a passion for teaching across the range of disciplines covered by our courses. Field classes, practicals, laboratory work and tutorials are all part of our innovative and stimulating research-informed learning experience. We work together with our students to ensure that their experience is the best we can offer.

As well as delivering excellence in teaching and learning, our staff engage in internationally recognised research that is tackling some of the most pressing issues facing humankind, ranging from climate change to exploration for natural resources.

We hope that you find this brochure helpful and informative as you consider your options as a potential university student. We have included information about the city of Cardiff and its beautiful surroundings (an outstanding natural laboratory for Earth and ocean sciences), the University, the practical and study facilities in the School, along with descriptions of our courses.

If you would like to receive further information about the School, or would like to arrange a visit, please do not hesitate to get in contact. Our telephone and email addresses are given inside the back page.

We look forward to hearing from you.

Professor Ian R. Hall
Head of School
Our degree programmes

Earth and ocean science education at Cardiff provides a research-led, holistic view of the Earth in which the oceans, atmosphere, biosphere and lithosphere are studied in depth as integral components of our Earth’s system.

Each of our degree programmes can offer you:

- a common first semester which provides a strong foundation in Earth and ocean sciences
- a grounding in all of the skills you will need in your chosen profession (e.g. environmental surveying, identifying geohazards, mapping training)
- flexibility to transfer between subjects or programmes up to the end of your first semester
- plenty of opportunities for field and practical work: we currently offer two overseas field trips on each programme with travel and accommodation costs currently covered by your tuition fees
- passionate staff who are enthusiastic about their subject
- opportunities to feedback and work with staff to make the student learning experience the best that it can be
- specialist careers support throughout your studies, to give you the best possible start to your working life.

F621
BSc Exploration and Resource Geology

A three-year degree for students interested in all aspects of natural resources (hydrocarbons, ore and industrial minerals and energy) and their exploration, extraction and management. This degree is also suited to students interested in aspects of applied geology and information technology.

F622
BSc Exploration and Resource Geology (with a placement)

A four-year degree for students interested in natural resources (hydrocarbons, ore and industrial minerals and energy) and their exploration, with time out in industry working with an exploration company. This degree is also suited to students interested in aspects of applied geology and information technology.

F623
MESci Exploration and Resource Geology

A four-year degree for students who wish to pursue a research career in hydrocarbons, ore and industrial minerals and energy. In year four, you will undertake an independent research project that focuses on your specialist subject of interest.
<table>
<thead>
<tr>
<th>Code</th>
<th>Programme</th>
<th>Description</th>
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<tbody>
<tr>
<td>F600</td>
<td>BSc Geology</td>
<td>A three-year degree for students interested in all aspects of geology and Earth evolution. This degree provides comprehensive training in field geology and map making. In year three, students can specialise in areas of sedimentology, palaeontology, structural or igneous geology.</td>
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<tr>
<td>F601</td>
<td>MESci Geology</td>
<td>A four-year degree for students who wish to pursue a research career in Earth sciences. In year four you will undertake an independent research project that allows you to focus on your subject of interest in Earth sciences.</td>
</tr>
<tr>
<td>F642</td>
<td>BSc Environmental Geoscience</td>
<td>A three-year degree for students interested in applied geoenvironmental or global geoenvironmental issues, including subjects such as geo-hazards, pollution and engineering geology, climate change and sea-level rise.</td>
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<tr>
<td>F644</td>
<td>BSc Environmental Geoscience (with a placement)</td>
<td>A four-year degree for students interested in applied geoenvironmental or global geoenvironmental issues, including subjects such as geo-hazards, pollution and engineering geology, climate change and sea-level rise, with time out working in the geoenvironmental industry.</td>
</tr>
<tr>
<td>F625</td>
<td>MESci Environmental Geoscience</td>
<td>A four-year degree for students who wish to pursue a career in applied or global geoenvironmental issues such as climate change, water resources and pollution. In year four you will undertake an independent research project that focuses on your subject of interest.</td>
</tr>
<tr>
<td>K32H</td>
<td>BSc Environmental Geography</td>
<td>A three-year degree for students interested in aspects of Earth systems and the natural environment. The programme provides a foundation in Earth science and progresses to include subjects such as pollution, water quality, ecology, geomorphology and landscape management.</td>
</tr>
<tr>
<td>Y32M</td>
<td>MESci Environmental Geography</td>
<td>A four-year degree for students interested in aspects of Earth systems and the natural environment. The programme provides a foundation in Earth science and progresses to include subjects such as pollution, water quality, ecology, geomorphology and landscape management. In year four you will undertake an independent research project that focuses on your subject of interest.</td>
</tr>
<tr>
<td>F841</td>
<td>BSc Marine Geography</td>
<td>A three-year degree for students interested in the study of the physical, biological, hydrographical and managerial issues relating to the ocean and its coastlines.</td>
</tr>
<tr>
<td>F842</td>
<td>BSc Marine Geography (with a placement)</td>
<td>A four-year degree for students interested in the study of the physical, biological, hydrographical and managerial issues relating to the ocean and its coastline, with time out working in a marine-related industry.</td>
</tr>
<tr>
<td>1D79</td>
<td>MESci Marine Geography</td>
<td>A four-year degree for students who wish to pursue a research career in aspects of shallow, near-shore coastal processes or marine-related managerial issues. In year four, students complete a research project on a marine topic of interest.</td>
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The first year

The first year is designed to give you a sound foundation in Earth and ocean sciences upon which the specialised modules in each programme build in subsequent years.
Many of our first year students haven’t been able to study geology or other Earth science subjects at school. This is why our first semester is common across most of our programmes.

