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
We received 100% overall satisfaction scores on three of our courses in the National Student Survey 2019.

"Studying Exploration Geology 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 in your future and choosing your university and degree programme is one of life’s all-important decisions.
The School of Earth and Ocean Sciences is an interdisciplinary and collaborative community that excels in teaching and research, providing a supportive and inspiring place to learn about the evolution of the Earth, its life, how it works and its interactions with society.

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, practical classes, laboratory work and tutorials are all part of our 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. From climate change to responsible 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 that provide an outstanding natural laboratory for Earth and Ocean Sciences. You will also find information about the University, our School’s facilities and 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 geographical science education at Cardiff involves a holistic approach to our planet where students can explore our oceans, atmosphere and lithosphere as integrated parts of the whole Earth system.

Each of our degree programmes can offer you:

- a common first semester which provides a strong foundation in geological and geographical sciences
- a grounding in many of the skills you will need in your chosen profession (e.g. environmental surveying, identifying hazards, mapping training, problem-solving)
- flexibility to transfer between subjects or programmes up to the end of your first semester (or up to the end of year one within either our earth science or environmental/geographical science programme groups)
- plenty of opportunities for field and practical work in the UK and overseas to develop your skills and enhance your learning
- enthusiastic staff who are passionate about their subject
- opportunities to give feedback and work with staff to make the student learning experience the best that it can be
- specialist careers support and advice throughout your studies, to give you the best possible start to your working life.

Our degree programmes

F621
BSc Exploration 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.

F623
MSci Exploration 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.

BSc Physical Geography
A three-year degree for students interested in exploring the Earth's landscapes, climate and the dynamic physical processes that shape the Earth's surface, including subjects such as geomorphological processes and hydrology.

MSci Physical Geography
A four-year degree for students interested in developing advanced skills in mapping, research, analysis and problem-solving. In year four you will undertake an independent research project that focuses on your subject of interest with a leading scientist from the School.
### Our degree programmes

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>F600</td>
<td><strong>BSc Geology</strong></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>
</tr>
<tr>
<td>F601</td>
<td><strong>MSci Geology</strong></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><strong>BSc Environmental Geoscience</strong></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>
</tr>
<tr>
<td>F625</td>
<td><strong>MSci Environmental Geoscience</strong></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><strong>BSc Environmental Geography</strong></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><strong>MSci Environmental Geography</strong></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><strong>BSc Marine Geography</strong></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>1D79</td>
<td><strong>MSci Marine Geography</strong></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>
</tr>
</tbody>
</table>

All our BSc programmes are also available as a four year option where the third year is taken as a professional or industrial placement. Enrolment on these programmes occurs during Year 2 and is subject to students achieving adequate marks in Year 1 and the availability of suitable placements. Usually 20 – 30 students a year are out on such programmes across all subject areas.
The first year

The first year is designed to give you a solid foundation in Earth and geographical sciences which you can build upon with specialised modules as your course progresses.
Many of our first year students haven’t been able to study geology or other Earth science subjects such as environmental geoscience and marine geography at school. This is why our first semester is common across all of our programmes.

During the first year, you will be introduced to the study of the Earth and oceans as a system and develop key scientific skills. General skills, such as observation, numeracy, presentation and communication will be invaluable to your future studies and careers. We introduce and let you develop these skills in your year one curriculum.

In the first few weeks you will go on 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 opportunities to get to know other new students and staff.

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

In the spring you will also take part in a residential field excursion and depending on the programme, you may have the opportunity to undertake work at sea.

Some of the first year modules extend over the two semesters and all modules include lectures that are complimented by practical laboratory work to help build skills and reinforce key concepts. Several modules include individual and group study projects that might require you to use photographs or other data you have recorded in the field.

Most modules are assessed by a combination of examination and various types of continuous assessment including essays, reports, posters and presentations. The nature and weighting of the continuous assessment 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.

Supplementary workshops are available to you if you need extra support. You will be allocated a personal tutor in the first week of your course and they 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 any of our degree programmes up to the start of the second semester in mid-January. During the second semester the earth science programmes (Geology, Exploration Geology and Environmental Geoscience) study identical modules. Likewise, our environmental/geographical science programmes (Environmental Geography, Marine Geography and Physical Geography) study the same modules in semester two.

Don’t just take our word for it…

During the first few weeks at Cardiff Uni, you will go on many field trips. 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 MSci

We offer Bachelor of Science (BSc) or Master’s degree (MSci) programmes with a variety of options, but which is right for you?

