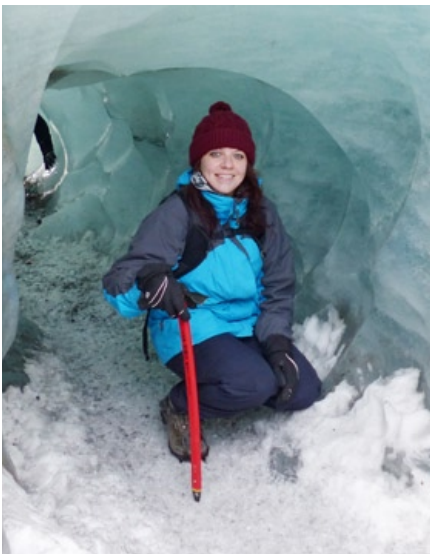


Environmental & Earth Sciences

Undergraduate Prospectus



Environmental and Earth Sciences at Lancaster Environment Centre

Contents

2	Science and the Environment
3	Environmental and Earth Sciences (at LEC)
4	The Degree Programmes
5	Teaching & Learning
6	Environmental Science
8	Earth & Environmental Science
10	Environmental Science & Technology
12	Fieldwork
14	Studying Abroad
15	Mature and International Students
16	Careers and Further Study
18	The University
19	Lancaster and the Local Area
20	Admissions Details
22	What do Our Graduates Think?
23	Visiting Us
	Contact Addresses (inside back cover)



QR code for our website:
Scan me with your phone!



Welcome to **Lancaster**



Environmental and Earth Sciences Undergraduate Students and Staff

Choosing Lancaster University and the Lancaster Environment Centre means that you will join a department that has been ranked 6th in the UK* and within the top 15% in the world** for environmental and Earth sciences. Lancaster University itself is a top ten UK university and is placed in the top one percent of universities globally. Our degrees focus on understanding the fascinating fields of environmental and Earth sciences, whilst providing you with the skills and experience to follow the 99% of graduates from across our programmes in 2014-2012 who were in employment or further graduate-level study six months after completing their degree.

The excellence of the environment-focussed degrees we offer at Lancaster is built upon:

- **The links between our world-leading research and teaching.** The Lancaster Environment Centre was ranked 3rd in the UK for the real-world impact of our research. Our staff ensure that our students have access to expertise and facilities that are at the cutting-edge of the environmental and Earth sciences.
- **Our flexible and interdisciplinary degree programmes.** Select from a diverse range of modules drawn from across the Lancaster Environment Centre and the wider University to create a degree that matches your interests and career aspirations.
- **The quality of our teaching.** We received the highest possible score of 'Full Confidence' in the 2014 University teaching assessment. Our staff are highly enthusiastic and dedicated, are sympathetic to student needs and appreciate the wide range of skills and experience of the students who join us.
- **Our focus on the employability of our graduates.** Across our degree programmes, 74% of our 2014-2012 graduates who were in employment moved into professional or managerial jobs within six months of completing their degrees. Registering for the Lancaster Award, which formally recognises and rewards voluntary work, work experience and participation in careers training programmes, enhances the future employment prospects of our students.
- **The emphasis given to practical study.** We run regular field visits to sites of outstanding natural beauty and scientific interest on our doorstep, including the Lake District, Yorkshire Dales, Morecambe Bay and the Forest of Bowland. In addition, we offer optional field modules such as examining glaciers and landscapes in Iceland, geomorphology in northern Spain, water and environmental management in Croatia, and volcanic processes on Mount Etna in Sicily. Dissertation students often have the opportunity to work with staff on summer research visits, for example in Borneo or the Himalayas.
- **Our links to business and industry.** Work with organisations outside the University during your degree through our Enterprise and Business Partnerships team, for example as part of your dissertation project.

* The Guardian University Guide 2015 ** QS World University Rankings 2014



Science and the **Environment**

Awareness and concern about major global challenges, including climate change, water and soil pollution, food production and the management of hazards such as flooding or volcanic eruptions, are mounting. The environmental and the Earth sciences uniquely equip you to address such challenges, by applying your understanding and practical experience from across the geological, geographical, physical, chemical, biological and social sciences. For example, to address the dangers of a pollutant it is necessary to understand the chemical and physical processes that lead to its formation and possible destruction, its transport around the Earth and its biological and human health impacts. Our graduates are strongly positioned to deal with this and other key challenges facing society. Our Department offered the first environmental science degree in the country in the 1960s. Since then, our staff have helped to shape this rapidly evolving subject, both within the UK and internationally. The environmental and the Earth science degrees on offer to you at Lancaster combine a long track record of excellence with new teaching approaches and material, delivered by staff who work at the cutting edge of these fields.