During the first year, we will provide you with an introduction to the study of the Earth and oceans as a system and develop your scientific skills. General skills, such as observation, numeracy, presentation and communication are valuable throughout your studies and future careers, and will be included in your year one curriculum.

In the first few weeks all first years go on a number of introductory fieldtrips in South Wales. They’ll give you a flavour of what you will learn in the first year, a chance to settle into the pace of university life, and give you a chance to get to know other new students and staff.

Fieldwork in the first year is usually based around day or half-day trips as part of core modules, where you will learn essential field skills, such as using your compass and identifying geological processes in the landscape.

Depending on the programme, you may have the opportunity to undertake work at sea, or take part in a residential field excursion before the Easter break.

All the first year modules include lectures and a variety of laboratory work. Several include individual study projects. Some of the modules extend over the two semesters.

Most modules are assessed by a combination of examination and marking of other work. The nature and weighting of other assessed work varies with the requirements of different modules. You will need to achieve a satisfactory standard in the 120 credits studied before progressing to the second year.

We believe it is important to take account of the varying skills and qualifications of the students arriving in the School, so the broad-based first year complements your own talents and interests.

To ensure that all students have the necessary scientific knowledge for a degree in Earth and ocean sciences, key scientific skills are introduced at appropriate places within the main curriculum. Supplementary workshops are available for students who need extra support. Your personal tutor, allocated to you in the first week of your course, will advise you of the best way to organise your studies to utilise your background achievements.

Because the first semester is common to all our undergraduate degree programmes, you are able to transfer between them up to the start of the second semester in mid January.

Don’t just take our word for it . . .

During the first few weeks at Cardiff Uni, you will go on many field trips. These not only help to teach you about new techniques you will use throughout the three years and to give you an overview of the course, but they are also a great opportunity to meet new people. When you are dropped off on one of your first trips, you can’t help but make friends. Whilst all my flatmates were sat in lectures day after day, I was out exploring Cardiff and the surrounding area which was a great way to start the year. Also, not many people get to wear a hard hat and hi-vis jacket during their degree!

Philippa Smith
Year One, Environmental Geography
Choosing between a BSc or MESci

We offer Bachelor of Science (BSc) or MESci (Master of Earth Science) programmes with a variety of options, but which is right for you?

BSc
- A three-year degree programme (four years if you enrol on the industrial placement option)
- Lower entry requirements than the MESci
- Broad range of careers open to you in the Earth and ocean sciences, and many other areas such as business, communications or teaching
- Perfect for students who do not want to enter the research profession or prefer applied project work
- Opportunity to top-up your studies with our one-year vocational MSc in Applied Environmental Geology following your BSc.

MESci
- A four-year degree programme
- Higher entry requirements than the BSc
- Advanced courses and research skills provide an enhanced basis for entering into professional research careers in Earth and ocean sciences
- Give you more flexibility to choose topics and modules that match your interests
- Opportunity to work within our research groups
- More extensive opportunities for small group and individual tuition
- A higher level of education comparable with international first degree qualifications.

Transferring between programmes
Transfer from a BSc to an MESci is possible at the end of years one or two and requires an average mark of 60%. Transfer from MESci to the equivalent BSc can also take place at the end of years one and two. Transfer into and out of the MESci programmes is possible, but it is best to enrol on the MESci in year one if you meet the entry requirements, as there are dedicated research training tutorials in years one and two.
Environmental Geography
UCAS Code: K32H (BSc), Y32M (MESci)

Environmental Geography is the study of the relationship between humans and the natural environment.

It transcends the traditional Earth sciences because it considers the impact of human processes on natural systems, such as glacial or coastal environments, and includes aspects of social science. It will equip you with the understanding and tools to create solutions that address environmental issues arising from our relationship with the planet, such as climate change and pollution.

This new degree programme was established in 2016. It differs from Environmental Geoscience in that it focuses more on physical geography topics such as landscapes and geomorphology.

What will I study?
You will study the development of the planet and its landscapes, and the interactions and processes that have shaped them. You will focus on environmental problems that can arise from our relationship with the Earth and learn to develop sustainable solutions to them.

The course develops knowledge and understanding of the physical, biological, and chemical controls on the environment. We look at how the Earth functions, for example, how global climate is controlled, and how landscapes evolve. We investigate terrestrial and marine ecology. We also discuss human-generated issues such as pollution, including its causes, assessment, monitoring and clean up.