**BSc**
- A three-year degree programme (four years if you enrol on a professional placement option)
- Broad range of careers open to you in the earth and geographical sciences, and many other areas such as business, communications or teaching
- Perfect for students who prefer applied project work to a career as a research professional
- Our accredited degrees will provide a great and well-respected introduction to many earth and environmental professions
- You have the opportunity to top-up your studies with our one-year vocational MSc in Applied Environmental Geology following your BSc.
- All our BSc programmes are also available as a four year option where the third year is taken as a professional or industrial placement. Enrolment on these programmes occurs during Year 2 and is subject to students achieving adequate marks in Year 1 and the availability of suitable placements.

**MSci**
- A four-year degree programme
- Identical entry requirements to the BSc
- There are options in environmental modelling or business and research skills that provide an enhanced basis for entering into professional research careers in earth and geographical sciences
- There is increased flexibility to choose research topics and modules that match your interests
- You have an opportunity to work within our research groups
- There are more extensive opportunities for small group and individual tuition
- A higher level of education comparable with international first degree qualification.

**Master’s degree**
The Master of Science is a four-year degree programme that gives you the opportunity to explore your chosen subject area more than the equivalent three-year BSc programme. You will have the opportunity to undertake your own research project as part of this degree, but will also be expected achieve an average of over 60% in each year to remain on the MSci.

**Transferring between programmes**
Transfer from a BSc to an MSci is possible at the end of years one or two and requires an average mark of 60%. Transfer from MSci to the equivalent BSc can also take place at the end of years one and two. Transfer into and out of the MSci programmes is possible, but it is best to enrol on the MSci in year one if you know that is the degree you want to do.
Environmental Geography
UCAS Code: K32H (BSc), Y32M (MSci)

Explore Earth’s environmental surface processes and study the human impacts on the environment through a mix of lectures and field trips.

Are you passionate about finding solutions to the most urgent environmental threats facing our planet today? Having an in-depth scientific understanding of the natural environment is key to finding and addressing issues like climate change, water pollution, soil degradation and erosion. If you’re concerned about the health of the planet and want to make a positive difference, our Environmental Geography course could be for you.

You will explore environmental surface processes and develop a scientific understanding of the impact that people have had on the chemistry and ecology of our planet’s environment over time. You will study different environments across the world on land and at sea, from ‘extreme’ polar environments to tropical coral reefs. The course will also address the pressures that our environments face today and in the future, covering topics such as water quality chemistry and mapping vegetation and soils.

You will get hands-on with mapping and monitoring and produce your own maps using state-of-the-art, professional mapping software.

Graduates leave with experience of hands-on fieldwork and cutting-edge research as well as a range of geographical skills in mapping, research, analysis and problem-solving that are transferrable across a range of roles and industries.

You can choose between the three-year BSc degree and the four-year MSci degree. Our Master’s degrees involve a fourth year of study where you work on an independent research project with a world-leading scientist from the School and their research team. You will develop the advanced research skills needed for a career in academic research.

Fieldwork opportunities
Wales is like a playground for environmental geographers. From impressive mountains in the north to a biodiverse tidal estuary in the south, we have a huge range of natural environments to explore. We make the most of our location and take regular day trips to Gower, the Glamorgan Heritage Coast and the Brecon Beacons in South Wales.

There will also be opportunities to do overseas trips, in the past we’ve been to the Netherlands and Switzerland. The cost of the compulsory trips is included in your course fees.

Careers and employability
With the planet under increasing pressure from climate change, over-exploitation and pollution, the knowledge and skills of an environmental geographer are in demand. An environmental geographer will play an important role in a greener, low carbon future, using their understanding of the Earth to find sustainable solutions to the challenges we face in the future.

You can choose to work in a variety of different industries and roles including conservation and environmental management, as an environmental consultant or a geospatial analyst. You will also have essential employable skills that sectors like insurance, finance, education and planning are looking for.

Some of our past students have gone on to work at the Environment Agency, Natural Resources Wales, local government, environmental consultancies and environmental charities.

In the National Student Survey 2019 our Environmental and Marine Geography programmes were ranked 1st / 63 in the UK in terms of overall student satisfaction
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
Environmental Geoscience
UCAS Code: F642 (BSc), F625 (MSci)

With the planet facing increasing environmental threats and challenges both natural and man-made, the knowledge and skills of an environmental geoscientist are in ever-increasing demand.