2



Sediment sampling from the bottom of lakes in the Lake District

Our world-leading staff teach:

- volcanology
- water quality
- hydrology and hydrogeology
- natural resource management
- atmospheric chemistry
- oceanography
- lake and river ecology
- environmental radioactivity
- meteorology
- climatology
- modelling natural and man-made systems
- environmental pollution
- bioremediation
- ecotoxicology
- soil science
- environmental hazards
- environmental management
- geochronology
- tectonics and sedimentation
- biodiversity conservation
- GIS and remote sensing
- geophysics
- glaciology



Environmental & Earth Sciences at the **Lancaster Environment Centre**

Our degree programmes at Lancaster are run by the Lancaster Environment Centre (LEC), an internationally recognised centre for teaching and research related to the environment. Spanning Environmental Science, Geography and Biological Science, LEC provides flexibility and choice to students, for example in the range of optional modules available to you to study as part of your degree.

LEC houses the Enterprise and Business Partnerships team, including over 20 environment-focussed businesses and their office space. This offers students direct experience of translating research into practical solutions, for example by working in partnership with a business as part of your dissertation project. The Centre for Ecology and Hydrology, a government-funded research institute, is also located within LEC, providing experience for our students of the links between research and the development of policy and practice related to management of the environment.

Our research and teaching are closely linked within LEC. The Lancaster Environment Centre was rated highly in the UK for research in Earth Systems and Environmental Science in the 2014 Research Excellence Framework (REF). The high quality of the research conducted by our staff means that our students learn material that is at the cutting-edge of the field. There are also opportunities for students to work on our research projects, for example during your dissertation project.

Research in LEC is ranked 3rd in the UK for real-world impact, with 82% being internationally excellent and world leading. REF2014

3

'6th best University in the UK for Geography and Environmental Science'

The Guardian University Guide 2015

'100% of graduates who took part in the survey were satisfied with the overall quality of their course'

2014 National Student Survey

'FULL CONFIDENCE' the top grade in the latest teaching assessment.

Periodic Quality Review 2014



The Degree Programmes

Our undergraduate degree programmes offer a complete range of subjects relating to the environmental and Earth sciences, covering both three- and four-year options. So, whatever your specific interests, there is a degree programme suitable for you. Even within the individual degrees, optional modules provide a great deal of flexibility in subject content.

The Lancaster Environment Centre offers three main environment-focussed degrees:

- **BSc/MSci Environmental Science**
- **BSc/MSci Earth & Environmental Science**
- **BSc/MSci (with Professional Experience) Environmental Science & Technology**

Our Environmental Science and Earth & Environmental Science degrees are offered with a North American, Australasian or Icelandic study abroad option (depending on the degree you choose), where the second year is spent in a partner university. Importantly, these

international options are still three-year (BSc) or four-year (MSci) programmes, with grades from the year abroad counting towards your final degree – so this is not an additional year, but one which offers exciting academic and cultural opportunities within both three-year and four-year schemes. There are also potential financial advantages associated with spending a year studying abroad. For further details of the financial arrangements for study abroad students, see page 14.

We offer four-year Master of Science (MSci) programmes across our degree schemes. These are extended versions of the BSc programmes that allow Masters-level study of your chosen topics.

We also offer a wide range of postgraduate Masters programmes that allow you to build on your undergraduate degree. For details see:

<http://www.lancaster.ac.uk/lec/postgraduate/>



New LEC/BLS teaching laboratories, completed Spring 2015

Teaching and Learning

Our degree programmes at Lancaster are highly flexible and adaptable, enabling you to choose modules as the degree progresses and you understand more about the subjects you are studying. Modules are available to you from across the University, meaning that you can explore a diversity of subjects from physics to French. Alternatively, you can focus on environmental or Earth science from day one, selecting up to 14 of the 15 modules you take in your first year from within these sciences.

The first year of your degree will focus on:

- geology and the natural hazards associated with geological processes, including volcanic hazards;
- understanding and measuring the movement and storage of water within soils, rivers and groundwater aquifers;
- the production, transport, degradation and effects of chemical pollutants in the environment;
- understanding atmospheric processes and the role these processes play in determining weather and the changing climate;
- modules designed specifically for those without maths or chemistry beyond GCSE, providing you with the background to support you through the rest of your degree.

