Environmental Science at Sheffield

Undergraduate Study
<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science at Sheffield</td>
<td>4 - 5</td>
</tr>
<tr>
<td>110 Years and counting - History of the Department</td>
<td>6 - 7</td>
</tr>
<tr>
<td>Our Courses</td>
<td>8 - 11</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>BSc Environmental Science</td>
<td></td>
</tr>
<tr>
<td>MEnvSci Environmental Science</td>
<td></td>
</tr>
<tr>
<td>Our Specialisms</td>
<td>14 - 15</td>
</tr>
<tr>
<td>Enhance your Degree</td>
<td>16 - 17</td>
</tr>
<tr>
<td>Fieldwork</td>
<td>18 - 19</td>
</tr>
<tr>
<td>Graduate Employment and Careers</td>
<td>20</td>
</tr>
<tr>
<td>Life in Sheffield</td>
<td>21</td>
</tr>
<tr>
<td>Next steps</td>
<td>22</td>
</tr>
</tbody>
</table>
Environmental Science at Sheffield was one of the first degree programmes of its kind to be established. In recent years, awareness about the complexity of the natural environment and the impacts of human activity has accelerated. This has led to the growth of Environmental Science as a major international discipline helping to tackle some of the biggest challenges facing our planet.

Environmental issues are a pressing concern for global government, businesses and societies and there is a high demand for environmental specialists in all these areas. Sheffield remains at the forefront of the discipline. This is demonstrated by our graduates who are working pursuing careers in industry, research, conservation, ecology and many other sectors across the world.

- 100% of our graduates are in work or further study six months after finishing their course (UNISTATS)
- Top 15 UK geography department (QS World Rankings 2016)
- Top 5 Animal and Plant Sciences department in the UK for research excellence. REF 2014

Our Expertise
The Environmental Science programmes draw together the international reputation of both the Department of Geography and the Department of Animal and Plant Sciences.

Professional Accreditation
Our courses are accredited by the Institution of Environmental Sciences (IES) and the Committee of Heads of Environmental Sciences (CHES). The IES is the leading professional body for Environmental Science professionals in the UK. Accreditation confirms that our courses are of high quality and provide excellent standards of professional development. Students on our courses are eligible to become student members of the IES – the first step toward achieving Chartered Environmentalist (CEnv) status.

The Department of Geography
The department is a world leader in teaching and research. We have been ranked as a top 40 department in the QS World Rankings 2016, that recognises the quality of our research and teaching.

The Department of Animal and Plant Sciences
The department is one of the leading research departments for whole-organism biology in the UK, ranked within the UK top 5 departments for research excellence (REF 2014).

“... environmental science is a broad and multidisciplinary subject exploring processes that control and have an impact on the wide range of habitats, ecosystems and environments on planet Earth.

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“... it’s great having different lectures and practical sessions from the two departments – you get to look at issues like climate change from different perspectives. You also learn to use a wide range of equipment which is good fun, and gives you an important set of practical skills.” — Rachael Osguthorpe, MEnvSci Environmental Science
110 Years and counting - History of the Department

The University of Sheffield received its Royal Charter in 1905 but only in 1907 did Sir George Goldie, then Chair of the Royal Geographical Society, suggest to the University that studying Geography would help understand the world and the market-place therein. William Edgar Allen, a founder member of the University Council donated £150 per year for five years so that Geography could be introduced. Rudmose Brown, a polar explorer, Scottish Geographical Society medal winner and assistant to the Professor of Botany at University College Dundee was appointed. He set up the first courses in Geography in 1908 to help understand the world and the market-place. The department was founded in 1908 and the first course in Geography was offered. The department continued to grow and by 1919 the Geography department had 108 students. In 1923, Sheffield University was contracted to train staff of the new London and North Eastern Railway company and Rudmose Brown taught ‘Railway Geography’ to 133 students. After 16 years with only one staff member, 1924 saw the arrival of Alice Garnett as President of IBG. The department’s growth continues without losing sight of academic excellence which is shown in numerous prices and awards won by the department’s members of staff.

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Our Environmental Science programmes provide you with the knowledge and skills needed to understand and solve critical environmental issues. You will study with academic staff whose research expertise is internationally recognised and your learning will take place in state-of-the-art laboratories, lecture theatres and libraries.

You have the opportunity to tailor your degree to your own interests, studying modules that span environmental science. You can also gain more from your degree, by incorporating modern languages and enterprise modules, or by spending a year working in industry (Degree with Employment Experience) or studying overseas (Environmental Science with a Year Abroad).