Do you have a curious mind? Are you fascinated by how the Earth works? An environmental geoscientist uses their understanding of the planet and its processes to predict hazards like floods and earthquakes, clean up the dangerous waste left by industries like chemical manufacturing or mining, and help civil engineers plan the construction of new roads, tunnels or buildings.

On our Environmental Geoscience course you will explore the different processes that happen on our planet like earthquakes, acid rain and global warming. You use this knowledge to solve real problems where the geological aspects of civil engineering, environmental monitoring and remediation, and climate change are relevant in the UK and globally. Plus, you will develop high level skills in mapping, research, analysis and problem-solving.

You don’t need to have studied Geology as we’ll be starting year one with the basic principles to bring everyone to the same level.

Our degrees are accredited by the Geological Society, the professional body for geosciences in the UK. We’ve worked with industry to design our degree so you graduate with the practical skills needed to be a professional environmental geoscientist. These skills cover fieldwork, the use of instrumentation for environmental monitoring, data capture and presentation using Geographical Information Systems (GIS) software, and technical report writing. You can choose between our three-year BSc degree, the four-year version of our BSc degree including a placement year, or our four-year MSci degree.

In the past our students have gone on placement with water companies, civil engineering firms and environmental consultancies. Our Master’s degree includes an additional fourth year of study where you work on a research project with a leading scientist from the School and their research staff. You will develop advanced skills in research and get experience of applying your findings to an issue or problem in environmental geoscience, such as modelling the effects of volcanic eruptions on air travel or the health effects of volcanic ash in the lungs.

Fieldwork opportunities
We make the most of our location and take regular day and longer residential trips to areas of natural beauty, as well as old industrial and mining sites in South Wales. This area is ideally suited to teaching how geology impacts on both the landscapes and industry of the region. There will also be opportunities to do overseas trips to explore environmental hazards and problems in different climates, in the past we’ve been to Tenerife and to Cyprus. The cost of the compulsory field trips is included in your course fees.

Careers and employability
Environmental geoscientists will play an important role in developing sustainable infrastructure, green energy projects and helping to manage and remove pollution left by former industries like mining and chemicals manufacturing.

You can choose to work in a variety of different industries and roles including conservation and environmental management, as an engineering geologist, a water engineer or an environmental consultant. You will also have essential employable skills that sectors like insurance, finance, education and planning are looking for.

Some of our past students have gone on to work at the Environment Agency, BAM Construction, Atkins, Welsh Water, LCM Environmental Services and Mott MacDonald.

Don’t just take our word for it . . .

After graduating from three amazing years studying Environmental Geoscience, I became a Conservation Officer for the National Trust where I manage 270 acres of green space in Bermuda. I am constantly aided by the experiences and processes taught during the course. I gained invaluable international experience and made many lifelong friends.

Lawrence Doughty
My studies at Cardiff University helped me to develop the knowledge, sound understanding and confidence I needed to work in remote regions of the world. The strong emphasis on applied modules and the experience of exploration-focused fieldwork in Spain and Cyprus make this course unique and it was perfect in preparing me for a career in mineral exploration.  

Jemma Harrison
Exploration Geology
UCAS Code: **F621** (BSc), **F622** (MSc)

Learn how to explore for Earth’s natural treasures on this unique degree, the only undergraduate course in the UK to focus on specialist training in resource exploration. Cardiff University has been training mining engineers and geologists for over 100 years.

People have been using Earth’s natural resources like metals, minerals, oil and gas for centuries to build our towns and cities, power our homes, and to make the vehicles, devices and tools that our 21st Century society depends on. New resources are increasingly hard to find and require specialist skills and technology to locate and exploit responsibly. Exploration Geology will appeal to anyone interested in unravelling Earth’s mysteries whilst seeking out the treasures and essential resources that will maintain our society into the future.

On our Exploration Geology course, you will learn how the Earth’s processes have created the planet’s natural resources and how to explore for them to meet future demand. Exploration geologists will be central to delivering a low carbon future by helping meet the surging demand for metals to supply the renewable energy industry that’s needed to tackle climate change.

You don’t need to have studied Geology already as we’ll be starting year one with the basic principles to bring everyone to the same level.