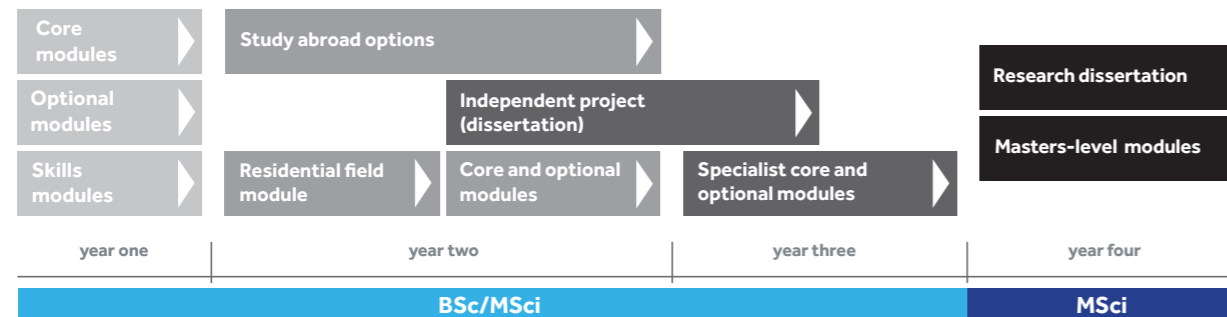
In addition, you will take modules that deal with a number of globally-significant environmental challenges, including producing sufficient food for a growing global population, meeting future demands for energy, adapting to floods and droughts and preventing or mitigating pollution of water and soil resources. Further information regarding the modules available within our degrees, including beyond the first year, is available at: www.lancaster.ac.uk/lec/undergraduate/courses/ by following the link to your course of interest followed by the 'Modules' tab on the relevant page. In addition, Lancaster has developed the iLancaster mobile app, for more information

see: <http://ilancasterinfo.lancs.ac.uk/> If you apply to one of our degrees and are made an offer, you will be able to access the app which provides detailed information about the modules available to you as part of our degrees.

The vast majority of our modules include practical sessions alongside lectures. Practicals can be laboratory classes in our new £4 million teaching laboratories, computer-modelling sessions or field trips. Day field trips within the UK include practical experience of taking environmental measurements, for example, water sampling on Windermere in the Lake District, measuring stream discharge in caves in the Yorkshire Dales or estimating erosion rates and understanding glacial landforms in the Yorkshire Dales. See page 12 for examples of the international fieldtrips that we offer as part of our degrees.

The assessment process varies across modules, but includes laboratory reports, essays, independent project reports, group presentations, multiple-choice tests and exams. Assessment is an on-going process, rather than being left solely until the end of the module. This means we are able to offer feedback to you throughout your degree and, equally as importantly, it relieves pressure on you when modules are examined at the end of each year.

BSc/MSci Degree Structure



Optional modules are available for you to select from other degree programmes across LEC and the University:

- Ecology/Biology
- Geography
- Engineering
- Mathematics
- Physics
- Chemistry



A module:

Teaching courses run from 5 to 20 weeks and we refer to each of these as a module. Each module is self-contained and consists of a combination of lectures and practicals (some of which may involve field work). Your learning is also supported by an academic tutorial system from the start of your degree.



Student using an electromagnetic device to survey the electrical conductivity below the bed of Ringkøbing Fjord, Denmark.

Environmental Science

BSc Environmental Science/Study Abroad (F754)

BSc Environmental Science (F750)

The Environmental Science degree is the longest running programme of its kind in the UK and is one of our most popular degrees. The programme is interdisciplinary and covers both natural and man-made environments with the aims of understanding:

- how the environment has evolved to its current state;
- the main factors and processes controlling today's environment;
- how environmental conditions may change in the future.

You also learn how to apply this knowledge to practical problems, for example in pollution control and hazard mitigation. In common with all our degrees, you will be trained in communication skills, information technology, data handling and environmental sampling and analysis. Considerable weight is placed upon these transferable skills by potential employers.

MSci Environmental Science/Study Abroad (F851)

MSci Environmental Science (F850)

The Environmental Science degree is suitable for students with a wide range of backgrounds, but at least one A-level science subject is required. We run a range of maths and chemistry modules in the first year to ensure that students without these subjects beyond GCSE have a solid foundation for the rest of the degree. These are user friendly modules and cover topics on a need-to-know basis.

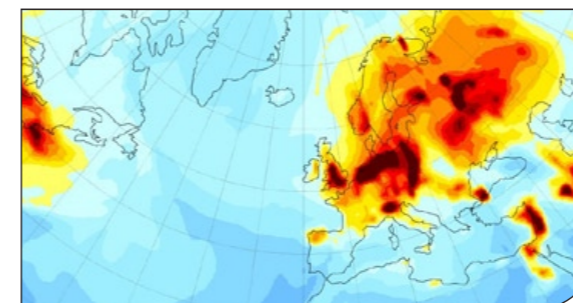
The degree offers choice and flexibility allowing you to take a wide range of modules or to specialise in a particular area of environmental science that interests you. This specialisation can be advantageous if you want to undertake postgraduate study or are interested in a specific career path. Students taking the four-year MSci option conduct a research dissertation in their fourth year, alongside selecting from a wide range of masters-level modules.



Using mini-helicopters as aerial platforms from which to monitor land use within a catchment.

Key topics that you will cover:

- Global climate change: past and future environments; natural and man-made factors affecting climate change; the Greenhouse Effect.
- Earth's surface: the effect of wind, rain, rivers, ice and Man on the landscape.
- Earth's interior: plate tectonics; the Earth's core and geomagnetism; the formation of ocean basins and continents.
- Environmental risk and management: making decisions in an uncertain environment.
- Hydrology: the water cycle from clouds through rivers to the oceans, and back again.
- Biogeochemistry: how chemical and biological processes govern the flow of matter, energy and chemical elements through the different compartments of the Earth system.