During the course, we also develop your fieldwork skills - much of this training is based outdoors. You will learn how to use geographical information systems (GIS), how to plan, execute and report on project work, and how to sample, collect and analyse data. You will also be trained in spatial mapping, topological work and geomorphology.

Through the programme, as your knowledge develops, you may be able to choose optional modules, allowing you to tailor the programme to your own interests and aspirations in the field. You will also be encouraged to devise your own topic for independent project work. Students often pick projects that relate to the environment close to their homes, but some choose projects that take them abroad to locations such as the Mediterranean, Africa or the USA.

Environmental Geography fieldwork
Fieldwork is crucial to developing your skills as an environmental geographer. Our location in South Wales is perfect for studying environmental geography, as we have easy access to a huge range of natural environments, with mountains to the north and the Severn tidal estuary in the south. Naturally, we will spend some time studying these varied landscapes and training you in essential fieldwork skills, such as map-reading, landscape identification and the use of a compass.

We also take our students on several residential fieldtrips. We currently explore the impacts of past glaciations on the environment of Snowdonia National Park and visit a modern glaciated landscape in the Alps. We will embark on a new fieldtrip to investigate hydrology and river systems in the south of France.

All of the travel and accommodation on our fieldtrips is currently already included in your tuition fees. We will only ask you for a small contribution towards food and drink for each trip.

Environmental Geography careers
Whilst no students have yet graduated with an Environmental Geography degree, those graduating with its precursor programme have been popular with employers such as local government, the Environment Agency, Airbus, construction and utility companies. If you wanted to work in the field of environmental geography, typical job titles would be environmental advisor, software analyst, environmental consultant, or pollution monitor. Many of our graduates also enter other professions, such as teaching, finance, or communications.
Geology
UCAS Code: F600 (BSc), F601 (MESc)

Geology is the study of Earth, the materials that it is made up of, the processes that affect it and the evolution of the life that inhabits it.

We look at the history of the Earth; processes such as volcanic eruptions; the Earth’s materials, such as minerals, metals, oil and water; the Earth’s structure; past climates.

The better we understand the Earth, the better we can estimate the impact of future events and processes, such as earthquakes, climate change or dwindling resources.

Our Geology degrees are accredited by the Geological Society.

What will I study?
This programme will provide you with a broad view of the physical, geochemical and biological processes that formed planet Earth, its oceans, atmosphere, lithosphere and biosphere. You will learn how to read the rocks, assess the processes involved in their formation, be able to reconstruct past environments and interpret how life evolved.

We’ll look at the Earth within our planetary system, how the Earth was formed, natural resources, and processes of change, such as plate tectonics. We will also look at how we can interpret past ecosystems through fossils. You will also be taught practical skills, such as geological mapping, using geographic information systems (GIS), and the techniques critical to acquiring, processing and interpreting geophysical data. As your skills develop, you will have the opportunity to tailor the programme to your interests through a variety of optional specialist modules.

A challenging element of this course is an independent five week geological mapping project, which will put your skills to the test. Our most popular mapping areas are typically in Wales, Scotland, Ireland, Southern France, Spain and Portugal, but some students choose to go further afield.

Geology careers
Studying geology can lead to some exciting graduate job opportunities. Our graduates work all over the world as geologists (in oil, exploration, engineering, or reservoirs), consultants, field mappers, mining software analysts, surveyors and mineralogists. Recent graduates have gained jobs with high-profile employers such as the British Geological Survey, the Environment Agency, Digirock, Hummingbird Resources and BHP Billiton. Geology is also an excellent subject to study if you decide to go into teaching, or other professions, due to the transferable skills taught on our programmes.

We currently visit classic localities in Pembrokeshire, Arran, southwest England, Cyprus and Spain, where you will learn to record observations, analyse and interpret a wide range of rocks and structures in the field, and be trained in making a geological map. In Cyprus, for example, you will be able to study an uplifted section of oceanic crust and its associated sediments.

All of the travel and accommodation on our fieldtrips is currently already included in your tuition fees. We will only ask you for a small contribution towards food and drink for each trip.

Geology fieldwork
As with all of our programmes, we feel that fieldwork is a crucial way for you to embed your observation and field skills. Our Geology fieldtrips focus on key themes, such as the origins of oceanic crust, the development of sedimentary basins and their oil and gas potential, and the growth and collapse of mountain belts.
Exploration and Resource Geology
UCAS Code: F621 (BSc), F622 (BSc Placement Year), F623 (MESc)

Our Exploration and Resource Geology programme is unique in the UK. It is vocationally-orientated and well-respected by the industry. Young, skilled people are in great demand to assist in the exploration for natural resources to feed the growing world demand for minerals, oil, gas and industrial minerals.

Our Exploration and Resource Geology degrees are accredited by the Geological Society.

What will I study?

In Exploration and Resource Geology you will focus on the application of geology to the exploration, evaluation and extraction of Earth’s natural resources.