Our degrees are accredited by Geological Society, the professional body for geosciences in the UK. We’ve worked with industry to design our course so you graduate with the specialist skills needed to be a professional exploration geologist. These skills cover fieldwork (both on surface and underground), experience of modern exploration software, critical analysis of data, and the confidence to make key decisions from limited information. Cardiff graduates have been leaders in the mineral and energy industries for over 100 years and you can become part of this ongoing story.

You can choose between the three-year BSc degree, the four-year version of our BSc degree including a placement year, and the four-year MSci degree. Our Master’s degree includes an additional fourth year of study where you get the chance to work on an exploration research project with an academic from the School in their research field. You will develop advanced skills in research and gain experience of applying your findings in an industry context.

Fieldwork opportunities
We have a former gold mine close to Cardiff and many other outstanding natural landscapes for us to explore nearby. We make the most of our location and take regular day and longer residential trips to explore mining sites across Wales. There will also be opportunities to do overseas trips, in the past we’ve been to Spain and Cyprus. The cost of the compulsory field trips is included in your course fees.

Careers and employability
Our constant demand for metals, construction materials and other natural resources means the knowledge and skills of an exploration geologist are in demand.

With a degree in Exploration Geology you have a range of career options open to you and can apply for roles like an exploration geologist, a hydrogeologist, a mineralogist or an environmental consultant. The practical and business-focussed aspects of the degree mean that you will also have essential employable skills that sectors like insurance, finance, education and planning are looking for.

Some of our past students have gone on to work for North American Nickel, Karelian Gold Ltd, Mineco, SRK Consulting, 6 Alpha Associates, Gemfields Ltd, Terravision Exploration Ltd, Bibby Hydromap and the engineering and mining consultancies SRK, Golder Associates and Royal HaskoningDHV.

Many of our students that spent time in industry as part of their dissertation project went on to work for the same organisation after graduation.

Our students gave the BSc in Exploration Geology **100%** for overall satisfaction in the National Student Survey 2019.
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
Ocean sustainability is gathering momentum on the global stage. If you’re concerned about the health and wealth of our oceans and want to make a positive difference in the future, there has never been a better time to study Marine Geography.

The world’s oceans and coasts are full of amazing habitats and wildlife and they sustain many important industries including shipping, tourism and renewable energy. In addition, governments and businesses worldwide are looking to harness new offshore resources. As a marine geographer you will have the skills and knowledge needed to keep our oceans healthy and make sure that the growth in marine industry and economy is done in a sustainable way.

On the UK’s only Marine Geography degree, you will explore the science behind marine conservation and sustainability, and associated challenges. As part of this, you will examine the influence of climate change, increased coastal erosion and flooding, as well as the need to adapt to such coastal futures.

Graduates leave with the skills to solve a range of complex ‘real’ marine and coastal environmental problems and with experience of hands-on fieldwork and cutting-edge research with world-leading scientists and external professionals.

Choose between our three-year BSc degree, the four-year version of our BSc degree including a placement year, or our four-year MSci degree.

Our previous students have completed placements in a range of topics including offshore surveying, ecosystem mapping and port environmental management.

Our Master’s degrees involve a fourth year of study where you work on a research project in an exciting topic within Marine Geography with an academic from the School and their research team. You will develop the advanced research skills needed for a career in academic research or in marine environmental consultancy.

Fieldwork opportunities
South Wales has a rich and diverse marine environment including estuaries with large tidal ranges, islands thriving with wildlife and outstanding beaches along the Gower Peninsula. You will get plenty of opportunity to develop your field and boat work skills with regular day trips and residential trips along the Bristol Channel and to sites such as the Glamorgan Heritage Coast and Gower, South Wales.

There will also be opportunities to do overseas trips, in the recent past we’ve been to Malta, Jersey and Samos, Greece. You will get involved in a range of activities like offshore surveying, water quality monitoring, ecological mapping and beach profiling. The cost of the compulsory field trips is included in your course fees.

Careers and employability
Keeping our oceans healthy is critical to our future. The skills and knowledge of marine geographers are needed to tackle current and future ocean challenges to not only make sure that important habitats and wildlife are protected but also to ensure that maritime industries like fishing, tourism, shipping and renewable energy are developed sustainably.

You can choose to work in a variety of different industries and roles including conservation and marine management, as an environmental consultant or marine geospatial analyst. You will also have many skills that other sectors like insurance, finance, education and planning are looking for.