Atmospheric carbon monoxide concentration over Europe and the N. Atlantic. Warm colours show areas of higher concentration.

- The atmosphere: atmospheric circulation and weather; dispersion of industrial and volcanic plumes into the atmosphere; the Ozone Hole; El Niño.
- Predicting the future: introducing the concepts of dynamic modelling of environmental systems such as river catchments at risk from flooding and contamination by pollutants.
- Effects of environmental pollution: the behaviour of heavy metals, pesticides and radioactivity in soil, air and water.

Modules

Year 1, Core

Global Environmental Challenges
Environmental Processes and Systems
Geology
The Earth's Interior
Biogeochemical Cycles
Hydrology: Water in the Environment
Atmosphere, Weather and Climate
Natural Hazards

Optional/Skills

Numerical Skills I
Introduction to Environmental Chemistry
Numerical Skills II
...plus choice across the university

Year 2, Core

Environmental Field Course
Data Collection and Analysis
Catchment Hydrology
Aquatic Biogeochemistry
Atmospheric Science
Environmental Data Visualisation and Analysis

Optional

Geoscience in Practice
Energy, Economy and the Environment
Populations to Ecosystems
Investigating Mediterranean Environments Field Module
Soil Science
Introduction to Eco-Innovation
Principles of Biodiversity Conservation

Year 3

Dissertation project

Examples of Options

Hydrological Processes Field Module
Lakes, Rivers and Estuaries
Global Change and the Earth System
Dynamic Earth
Causes and Consequences of
Environmental Radioactivity
Water Resource Management
Geological Hazards
Introduction to Geophysical Techniques
Climate and Society
Environmental Remote Sensing and Image Processing
Global Change Biology: Challenges and Solutions
Glacial Systems
Coastal Processes

Year 4 (MSci only)

Research Dissertation Project

Optional

Pollution Microbiology
Chemical Risk Assessment
Risk Assessment and Management
Environmental Toxicology
Modelling Environmental Processes
Environmental Impact Assessment
Contaminated Land Remediation
Environmental Aspects of Renewable Energy
... plus a range of masters-level modules

(Modules subject to change)



Earth science fieldwork in the Yorkshire Dales and on Mount Etna, Sicily.

Earth & Environmental Science

BSc Earth & Environmental Science/Study Abroad (FF6V)

BSc Earth & Environmental Science (FF68)

MSci Earth & Environmental Science/Study Abroad (FF86)

MSci Earth & Environmental Science (4R71)

The Earth & Environmental Science degree focuses on Earth processes and emphasis is placed on fieldwork and hands-on learning. It covers areas as diverse as geological mapping, atmospheric processes and tectonics and sedimentation. This degree draws on the considerable expertise of a number of our staff who specialise in Earth science and includes volcanologists, geophysicists and hydrogeologists. Many of the components of the Environmental Science degree will be open to you, but as you progress into your second and third years you will be able to study specialist Earth science modules. Those continuing on the MSci programme have the opportunity for further, in-depth study in their fourth year, involving a research dissertation project, physical volcanology module and a choice of masters-level modules across a wide range of subjects.

As part of the Earth & Environmental Science programmes, we run a number of residential field modules. One popular overseas trip is the volcanic processes field module on Mount Etna in Sicily, studying volcanic processes



and how the local population can manage the impacts of volcanic phenomena. We take full advantage of Lancaster's location at the heart of the fells and dales of northwest England and hold both day trips and residential field modules in the Lake District and Yorkshire Dales.

We run modules to equip you with valuable transferable skills, such as scientific writing, IT and presentation skills. For the Earth sciences, you will also learn computer-based skills, which are central for understanding, predicting and testing geophysical and environmental systems. We run modules in computer-based programming and you can also use specialised modelling software. We also provide you with the skills required for data handling and processing, particularly relevant for the large quantities of digital data generated through satellite imagery for example.

Modules

Year 1, Core

Global Environmental Challenges
Environmental Processes and Systems
Geology
The Earth's Interior
Biogeochemical Cycles
Hydrology: Water in the Environment
Atmosphere, Weather and Climate
Natural Hazards

Plus a range of optional and skills modules

Year 2, Core

Environmental Field Course
Data Collection and Analysis
Geoscience in Practice
Soil Science
Aquatic Biogeochemistry
Geological Mapping Fieldcourse

Optional

Catchment Hydrology
Populations to Ecosystems
Investigating Mediterranean Environments Fieldcourse
Atmospheric Science
Energy, Economy and the Environment
Introduction to Eco-Innovation
Principles of Biodiversity Conservation
Environmental Data Visualisation and Analysis