You will learn about the geological, physical and chemical processes active within the Earth, that lead to the formation of a natural resource. We’ll look at ore genesis, petroleum geology, igneous geology and other specialist topics in detail. As your knowledge develops, you’ll also have the opportunity to tailor the programme to your interest, by choosing from a range of optional modules.

Exploration geologists require a very broad range of skills to be successful in their work. You need to have an aptitude for fieldwork, good IT skills and the ability to make key decisions from limited information, as you might end up working in a rural landscape far from any access to the internet or other key tools.

This is why we focus on skills training, most of which happens in the field. We will train you in surveying, geological, geochemical and geophysical mapping techniques, safety and applying the specialist IT skills required of modern exploration professionals.

You will have the chance to put your skills into practice by undertaking either a minimum five week vocational industrial exploration placement anywhere in the world, exploring for metals, oil or industrial minerals or a practical field mapping project.

Exploration and Resource Geology fieldwork

Due to the applied nature of professional exploration work, we try to spend as much time in the field as possible, honing your skills.

We currently visit Pembrokeshire, where you will learn to draw detailed geological maps using geological and geophysical techniques; southwest England to study sedimentary basins and the tin mining legacy.

We currently also visit Spain where rock exposure is completely different from the UK, and Cyprus, where you will be able to apply all the essential practical skills needed to become a professional exploration geologist.

All of the travel and accommodation on our fieldtrips is currently included in your tuition fees. We will only ask you for a small contribution towards food and drink for each trip.

Exploration and Resource Geology careers

Our Exploration graduates frequently secure jobs with overseas or global employers, such as Gemcom Software, SRK Exploration, Kuwait Oil Company and Anglo American. Job titles can range from engineering geologist and geological consultant to mineralogist, mining software analyst and geophysical surveyor.

Don’t just take our word for it . . .

The Cardiff course provided me with skills very relevant to working in mineral exploration, which I have been able to build on since graduating. Cardiff was a fantastic place to study with ample opportunity to get involved in other activities outside your course.

Bill Levene

www.cardiff.ac.uk/earth-ocean-sciences
Environmental Geoscience

UCAS Code: F642 (BSc), F644 (BSc Placement Year), F645 (MESci)

Environmental geoscience is about understanding the evolution of the Earth and our changing environment.

It looks at how we use and manage natural resources and protect ourselves from hazardous environmental changes. Environmental geoscience focuses on geological aspects of the Earth’s formation and evolution, looking beyond the Earth’s surface and into our past.

Our Environmental Geoscience programmes are accredited by the Geological Society.

What will I study?

You will learn about how our planet works, its rocks, minerals and structures, and how natural and man-made events interact with and change the environment. You will learn about global systems like climate, how they work today, how they have operated in the past, and how they are expected to change in the future. You will also learn about man-made issues like pollution and look at subjects such as climate change and sea-level rise.

We will train you in geological mapping and conducting site surveys, to develop your understanding of global geoenvironmental issues, such as contaminated land and geotechnics. You will also learn how to conduct professional project work, including planning, execution and reporting. You will also be taught how to carry out geochemical analyses and the protocols required to work in a geochemical laboratory.

Through the programme, as your knowledge develops, you may be able to choose optional modules, allowing you to tailor the programme to your own interests and aspirations in the field. As part of your Environmental Geoscience dissertation, you will complete a one week compulsory geological mapping component. You will be encouraged to devise a series of field or laboratory-based projects as part of your dissertation, for example, looking at geology of an area and pollution, the geology and how it determines plants and land use, the geology of a region and the development of soils in relation to the climate.

Environmental Geoscience fieldwork

For environmental geologists it is important to have excellent lab skills, but also to be able to work in the field. Similarly, it’s vital to be able to work independently as well as in a group, which is why we encourage both types of working in our fieldwork.

South Wales is one of the best locations in the UK to study environmental geoscience, having a wealth of local natural and man-made geoenvironmental case studies on our doorstep. These natural locations range from the beautiful Welsh coastline up to the scenic mountains of the Brecon Beacons, including eroding sea cliffs, sand dunes, wetlands, valley slopes and past glacial erosion.

With a long industrial history, South Wales also offers study sites that include landfills, heavy metal contamination, acid mine drainage, derelict land and mining subsidence.

We also travel abroad for residential fieldwork. For example, we currently visit Portugal to conduct geological mapping training and investigate its geology. We currently also travel to Tenerife, with its imposing volcano, to tie everything you have learnt together into a 'whole island concept', which links geomorphology, hazards, soils, vegetation, water and sustainability.

All of the travel and accommodation on our fieldtrips is currently included in your tuition fees. We will only ask you for a small contribution towards food and drink for each trip.

Environmental Geoscience careers

In the past, graduates from this programme have gone on to work for the water industry, local authority waste management, as environmental advisors in the construction industry, software analysts and surveyors. Others decide to use their transferable skills in other professions, such as teaching.

Don’t just take our word for it . . .