A key feature of our programmes is ‘Professional Skills for Environmental Science’. This core module provides you with the transferable skills required for environmental practice. Invited speakers from consultancy, industry and regulatory bodies share their professional experience and highlight the skills and knowledge that employers are looking for:

- Interdisciplinary teaching
- Research-led teaching from experts in the field
- Wide choice of topics
- Seminars and workshops
- Technology Enhanced Learning
- Field classes
- Excellent tutorial support
- Laboratory practicals

For more information: www.sheffield.ac.uk/geography/undergraduate/es
Environmental Science

The BSc programme provides a solid foundation in environmental sciences. You will study core modules to advance your knowledge and to develop your practical skills. You will also choose from a range of optional modules, allowing you to follow your own academic interests. In Year 2 and Year 3 you can choose to focus on an environmental science specialism or to follow a more general degree where you study different topics from across the discipline.

Students on the BSc course may transfer to the Masters course (MEnvSci) subject to academic achievement.

Course Structure - Year 1
In Year 1 you will study a mixture of knowledge-based and skills-based modules in both physical geography and environmental biology.

Core modules: 90 credits
10 Biodiversity
10 Ecosystems, climate and Environmental Change
10 Ecological Identification Skills
20 Skills for Environmental Sciences
20 Introduction to Physical Geography
20 Introduction to Environmental Science

Optional modules: 30 credits
10 Animal and Plant Physiology
10 Evolution
10 Population and Community Ecology
20 Introduction to Environmental Geographies
20 New Horizons in Geography
10 The Environmental Challenge

Course Structure - Years 2 and 3
In Years 2 and 3, you can choose to follow one of four specialisms:
- Global Environmental Change
- Environmental Biosciences
- Environmental Geosciences
- Environmental Quality and Technology

All specialisms include common modules that will develop your core skills.

Core modules: 90 credits
10 Animal and Plant Sciences Tutorials
10 Data Analysis
10 Environmental Interpretation Field Course
10 Research Design for Geography and Environmental Science
10 Geographical Information Systems and Remote Sensing
20 Water and Soil Processes in the Environment
20 Environmental Pollution and Quality

Optional modules: 30 credits
10 Plant, Cell and Environment
10 Biology Projects
10 Environmental Biology Practicals
10 Ecosystems in a Changing Global Environment
10 Plant Habitat and Distribution
10 Palaeobiology
10 Conservation Principles
20 Population and Community Ecology 2
10 Symbiosis
20 Atmospheres and Oceans
20 Ice Age Earth
20 Glaciers and Ice Sheets

Unrestricted module choice: 10 credits
Approved Geography or Animal and Plant Science modules or unrestricted modules from other disciplines.

Core modules: 70 credits
20 Professional Skills in Environmental Sciences
10 Issues in Environmental Sciences

EITHER
40 Dissertation for Geography and Environmental Science
OR
20 Animal and Plant Project
AND
20 Animal and Plant Dissertation

Optional modules: 50 credits
10 Global Change
10 Life in Extreme Environments
10 Biology and Ethics
10 Animal Ecology and Behaviour Field Course
10 Evolution of Terrestrial Ecosystems
10 Evolutionary Ecology
10 Sustainable Agro-Ecosystems
10 The Ecology of Landscapes
20 Conservation Issues and Management
20 Future Plants: from laboratory to field
20 Planetary Geoscience
20 New Zealand Field Class
20 Glacial Environments
20 Coastal Processes
20 Dangerous and Dynamic Earth
20 International Field Class
20 Independent Extended Essay
20 Advanced Geospatial Analysis
20 Environmental Policy and Governance

Unrestricted module choice: 10 credits
Approved Geography or Animal and Plant Science modules or unrestricted modules from other disciplines.

The Masters course includes an additional year of training. A major part of this is an independent, in-depth project carried out in an area of your choice. Masters students also get extra training to become professional scientists, learning skills such as writing research papers for publication, explaining research to the press and public, or consultancy report writing.

Whether you choose further academic research, work in industry, or to pursue a career in environmental consultancy, all of the modules on the Masters programme are designed to provide you with the advanced research and professional skills needed to succeed in your chosen career.

For more information: www.sheffield.ac.uk/geography/undergraduate/bsc-masters

A student will take either Route A or B

Route A: Core modules: 90 credits
15 Research Design in Physical Geography and Environmental Science
15 Current Issues in Geography and Environmental Science
60 Research Project

Optional modules: maximum of 30 credits
15 Key Issues in Environmental and Development
15 Understanding Environmental Change
15 Living with Climate Change
15 Sustainable Development: a Critical Investigation

Unrestricted module choice: 15 credits
Optional modules not taken above or unrestricted modules from other disciplines.