Some of our past students now work in the Hydrographic Office, Titan Environmental Surveys, the Environment Agency, Natural Resources Wales, Welsh Government and the Marine Management Organisation as well as for a number of ports and marine conservation organisations around the world.

Our students gave the BSc in Marine Geography 100% for overall satisfaction in the National Student Survey 2019.
Geology
UCAS Code: **F600** (BSc), **F601** (MSci)

Explore the Earth’s fascinating history, internal systems and materials through a mix of inspiring lectures, hands-on practical work, frontier research and field trips in the UK and Europe.

To find solutions to some of the biggest problems facing our planet today we need to understand the Earth’s history and processes. How can we use what we know about past climates on Earth to understand the effects of climate change today? How can we use what we know about earthquakes and volcanos to predict future hazards and make sure people and buildings are safe in the future? These are just some of the challenges that we’ll explore.

On our Geology course you will discover how rocks and minerals are formed, how animals evolve over geological time, what causes earthquakes and volcanoes and how the science of Geology impacts on our lives today. You don’t need to have studied Geology already as we’ll be starting year one with the basic principles to bring everyone to the same level.

Our degrees are accredited by the Geological Society, the professional body for geosciences in the UK. We’ve worked with industry to design our degree so you graduate with the specialist skills needed to be a professional geologist. These skills cover fieldwork, experience of data capture using Geographical Information Systems (GIS) software, critical analysis of data, and the confidence to make key decisions from limited information.

You can choose between the three-year BSc degree, our four-year BSc with a professional placement and the four-year MSci degree. Our Master’s degree includes an additional fourth year of study where you work on an exploration research project with an academic from the School in their research field. You will develop advanced skills in research and get experience of scientific writing and presentation at a professional level.

Fieldwork opportunities
South Wales has a diverse geological history and there are lots of outstanding natural landscapes for us to explore and for you to develop your fieldwork skills. We make the most of our location and explore how geology impacts on the landscapes and the industry of the local region through regular day trips and longer residential trips.

There will also be opportunities to go on an overseas mapping trip, in the past we’ve been to Spain and Cyprus. The cost of all compulsory field trips is included in your course fees.

Careers and employability
With a geology degree you can choose to work in a variety of different roles including an engineering geologist, a hydrogeologist, a mineralogist, and an environmental consultant. You will also have essential employable skills that sectors like insurance, finance, education and planning are looking for.

Our past students have gone on to work for top employers including British Geological Survey, the Environment Agency, Digirock, Boliden Mining, Network Rail, Balfour Beatty and the engineering and mining consultancy Royal HaskoningDHV.
Physical Geography

Explore the Earth’s landscapes, climate and the dynamic physical processes that shape the Earth’s surface through lectures, research and field trips to locations such as the Gower Peninsula, Snowdonia and overseas.

From climatic changes and natural hazards to shifting tectonic plates, our planet is constantly evolving and reshaping itself. This course will study the science behind Earth’s physical processes, including geomorphological processes and hydrology, so you can better understand the challenges that lie ahead and help to make positive differences in the future.

On our Physical Geography course, you will discover how landscapes have evolved, the current processes, impacts and influences on our planet, and how we can predict changes in the future. You will develop skills in mapping, research, analysis and problem-solving using state-of-the-art field and laboratory equipment. Plus, you will utilise high-level, professional software applications to model future landscape changes.

Graduates leave with the skills to solve a range of complex real-world problems related to the physical environment and with experience of hands-on fieldwork and cutting-edge research with world-leading scientists.

Choose between our three-year BSc degree, the four-year version of our BSc degree including a placement year, or our four-year MSci degree.

You will have the opportunity to complete a placement with organisations such as the Meteorological Office, engineering consultancies, and government agencies such as Natural Resources Wales.

Our Master’s degrees involve a fourth year of study where you work on a research project with a leading scientist from the School and their research staff. You will develop advanced skills in mapping, research, analysis and problem-solving.

Fieldwork opportunities
Wales is like a playground for geographers. From impressive mountains in the north to a biodiverse tidal estuary in the south, we have a huge range of physical environments and processes to explore.

We make the most of our location and take regular day trips along the coast and to the Brecon Beacons in South Wales. You will complete a residential field course to a coastal national park within Wales (either Pembrokeshire or Snowdonia) where you will learn key field skills including mapping and surveying techniques. There will also be opportunities to complete overseas trips, in locations such as Switzerland and Tenerife. The cost of all compulsory field trips is included in your course fees.