There were many reasons that made me choose Cardiff to study Environmental Geoscience, but it was the opportunity to have an industrial placement year as well as the variety of field trips and high standard of teaching which separated Cardiff University from my other choices.

I thoroughly enjoyed my degree.

Hanna Hayward
Marine Geography
UCAS Code: **F841** (BSc), **F842** (BSc Placement Year)

Marine Geography is the study of the ocean and its coastlines. Professional marine geographers apply traditional land-based geographical skills, such as mapping and surveying, with new techniques and approaches in order to understand the intriguing geography that lies beneath the ocean surface.

Our oceans cover approximately 71% of the planet and this figure is rising. Due to its size, dynamic nature and diversity, the geography of the oceanic environment is fundamental to our understanding of the whole planet’s natural systems. Marine geographers are interested in both the exploration and development of resources to sustain humanity in the future, as well as the ocean’s impact on human life. The subject is therefore taught as a blend of physical geography with applications of human geography.

Cardiff was the first place to offer a degree programme in marine geography and has been running it successfully since 1976. Our marine geography programmes are accredited by the Royal Institution of Chartered Surveyors and the Institute of Marine Engineering, Science and Technology (IMarEST).

**What will I study?**

Marine Geographers study the socio-economic relationships between people and the physical characteristics of the sea and coast at global and local scales, to help decision-making on issues such as fisheries, offshore oil and gas, ports and shipping, conservation, minerals and energy, strategic use and management.

These issues are all critical in terms of sustainable development and environmental protection.

You will learn about a range of topics including marine biology, physical processes, coastal and ocean management, hydrographic surveying and seabed floor mapping, global climate change and environmental management of marine operations.

You will also be taught to map the marine environment to understand its physical and biological characteristics. Not only will you learn about traditional navigation and hydrographic surveying techniques, but you will also gain experience of modern remote sensing systems including satellite imagery, sidescan and multi-beam SONARS for seabed mapping, and 3D-seismic methods for probing the ocean floor.

You will also get the opportunity to test images of the seabed and marine ecosystem, by deploying underwater cameras and various seabed-sampling devices including grabs, corers and trawls on our own research vessel, the Guiding Light.

We will also train you in the various techniques to gather, evaluate, and interpret data gathered by our equipment using Geographical Information Systems (GIS), which is often used not only to investigate the geography of the coasts and oceans, but also to help decision-makers involved in Integrated Coastal Zone Management.

**Marine Geography fieldwork**

Fieldwork is integral to this programme, as you explore the oceans and coastal environments, which are the subject of your degree. Not only will you go on traditional fieldtrip, some of which are residential. You will also have sea-time training, on the Guiding Light research vessel in order to gain essential boat skills.

Cardiff is an ideal location to study all aspects of marine geography. We are situated in an estuary with a large tidal range and have access to a wide variety of coastal environments. Apart from locations in the UK, we also visit coastal and island locations – currently Malta or Jersey, and Greece – for residential fieldwork.

All of the travel and accommodation on our fieldtrips is currently included in your tuition fees. We will only ask you for a small contribution towards food and drink for each trip.

**Marine Geography careers**

Marine Geography graduates have a wealth of different career destinations to choose from, on land or on water. Our recent graduates have gained jobs as hydrographic surveyors, marine conservation officers, marine environmental consultants, oceanographic surveyors and port authority officers. Some work on waste management, or the water industries, others are employed by the Environment Agency, Estuary groups, or the water industries, others are employed by the Environment Agency, Estuary groups, Titan Environmental Surveys and Osiris Projects. Several of our graduates have also gone into marine research after completing PhDs.

**I have been fortunate enough to be employed in the marine sector ever since graduation. I am currently Project Manager of the Manta Trust’s Laamu Atoll research initiative. Without sounding cliché, there is no way I would have been able to get to do this incredible job if it had not been for my foundation in marine science gained at Cardiff. I would highly recommend the BSc Marine Geography for anyone even considering a career in the marine sector due to its broad scope, which allows anyone to explore almost every job possibility under the sun!**

Beth Taylor
Further vocational training

After your first degree you may wish to specialise in a particular area of Earth sciences by taking our well-established MSc in Applied Environmental Geology.

This vocationally-orientated course will help you develop all of the skills required for the geo-environmental, geotechnical, consulting and regulatory industries. It has been running for 25 years and its enduring popularity means we have now trained over 700 postgraduate geologists, who are now working in industry and government agencies in the UK, Europe and overseas.

The programme includes a five month individual applied dissertation project, which typically involves elements of geotechnics, ground contamination and environmental assessment. It also includes compulsory fieldwork to maximise your transferable skills. This programme is accredited by the Geological Society of London. Successful completion of this postgraduate degree can be used in credit towards gaining the professional Chartered Geologist (C.Geol) qualification.
Employability and careers

Graduates from all of our degree programmes are highly sought after by employers. This has been shown year after year, with excellent results in surveys of recent graduates, most of whom have a job within six months of completing their degree.