Route B Core modules: 120 credits
20 Research Dissertation APS405
10 Advance Biological Analysis
70 Research Project
20 Research and Communication Skills in Biology
Global Environmental Change
This specialism focuses on contemporary changes in physical and ecological systems, and the large-scale processes that drive them, placing a strong emphasis on global warming’s impact on the earth system.

- Quaternary Palaeoenvironments
- World Ecosystems
- Palaeobiology
- The Ecology of Landscapes
- Global Change

Environmental Biosciences
This specialism focuses on the relationships between organisms and their environment, including how organisms function in major ecosystems and drive environmental change. Topics include the effects of pollution, disturbance and management of organisms.

- Environmental Biology
- Plants, Cell and Environment
- Evolutionary Ecology
- Life in Extreme Environments
- Sustainable Agro-Ecosystems

Environmental Geosciences
The impact of physical processes upon ecosystems, habitats and organisms forms the basis of this specialism. Strong emphasis is given to the geological and geomorphological processes that shape the physical and biological environment, using state-of-the-art techniques and software.

- Atmospheres and Oceans
- Applied Remote Sensing and Geographical Information Systems
- Glaciers and Ice Sheets
- Landscape Development and Tectonic Processes

Environmental Quality and Technology
This specialism explores applied aspects of environmental science to ensure students gain awareness of the tools and technologies available for the responsible monitoring, protection and exploitation of the environment. Emphasis is given to the pressure imposed by a growing global population and how this demands us to monitor soil and water quality, to recycle earth’s waste resources, and to improve the quality and function of contaminated land.

- Environmental Pollution and Quality
- Earth and Ecosystem Dynamics
- Natural and Environmental Hazards
- Conservation Issues and Management

General Approach
A key feature of our programmes is their flexibility. None of the specialisms are compulsory. You can choose to study modules from any of the specialisms and to focus on any subjects that interest you.
Enhance your Degree

There are many ways to enhance your undergraduate study and to get more from your time as a student at Sheffield. Most students are able to extend their degree over four years by spending a year in industry or studying abroad. All students are eligible for a range of work placements, research apprenticeships and volunteering opportunities, both within the university and across the world.

Degree with Year Abroad
This course includes an additional year studying abroad at one of our partner universities around the world. The 3 years in Sheffield follow the same structure as all other students, ensuring you do not miss out on fieldtrips and core modules. But you will return to Sheffield in your final year with enhanced study and life skills, and with a truly international experience.

For more information about the Degree with Year Abroad and other opportunities to gain international experience, visit: www.sheffield.ac.uk/studyabroad

Degree with Employment Experience – DEE
A placement year is an excellent opportunity to spend a year in employment as a recognised part of your degree programme. Your placement year can be based with an organisation in the UK or overseas. It allows you to:

- Gain insight into a particular industry
- Take on real responsibility and increase your confidence
- Apply knowledge that you have gained during your degree
- Gain experience of a specific role, company or industry

A year in employment will also enable you to further develop your transferable skills, become more commercially aware and may even secure your entry onto the graduate career ladder.

For more information about the Degree with Employment Experience and other placement opportunities, visit: www.sheffield.ac.uk/placements

SIDshare is a student run social enterprise and NGO. It offers students with an interest in international development the chance to become involved in the sector through formal volunteering roles and projects with our international development partners.

“Studying abroad allowed me to grow as a person both emotionally and academically. It developed my confidence, maturity and self-sufficiency which has definitely broadened my horizons.”

Will, BSc Environmental Science with Year Abroad, National University of Singapore

“The placement has not only bolstered my independence, confidence and maturity, but strengthened my technical skillset too. I have developed skills and gained experiences which have helped me in my final year and will undoubtedly be useful for my career”

Alex, Degree with Employment Experience at the Centre for Ecology and Hydrology
Fieldwork

Fieldwork is central to teaching and research in the environmental sciences. It allows you to apply ideas and skills introduced in your lectures and in the laboratory is vital for the development of the analytical and practical skills required by environmental specialists.

Residential fieldclasses in both Year 1 and 2 of your degree are included within your tuition fees. These fieldclasses currently take place in the UK and Ireland. Local day trips for fieldwork take advantage of Sheffield’s location on the edge of the Peak District National Park as well as our Environment Field Centre.

Optional residential fieldclasses in Year 3 comprise overseas trips that currently include New Zealand and a location in the Global South. These are closely aligned with the research strengths of staff leading the courses and offer students a further international dimension to their studies.

Many students conduct fieldwork as part of their research projects and departmental scholarships are available to support ambitious independent fieldwork. Recent scholarships have supported research into the reintroduction of beavers in the Scottish Highlands, and glaciology in the Swiss Alps.