Careers and employability
With the planet under increasing pressure from climate change, human populations are residing in ever more vulnerable locations. As a physical geographer you can use your knowledge, skills and understanding of the Earth’s processes to find sustainable solutions to contemporary and future complex challenges.

You can choose to work in a variety of different industries and roles in government, government agencies or environmental consultancies, include working as an environmental specialist or a geospatial analyst. You will also have employable skills that sectors like insurance, finance, education and planning are looking for.

Some of our School’s past students have gone on to work at the Environment Agency, Natural Resources Wales, local government, environmental consultancies and environmental charities.
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 fully integrated with the professional development (CPD) lecture programme of the Southern Wales Group of the Geological Society of London.

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.

Don’t just take our word for it . . .

The dual coverage of Geotechnical and geo-environmental aspects within the course really prepared me for a career in ground investigation. I have been able to draw on content from a variety of modules, which I feel gave me the edge in a recent (successful) job interview for a new role. The hands on and practical nature of the course meant that when I left and started my first ‘proper job’ I not only felt well prepared for the tasks at hand, but also like I already had a year’s experience in industry under my belt.

Rhian Lynes, MSc Applied Environmental Geology
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 graduate-level job within six months of completing their degree.

Our degree programmes equip you with a wide range of transferable skills including:

- 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
- Professional report writing
- Processing, modelling and interpreting data
- Skills in using and properly referencing, published work.

In the sector, our graduates are valued for their field-based training and individual research projects, which make them ready for the daily challenges of working as geologists, surveyors, consultants and environmental scientists for government organisations and industry in the UK and overseas.

Some of our graduates choose not to enter the sector, opting to become teachers, communications professionals or even work in the finance sector where the ability to evaluate incomplete or partial information is a key attribute. Many are particularly valued for the range of 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 or geographical sciences during their degrees. Our options for further study include the vocational MSc Applied Environmental Geology or options for MPhils and PhDs.

Find out more here:

www.cardiff.ac.uk/careers-advice
Our research

Earth and Ocean Sciences is a research-led School with over 40 leading international scientists and around 50 postgraduate 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 national 2014 Research Excellence Framework, where we ranked 4th in the UK for the quality of our outputs.

Our researchers are divided into three research centres: the Centre for Solid Earth and Natural Resources, the Centre for Geobiology and Geochemistry, and the Centre for Resilience and Environmental Change; also known in short-hand as the Solid, Living and Changing research centres.

Our specific research interests are broken down into several groups that may lie within a single centre or straddle centres. 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.

Centre for Solid Earth and Natural Resources (Solid)

Through a combination of field and 3D seismic data, laboratory investigations and numerical modelling, the Solid research centre 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 Canada; elements needed for the future green economy. 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 centre work closely with various mineral and energy resource companies.

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

Centre for Geobiology and Geochemistry (Living)

Life evolved on Earth some 3.5 billion years ago and has had a significant influence on environmental conditions, which continues 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 centre studies biogeochemical processes today and the fossil inferences of their past roles. Life on Earth has co-evolved with the planet and without life our environment would be very different, for example, little oxygen, high CO₂, high temperatures, highly reduced oceans and no oil or gas.

Microbes drive many of the responsible biogeochemical cycles and we investigate the rates, controls, feedbacks and the organisms involved. The centre also traces low and high temperature Earth system processes using geochemical, including mass spectrometry, methods.

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

Centre for Resilience and Environmental Change (Changing)

The Changing research centre 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 centre include: Earth surface processes, cold climates, marine microfossils, aeolian processes, and palaeoclimate and climate systems. Members from this centre are also working within the African continent group, including on hydrology and hydrogeology.
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 palate, 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
A leading university

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.

“Cardiff University is highly rated on a local and global scale.”
The Telegraph, 2018

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-dYJfB8

Students’ Union
facebook.com/cardiffstudents
snapshot.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

All applicants offering all types of qualification must have at least 1 STEM subject (Chemistry, Physics, Maths, Geology, Biology, Geography, Computer Science, ICT and Environmental Science) in their highest level entry qualifications.

Our typical offers are:

A-level: ABB if taking one science and BBB if taking two sciences (from the STEM subjects listed above).

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 1 higher level science and 7 points in 1 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
- University and NHS buildings
- Student residences

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 September 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
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
facebook: cardiffuniug
Twitter: @CU_Earth
@cardiffuniug
Instagram: @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.