Our degree programmes equip you with a wide range of transferable skills:
- Numeracy
- ICT
- Practical skills
- Effective written and oral communication
- An ability to conduct independent research
- Problem solving
- Synthesis, evaluation and critical analysis
- Working independently and teamwork
- Collecting and recording data
- Report writing
- Processing, modelling and interpreting data
- Bibliographic skills

In the sector, they are valued for their field-based training and project placements, which make them ready for the daily challenges of working as geologists, surveyors, consultants (see further recent graduate jobs).

Some of our graduates choose not to enter the sector, opting to become teachers, communications professionals or even work in the finance sector. They are valued for the transferable skills they have developed during their time with us, making them ideal employees in a wide range of non-scientific fields.

Others go on to further research and study after their degree, after discovering a passion in a particular area of Earth and ocean sciences during their degrees. Our options for further study include the vocational MSc Applied Environmental Geology or options for MPhils and PhDs.
Our research

Earth and Ocean Sciences is a research School with over 40 leading international research scientists and around 50 postgraduate research students investigating a diverse range of research topics.

Research within the School of Earth and Ocean Sciences is as fascinating as it is broad. Our researchers are addressing fundamental questions relating to the evolution of our planet. From deep within the Earth, through the crust, into the oceans and onto the land, our researchers are interested in all aspects of the Earth’s formation and evolution.

Our staff will inspire your interest in a range of topics. The quality and global significance of our research was highlighted in the 2014 Research Excellence Framework, where we ranked 4th in the UK.

Our researchers are divided into the Solid, Living and Changing: Earth and Ocean Science research themes, but our specific research interests are broken down into several groups that may lie within a single theme or straddle themes. In this way we ensure that new and exciting partnerships between scientists with different interests can prosper.

The breadth of our research is reflected in the range of taught modules offered to our undergraduate students, who can get involved through practical classes and virtual surveys using satellite images, as well as through their own research projects in the laboratory and in the field.

**Solid research theme**

Through a combination of field and 3D seismic data, laboratory investigations and numerical modelling, the Solid research theme investigates the composition and dynamic evolution of the Earth’s mantle and crust, including the formation of mineral and hydrocarbon deposits, magmatic and hydrothermal processes, geodynamics, solid Earth dynamics, plate tectonics and the development of sedimentary basins. Our research in mineral deposits focuses on magmatic ore deposits of platinum-group elements, nickel, copper and chromium, notably in southern Africa and Fennoscandia.

Research on the ocean lithosphere concerns spreading ridges, transform faults, processes in mid-ocean ridge magma chambers and ancient analogues within ophiolites, primarily in Cyprus and Oman. Members of this research theme work closely with various mineral and hydrocarbon resource companies.

Research topics central to the Solid theme include: ocean lithosphere processes, subsurface and mantle geodynamics and processes in mineral deposit formation. Members from the theme also work within the African continent group, a multi-disciplinary initiative promoting research and education in the geosciences.

**Living research theme**

Life evolved on Earth some 3.5 billion years ago and has had a significant influence on environmental conditions, which continue today. Rocks contain a unique archive of past ecosystems in their fossils, which we study to document the rich history of life on Earth and its environmental impact. The Living research theme studies biogeochemical processes in mid-ocean ridge magma chambers and ancient analogues within ophiolites, primarily in Cyprus and Oman. Members of this research theme work closely with various mineral and hydrocarbon resource companies.

Key research topics within the Living theme include: geomicrobiology, microbial biogeochemistry, cold climates, ecosystems in deep time, plants and environmental dynamics and the taxonomy, stratigraphy, and evolution of marine microfossils.

**Changing research theme**

The Changing research theme investigates the causes and consequences of changes in the Earth system, in the ocean, atmosphere and on land, from the geological past into the present and future, using a combination of field research, laboratory experimentation and numerical modelling. The emphasis is on understanding natural processes that cause changes on our planet and, in some cases, how human activity affects those processes and how they affect us, for example, landslips, coastal erosion and climate change. Research projects are underway all over the planet, from the oceans around Antarctica to forested mountains at the equator.

Research topics central to the Changing theme include: Earth surface processes, plants and environmental dynamics, cold climates, marine microfossils and palaeoclimate and climate systems. Members from this theme are also working within the African continent group.
Cardiff is a compact city with an enormous character. Nestled between the rugged coastline and breathtaking mountainous scenery of Wales, the country’s capital is a cornucopia of culture, marrying historical delights with cosmopolitan amenities.

Providing an endless array of activities, one stroll through its cobbled streets can see you learn about the rich tapestry of Cardiff’s past at Cardiff Castle, before soaking in the atmosphere as the crowds spill from the Principality Stadium after one of the many sporting events it holds year round.

The vibrant and independent culinary scene is the heartbeat of the city. With something to please every palette, you can enjoy fine dining, plant-based treats and exotic cuisines from almost every corner of the globe, without forgetting Welsh cakes for dessert!