I much prefer working outdoors and I have gained invaluable experience on the field trips. These trips provided me with an opportunity to apply knowledge and gain substantial research and practical skills. The trips are great fun and a good chance to study new and exciting methods.

Chi, BSc Environmental Science

Case study: New Zealand 2018

New Zealand’s South Island presents the perfect place to study interactions between landscape and environment, with some of the Earth’s most rapid mountain building, highest mass turnover glaciers, largest braided rivers and steepest climatic gradients.

Led by expert and enthusiastic academic staff, students have the chance to apply knowledge gained during their degree to decipher the processes that have shaped the landscape we investigate: the amazing limestone features of Castle Hill, slope processes around Arthur’s Pass and their effects on infrastructure; glacial processes and landforms at Fox and Franz Josef Glaciers; the Waiho River and Franz Josef village flooding risk, and the mysterious Waiho ‘Loop’ landform. For the remainder of the class we are based at Aoraki Mt. Cook, surrounded by the highest peaks in the Southern Alps. Here students carry out 3-day group research projects, with a member of staff available to offer advice on data gathering and analysis. On the final evening in Aoraki Mt. Cook, each group presents their findings to the class. The format of this session is a mini conference where students are encouraged to engage and ask questions of their peers’ research. On our final day we return to Christchurch via the east coast where sediments, eroded from the mountains to the west accumulate in enormous coastal fans.

Students return from this field class with a detailed knowledge and understanding of New Zealand landforms, environmental processes and climate and how these interact over a variety of temporal and spatial scales. Students also improve their ability to effectively and succinctly record observations, interpretations and field results, as well as improved research planning, data collection and oral presentation skills.
Life in Sheffield

The University is a member of the Russell Group of leading UK research universities. Our excellent teaching and research, as part of a genuinely global community, is consistently confirmed by international independent assessments.

The Best for Student Life

Choose the University of Sheffield and you are choosing one of Britain’s finest universities. As a place to live and study, Sheffield is impossible to beat. Our students have voted us top for social life for three years running. (Rated No.1 for student experience in the Russell Group).

There’s all the buzz of city life and the Peak District’s beautiful scenery on your doorstep. In Sheffield you get the best of both worlds.

“I love Sheffield, it’s such a friendly city with a great vibe. There’s always something going on to get involved in, which gives the city a community feel and a non-stop buzz. Sheffield has lots of parks and gardens, making it easy for you to stay in touch with nature. It’s great to be part of a city where you can easily escape the hustle and bustle and retreat to the Peak District.”

Jade, BSc Environmental Science

Graduate Employment and Careers

Our Environmental Science degrees provide excellent preparation for a wide variety of graduate employment sectors as well as further study. We have a range of research and industry partners and this ensures that students engage with the applications of environmental science beyond university.

Graduates have been highly successful in securing employment across the environmental sector. The environmental science skills and in-depth knowledge gained from the courses are attractive to employers. Recent graduates have gone on to careers in environmental consultancies, local government agencies, sustainable energy companies, and conservation bodies such as wildlife trusts and Natural England.

Other graduates have used the transferable skills gained from the course to gain employment opportunities outside of the environmental sciences.

A degree in Environmental Science tells employers that you can analyse situations, develop solutions, handle data, communicate complex issues, deploy scientific techniques and manage projects from start to finish. Recent graduates have used these assets to secure employment in teaching, law, patenting, finance and banking.

For more information about how you can develop your employability skills during your degree, visit: www.sheffield.ac.uk/careers/skills

Number One Students’ Union for the past 10 years

The Times Higher Education Student Experience Survey.
Next Steps

Open Days
If you are interested in our courses you can visit us for a Summer Open Day before you apply. They are a great opportunity to learn more about our courses, to meet our academics and to hear from our students.

We also invite all applicants who are made an offer to attend an Environmental Science Open Day. You will spend time with staff and students and visit the Department of Geography and the Department of Animal and Plant Sciences. These days include research lectures, laboratory practicals and a chance to visit the award winning student accommodation.

www.sheffield.ac.uk/opendays

Fees and Scholarships
The University provides a range of financial bursaries and fee waivers. In addition, we provide merit scholarships that support students from the Sheffield area and provide support for attendance at international summer schools.

www.sheffield.ac.uk/undergraduate/finance/help

Accommodation
The University guarantees a place in our award winning accommodation for all first year students.

www.sheffield.ac.uk/accommodation

Contact Us
Our dedicated staff will answer any questions you may have. Call or email us on:

T: +44 (0)114 222 7900
E: geography-admissions@sheffield.ac.uk

www.sheffield.ac.uk/undergraduate/Finance/help