Year 3, Core

Dynamic Earth
Introduction to Geophysical Techniques
Dissertation project

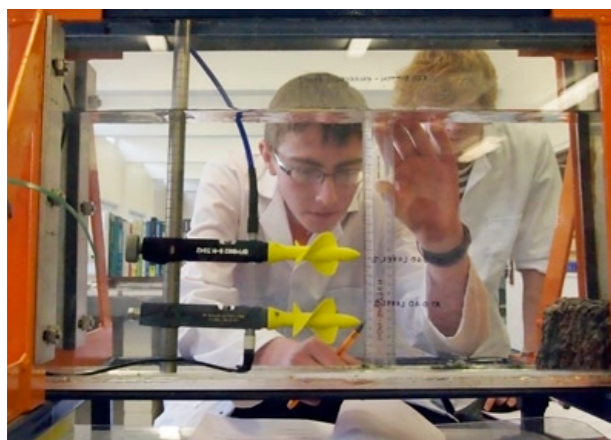
Examples of Options

Volcanic Processes Field Course
Hydrological Processes Field Module
Environmental Magnetism
Global Change and the Earth System
Environmental Remote Sensing and Image Processing
Causes and Consequences of
Environmental Radioactivity
Water Resource Management
Geological Hazards
Climate and Society
Global Change Biology: Challenges and Solutions
Glacial Systems
Coastal Processes

Year 4 (MSci only)

Physical Volcanology
Research Dissertation Project
A wide-range of masters-level modules

(Modules subject to change)



Environmental Science & Technology

BSc Environmental Science & Technology (F751)

MSci Environmental Science & Technology (Professional Experience) (7Y53)

Our Environmental Science & Technology degree is an interdisciplinary programme which focuses on globally important environmental management challenges and solutions to environmental issues. The degree is designed to benefit UK and overseas students who seek experience of environmental processes and technologies, and who are interested in employment in the wider environmental sector in fields such as water and energy. The degree focuses on the innovative pathways with business that are necessary in order to provide sustainable global solutions. A key feature of the programme is an internship with an environmental technology company based in the UK or abroad. The programme combines study of core environmental science disciplines with those of either chemistry or mechanical or electrical

engineering to provide a firm foundation for the application of environmental principles.

You will begin your degree studying modules such as Global Environmental Challenges, Environmental Processes & Systems and Hydrological Processes. You may take an engineering pathway, supplementing your study with modules in mechanical or electrical engineering, or if you have taken Chemistry to A-level or equivalent you may follow a chemistry pathway. You will then move on to more specialist second year modules such as Energy Technologies and Enterprise for the Environment. In your third year you will complete a research project linked to an environmental technology company and choose from a wide range

of modules such as Water Resource Management, Environmental Radioactivity and Hydrogeology.

Our MSci in Environmental Science and Technology (Professional Experience) builds on the three-year BSc degree by providing a fourth year of masters-level study and industrial experience. In this fourth year you will study masters-level modules such as Pollution Microbiology and Chemical Risk Assessment. You will also undertake a dissertation and a ten-week placement with an environmental technology company. The internship will provide valuable first-hand experience of work in the environmental sector, and will be generated by Lancaster Environment Centre's unique in-house business unit, who accommodate over 20 companies and have relationships with companies of all sizes around the world.

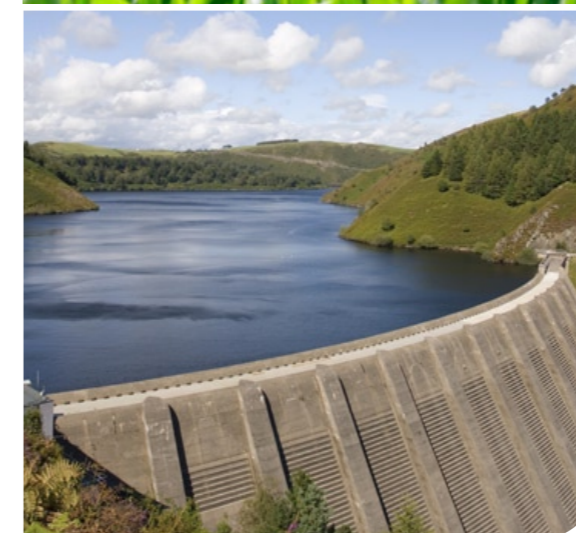


Photo above, Dr. Nick Chappell ©

Modules

Year 1, Core

Global Environmental Challenges
Environmental Processes and Systems
The Earth's Interior
Biogeochemical Cycles
Hydrology: Water in the Environment
Atmosphere, Weather and Climate
Natural Hazards

Chemistry pathway

Introduction to Organic Chemistry
Physical Chemistry for Life Sciences
Introduction to Spectroscopy
Analytical Chemistry
Inorganic Chemistry

Engineering pathway

Transport technology
Energy, Chemical and Sustainable Engineering

Mechanical/Electrical Options:

Strength and Materials
The World of Manufacture
Design, Innovation and 3-D Thinking
Electrical and Electronics Fundamentals
Sensing and Signals
The Digital Domain