Wales is the land of song, and Cardiff certainly contributes heftily to this legacy. This city is built with music running through its veins, from the oldest record store in the world, Spillers Records, which is tucked away in Morgan Arcade, to more contemporary and intimate venues which host some of the world’s most exciting new musical talent.

Though your Cardiff bucket list may be bursting at the seams, be sure to make a little room for our National Museum which is a place of true wonder, while the iconic Wales Millennium Centre in the idyllic setting of Cardiff Bay is simply not to be missed.

Bustling with personality, Cardiff is a city made for students, offering an endless string of entertainment opportunities while remaining inexpensive and easy to navigate.

The modern shopping centres, aesthetic arcades, luscious green parks and thriving nightlife are a huge draw for living in Cardiff, though you’ll always find your way back to our Students’ Union, which is the true home of the student scene in the city.

“With an exhilarating mix of heavyweight cultural sights, exciting regeneration projects – not least the revitalised Cardiff Bay – world-class sport, a prolific music scene and some seriously banging nightlife, it’s easy to see why Cardiff now ranks alongside London and Edinburgh as one of the UK’s most compelling destinations.”

The Complete University Guide, 2017
Our students learn from leading researchers in over 300 courses across the University. As Wales’ only Russell Group institution, we have gained an international reputation for excellence in teaching and research, which is built from our history of achievement since 1883.

Cardiff University becomes home for approximately 5,500 new undergraduate students every year. While competition for places is strong, we pride ourselves on being an inclusive university, welcoming applications from everyone who wishes to study with us. We are a global university with over 7,500 international students from more than 100 countries and open our doors to all applications, irrespective of background.

Facilities and development
Committed to investing in our services, Cardiff University is home to new and well-equipped laboratories, lecture theatres, libraries and computing facilities to name a few, with more exciting developments continuously underway. We take our environmental, safety and security responsibilities seriously, embracing our comprehensive Energy, Water and Waste Policy, which is already making great savings in energy consumption and helping us to do our bit to tackle climate change.

Global Opportunities
We are partnered with over 200 leading institutions across the world, and our Global Opportunities team will help you to gain valuable international experience, through study, work or volunteering.

Supporting you
Our student support and wellbeing centres deliver a substantial range of services available to all students that are free, impartial, non-judgemental and confidential, aimed to help you make the most of student life and support you during your study. We are also rated as one of the best universities for supporting LGBT+ students and are proud to be ranked highly in the Stonewall Workplace Equality Index.

Virtual campus tour
Discover more about the University and the city of Cardiff through our interactive online tour at: virtualtour.cardiff.ac.uk
Living in Cardiff

Cardiff is the perfect place to be a student. It mirrors the hive of activity a big city offers, but in an intimate and compact setting with endless character. Drink in the atmosphere, soak up the culture and get stuck into the host of activities available in our city; your new home.

A guarantee of accommodation
If you accept your offer of a place at Cardiff on a firm basis, you are guaranteed a single occupancy place in University accommodation during your first year, living with other first year undergraduate students.

The residential dates for your particular accommodation will be confirmed in your Offer of Residence.

Residence Life
While staying in Cardiff student accommodation, you will have access to the incredible service provided by the Residence Life Team who work tirelessly to enhance your student experience.

Working in partnership with Student Support and Wellbeing, the Residences Office and the Students’ Union, Residence Life will welcome you to Cardiff and help you to make a smooth transition into university.

They also help foster a strong sense of community through social events and cultural activities, as well as practical support too.

Students’ Union
Our Students’ Union is at the heart of the Cardiff student experience. It’s a student-led and independent part of the University, dedicated to making your time with us the best it can be.

Built on the foundation of inclusion, diversity, personal development and friendship, the Students’ Union runs a range of activities and services to help enhance your Cardiff University experience.

These include advice, training, skills development, entertainment, volunteering opportunities and employment throughout your time at Cardiff and to prepare you for a career after university too.

“Cardiff has one of the biggest, best and most active students’ unions in the UK, with high quality facilities, including Y Plas, a 2,150 capacity nightclub; and the Great Hall, a major concert venue.”
Complete University Guide, 2019

Find out more . . .

Accommodation
For further information please visit our website: www.cardiff.ac.uk/residences
You can also watch our residences film online at: www.youtube.com/watch?v=hzxX-dYLj88

Students’ Union
facebook.com/cardiffstudents
snapchat.com/add/cardiffstudents
instagram.com/cardiffstudents
@cardiffstudents
www.youtube.com/cardiffstudents
Applications

To be considered for entry onto one of our degree programmes you should apply online via the UCAS website using the ‘UCAS Apply’ facility. To use this facility you need to log onto: www.ucas.ac.uk/apply

The website will provide you with information on how to apply and explains the UCAS procedure.