Year 2, Core

Environmental Field Course
Introduction to Eco-Innovation
Environmental Data Visualisation and Analysis
Catchment Hydrology
Energy, Economy and the Environment
Data Collection and Analysis

Optional

Geoscience in Practice
Atmospheric Science
Soil Science
... plus a range of chemistry/engineering options

Year 3, Core

Dissertation with Work Placement
Environmental Decision Making: Energy
Controversies

Optional

Water Resource Management
Causes and Consequences of
Environmental Radioactivity
Introduction to Geophysical Techniques
Climate and Society
... plus a wide range of optional modules

Year 4 (MSci only)

Industrial Placement
Research Dissertation Project

Optional

Pollution Microbiology
Chemical Risk Assessment
Risk Assessment and Management
Environmental Toxicology
Modelling Environmental Processes
Environmental Impact Assessment
Contaminated Land Remediation
Environmental Aspects of Renewable Energy
... plus a range of master-level modules

(Modules subject to change)



In both the second and third years, students may embark on several residential modules but focussed on a single subject.* These include a field module examining glaciers and landscapes in Iceland, a geomorphology field module in northern Spain, a field module studying water and environmental management in Croatia, a hydrology field module at Slapton, Devon and geology field modules in the Yorkshire Dales, Lake District and the Isle of Mull. Earth science students may also have the option of a volcanology module on the active Mount Etna in Sicily.

Dissertation Project

For many students, the independent dissertation project that is selected in the middle of the second year is a major turning point. This is an opportunity to work on a subject that really interests you. Some projects are carried out in our research laboratories, whilst others may involve computer-based modelling for example of the climate system. Many students select projects with a substantial fieldwork component, either in the UK or abroad. For example, Earth & Environmental Science students James Tolley, Lisa White and Georgia Phillipson have conducted projects in the Himalayas on mountain-belt tectonics, while Ben Thorne, Chris Dixon and Hayley Geldart (Environmental Science) have conducted their projects at the Utila Centre for marine ecology in Honduras as part of Operation Wallacea. Other students, for example Sam Dickinson, have studied rain forest hydrology in Borneo.

Fieldwork: UK & Beyond...



Fieldwork is an essential part of all our degree programmes. It gives students first hand experience of data gathering and problem solving in an outdoor setting well away from the confines of a lecture theatre or laboratory. We make the most of our superb location with trips to the nearby Lake District and the Yorkshire Dales. In addition to visiting the beautiful countryside surrounding Lancaster, there are visits to other sites of environmental significance, such as the impressive nuclear reprocessing plant at Sellafield.



All our degrees include residential modules, where there is uninterrupted focus on fieldwork for a week. Importantly, fieldwork is also timeout from the more formal University setting. These modules are designed to be fun and stimulating, with time for relaxation after a day in the field and for forging new friendships. Teaching and learning in the field is a critical element of our degree programmes. However, a field module also provides opportunities for broader discussion between students and staff, perhaps related to future careers or the options for higher degree training.

One of the most popular residential modules is the week spent at Carrock Fell, located in the beautiful Northeast Lake District. The field module is an opportunity for relaxed and informal contact between staff and students, with post-graduate students also coming along to provide additional guidance in the field.

Lancaster students on the Isle of Mull



Skogafoss, Southern Iceland



* Places on a number of these field courses are limited and subject to availability.

Studying Abroad



We offer students many opportunities to study abroad. It helps to broaden your academic horizons and enhance your job prospects, as well as giving you an exciting cultural experience!

The Study Abroad Programme

You can spend your second year at university abroad, studying similar modules to those offered at Lancaster, and still complete your BSc in just three years or your MSci in four years. We offer placements at world-class universities in the USA, Canada, Australia, New Zealand and Europe. The choice of destinations varies a little from year to year and depends on the degree programme that you take. For example, the University of Iceland in Reykjavik is an option for BSc/MSci Earth & Environmental Science students - a fantastic opportunity for anyone interested in volcanic or glacial processes.

Erasmus Exchanges (Mainland Europe)

We offer exciting opportunities to do a dissertation project with an English-speaking research group in Switzerland (ETH Zurich), the Czech Republic (Masaryk University, Czech University of Life Sciences), or Croatia (University of Zagreb), for three months at the end of Year 2. Alternatively, you can take courses taught in English at one of our partner universities in the Netherlands (e.g. Wageningen University or University van Amsterdam) for four months at the start of Year 3.

Will it cost more to study abroad?

If you spend a full year abroad, whether in Europe or elsewhere, Lancaster tuition fees are reduced to 15%* and there are no tuition fees to pay at your host University. Nevertheless, there can be some specific expenses to consider as well as general living costs such as flights, insurance, obtaining a visa, and purchasing text books. Financial help is available in the form of means-tested government travel grants and you can apply for a larger loan from the Student Loans Company for maintenance. Students studying abroad in the EU (including those spending a whole year in Iceland) can apply for an Erasmus+ grant as a contribution to the costs of studying abroad. We have a dedicated Study Abroad team in the International Office and a Study Abroad adviser in the Lancaster Environment Centre to help you with all aspects of studying abroad.

* Correct as of April 2015, although subject to any future change in government legislation. Students who spend only one semester abroad continue to pay full fees to Lancaster.

BSc Environmental Science/Study Abroad (F754)

BSc Earth & Environmental Science/Study Abroad (FF6V)

MSci Environmental Science/Study Abroad (F851)

MSci Earth & Environmental Science/Study Abroad (FF86)

There is no special UCAS code for 3-month Erasmus exchanges - they are organised on an individual basis during your second year at Lancaster.

Mature & International Students



Life-long learning is an emerging theme today and many people now decide to broaden their experience in between leaving school and coming to university. Even if the break in formal education is many years, we find that mature students are well motivated by the Lancaster experience and are successful in their studies.

For mature students, we tailor our entry requirements to take account of the wealth of experience they have gained elsewhere. Our offers will be based on a combination of factors, examined on a case-by-case basis.

Whether renting or buying a house, accommodation and the cost of living are affordable which increases your flexibility whilst studying. For those with dependents, there is a subsidised preschool facility at the university and Lancashire's primary and secondary education in the surrounding area are second to none. Lancaster and the surrounding region, including the Lakes and Dales, are quite simply very attractive places to live and work.

International Students

Lancaster is home to almost 3000 international students from over 100 countries. The reason why we have one of the highest proportions of overseas students of any British university is that our reputation for high quality teaching and research is truly international.

Lancaster University has an International Office that is dedicated to making your time here as productive as possible, both academically and socially. In addition to those overseas students choosing to do their full degree with the Lancaster Environment Centre, we operate a student exchange programme for students from North America, Hong Kong, Singapore and Australia.



The minimum English requirement for all students who don't have English as their first language is an IELTS score of 6.0.

Careers & Further Study

Over 98% of our 2014-2012 graduates were employed or in further graduate-level study six months after finishing their degrees.

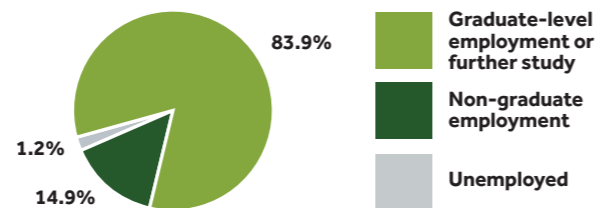
There are a wide range of postgraduate Masters-level programmes available to you once you graduate, including opportunities to continue to study at Lancaster, and many Ph.D projects are offered each year across the Lancaster Environment Centre.

Our flexible degree programmes are designed to provide you with both the core knowledge required by employers in the environmental and Earth science fields, and the literacy, numeracy, IT, and problem solving skills desired by almost every profession. You can tailor your degree to suit the environmental occupation you wish to pursue, whilst also gaining the flexibility and transferable skills necessary for a career completely outside the environmental sector.

Our graduates can move into careers with a wide range of employers. For example, the skills of our

graduates are sought after by UK water companies, the Environment Agency and international environmental consultancies and environmental engineering firms. Alternatively, those graduates who focus their studies towards modelling and forecasting, for instance, may work for the insurance industry looking at environmental risk prediction or for the Met Office looking at weather forecasting. Our graduates can also establish careers in the environmental sector with local and regional councils. With increasing UK, European and global environmental regulation, most employers whose activities have environmental implications employ specialist environmental advisors. The international nature of many environmental issues means that your degree training is of relevance worldwide and you will be desirable to many international employers.

Destinations of Leavers from Higher Education statistics for our 2014-2012 graduates.



Wordle based on the job titles for our graduates between 2012 and 2014 who moved into graduate-level employment or further study. Size of the text is proportional to the number of graduates who moved into positions with this title after graduating from Lancaster.

Careers & Further Study

All UK graduates are surveyed 6 months after graduation to find out what they are doing. This Destinations of Leavers from Higher Education survey can be used to compare across subject areas and universities. These data are available to all via the Unistats web site (<http://unistats.com>) and are used in the calculations for most league tables.

In recent years, with the increase in graduate numbers and declining economic opportunities, a greater proportion of graduates choose to progress to further study. Approximately 41% of our 2014-2012 graduates chose this option, with many now taking postgraduate Masters degrees at Lancaster and other institutions across the world. You can find out more about Lancaster's environment-orientated Masters degree programmes at:

www.lancaster.ac.uk/lec/postgraduate/

Approximately 74% of our 2014-2012 graduates who were in employment six months after completing their degree were in graduate-level roles. Just over 1% of our 2014-2012 graduates were unemployed six months after graduating. Year after year, our graduates are highly successful at gaining opportunities to move into graduate-level employment or further study.