Entry requirements

For detailed entry requirements and latest typical offers please see: www.cardiff.ac.uk/ugcourses

Our typical offers are:

MESci:
A-level: ABB from three A-levels – at least two of which must be sciences.
International Baccalaureate: If taking two sciences at higher level: 32 points; or 6,5,5 points from three higher level subjects, including a minimum of 5 points in each of the two higher level sciences.
If taking one science at higher level: 32 points; or 6,5,5 from three higher level subjects, including 5 points in one higher level science and 7 points in one standard level science.
WBQ: WBQ core will be accepted in lieu of one A-level, excluding the required science A-levels.

BSc:
A-level: BBB from three A-levels – at least two of which must be sciences.
International Baccalaureate: If taking two sciences at higher level: 30 points; or 6,5,5 points from three higher level subjects, including a minimum of 5 points in each of the two higher level sciences.
If taking one science at higher level: 30 points; or 6,5,5 from three higher level subjects, including 5 points in one higher level science and 7 points in one standard level science.
WBQ: WBQ core will be accepted in lieu of one A-level, excluding the required science A-levels.

The School will consider combinations of qualifications which include both vocational and academic A-levels.

Equality and diversity

We are committed to supporting, developing and promoting equality and diversity in all our practices and activities.

We aim to establish an inclusive culture free from discrimination and based upon the values of dignity, courtesy and respect.

We recognise the right of every person to be treated in accordance with these values.

We are committed to advancing equality on the grounds of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion and belief (including lack of belief), sex and sexual orientation and to fostering good relations between different groups.

For further information, please visit: www.cardiff.ac.uk/public-information/equality-and-diversity

Deferred entry

The School has no objection to the possibility of deferred entry provided the intervening year is spent in a positive and worthwhile way. Application is made through UCAS in the usual way, although the UCAS application must show the deferred year of entry.

Open Days

The University runs Open Days throughout the year, giving anyone considering applying to Cardiff the chance to find out more about life at university and see what we offer.

If you apply and are offered a place, you will be invited to meet us at our specially-devised School Open Days. When making that important decision, we strongly encourage you to join us. Not only will you have the opportunity to hear more about our degrees, you will also meet staff, have the chance to talk to current students and to get the feel for our cosmopolitan capital city.

Student support

Whether or not you use student support services it’s reassuring to know that they are available to you should you need them.

Every student is assigned a personal tutor, but should you need extra support we have a range of services available to you. Such as;

Disability and Dyslexia support
Email: disability@cardiff.ac.uk
Tel: +44 (0)29 2087 4844
Email: dyslexia@cardiff.ac.uk
Tel: +44(0) 29 2087 4844

Counselling and Wellbeing Guidance
Email: wellbeingandcounselling@cardiff.ac.uk
Tel: +44 (0)29 2087 4966

International Student Support
Email: iss@cardiff.ac.uk
Tel: +44 (0)29 2087 6009

Student Mentor Scheme
www.cardiff.ac.uk/study/student-life/student-support

Tuition fees and financial assistance

The University charges an annual fee which covers all tuition fees, registration and examinations other than the re-taking of examinations, by applicants not currently registered. Please note charges for accommodation in University Residences are additional.

Please see the following website for more information:
www.cardiff.ac.uk/fees

Scholarships and bursaries

For more information please visit the following website:
www.cardiff.ac.uk/scholarships
How to find the School

The School of Earth and Ocean Sciences is located in the Main Building which sits at the heart of the Cathays Park Campus, a short walk from the city centre. The Main Building is close to the Cathays railway station and is easily accessible from many of the University’s Halls of Residence.

Key

School of Earth and Ocean Sciences

Important Legal Information

The contents of this brochure relate to the Entry 2020 admissions cycle and are correct at the time of going to press in April 2019. However, there is a lengthy period of time between printing this brochure and applications being made to, and processed by us, so please check our website at: www.cardiff.ac.uk before making an application in case there are any changes to the course you are interested in or to other facilities and services described here. Where there is a difference between the contents of this brochure and our website, the contents of the website take precedence and represent the basis on which we intend to deliver our services to you.

Your degree: Students admitted to Cardiff University study for a Cardiff University degree.

Cardiff University is a registered charity, no. 1136855

This prospectus can be made available in alternative formats, including large print (text), Braille and on audio tape/CD.

To request an alternative format please contact Laura Roberts:

Tel: 029 2087 4455
Email: RobertsL9@cardiff.ac.uk
To find out more about the School of Earth and Ocean Sciences please visit our website: www.cardiff.ac.uk/earth-ocean-science

Contact us
Tel: 029 2087 4830
Email: enquiry@cardiff.ac.uk

School of Earth and Ocean Sciences
Cardiff University
Main Building
Cardiff CF10 3AT

Stay in touch
cardiffuniug
@CU_Earth
@cardiffuniug
@CU_Earth

Student life
Got questions about student life? Get them answered at: www.cardiff.ac.uk/studentbloggers

Want to know more about life at Cardiff University? Our student bloggers are recording their experiences and are happy to answer your questions. Our student bloggers are real students studying on a range of courses. They are here to answer any questions you have about life at Cardiff University. What’s a typical day like? What clubs and societies are there? Is Cardiff’s music scene any good? It can be almost anything.