We believe strongly that your degree programme should offer opportunities for you to gain skills and experience that will enhance your employability following graduation. Examples of the opportunities we offer undergraduates in this context include:



EBP offices, LECIII

Dissertations and modules in partnership with the Enterprise and Business Partnerships (EBP) team within LEC

The EBP team (www.lancaster.ac.uk/lec/business/) has links to over 20 environmental companies who have office space on site and contacts with over

500 companies across the UK. The EBP team runs a number of taught modules focussed on the links between enterprise and the environment, as well as offering dissertation projects linked with external organisations to provide students with embedded work experience at graduate level.

Paid internships

Full-time summer internships, alongside part-time internships at other times of the year, are offered through the Faculty of Science and Technology www.lancaster.ac.uk/sci-tech/internships/students/. These are exciting opportunities for you to gain experience and to build your academic and transferable skills before graduating.

The Lancaster Award

Registering for Lancaster Award provides a way to formally recognise careers training, work experience and community engagement that you undertake alongside your degree. Employers place great value in the skills and experience you gain from these activities.



Science Research Assistant, Stopford Projects, Ltd
Lois Ricketts

After graduating in Environmental Science, Lois began work as a research assistant with Stopford Projects Ltd, a multidisciplinary engineering, environment and project management consultancy with offices based within the EBP. Lois's work involves investigating novel controlled-release mechanisms for the delivery of agrochemicals in horticulture and combines laboratory work (skills developed during her dissertation project investigating chemical pollutants), desk-based research and project meetings with clients.



The University

Lancaster is one of Britain's top universities. It is consistently ranked amongst the leading universities in terms of both teaching and research out of over 100 higher education institutes in the UK. Set in 250 acres of beautiful parkland on the southern outskirts of the city, we are just 3 hours from London by train and less than 40 minutes away from the Lake District and Yorkshire Dales National Parks.

Some 12000 students from over 100 countries are currently enrolled at the University to experience an exciting learning and social environment. Our excellence in both teaching and research means you can expect the highest possible standards, and extensive new library and computing facilities have been created to further enhance your learning experience.

Lancaster retained the "Best University Halls" award in the **National Student Housing Survey 2014** for the fifth consecutive year. It provides comfortable on site accommodation, which is among the cheapest in the country, and there are extensive shopping facilities, bars, cafes, and restaurants for your day-to-day needs. Perhaps you might join one of the hundreds of clubs run by students, or make use of the full range of indoor and outdoor leisure facilities on offer.

At Lancaster the college and department systems combine to give you the best possible opportunity to achieve your potential. The staff to student ratio is high, with an emphasis placed on small group teaching throughout your degree. The colleges operate a mentoring system, and our welfare service for special needs students has been awarded the Queen's Anniversary Prize. According to a recent survey conducted by the Heads of Public Schools, the campus is the safest in the UK.

18

New LEC/BLS teaching laboratories



Photo: J. Jennings



Lancaster and the Local Area

Lancaster is a vibrant cultural and economic centre offering an excellent range of leisure and other facilities, all within a friendly, historic city-centre setting. Whether you are after the big name high street retailers or something from the multitude of back street shops and market stalls, Lancaster has it.

The city boasts numerous bars, pubs and night-clubs, whilst the students' union warehouse venue, The Sugarhouse, receives bands on tour and regular comedy nights, see: <http://thesugarhouse.co.uk/>

Each summer the city council sponsors music and drama festivals that take over the city centre attracting up and coming artists, including a major annual festival of world music. A number of bars have weekly blues, folk and jazz nights, culminating in the Lancaster Jazz festival. In addition, the University hosts an annual concert series of classical music that is often featured on Radio 3. During 'Extravaganza week', traditionally held in the last week of the summer term, each college holds a party with many top acts and entertainers visiting the campus.

The Dukes Theatre in Lancaster and the Nuffield Theatre at the University both lay on high quality cinema, drama, dance and comedy. The Dukes also produces the nationally renowned Promenade Plays in Williamson Park each summer. There are also large, multi-screen cinema complexes situated in both Lancaster ('Vue') and Morecambe ('Apollo'). There are two museums and a number of small galleries presenting work of regional artists. The University houses the Peter Scott Gallery and the Ruskin Collection, and each year the city stages a literature festival.

Lancaster's restaurants offer you a wide range of styles including French, Indian, Italian, Thai and vegetarian, with traditional pubs selling good food and offering a wide selection of beers. Those wishing to live in Lancaster will find that both accommodation and the cost of living are affordable. If you are looking to get away into the great outdoors, then Lancaster is just 5 miles from both the Forest of Bowland and the coast, whilst the Lake District and Yorkshire Dales National Parks are less than 40 minutes by train or car with the best walking, climbing, caving and mountain biking terrain in England.



19

Admission Details

TYPICAL REQUIREMENTS

All BSc degree schemes in this booklet without a study abroad option:

A-levels: ABB, candidates will normally be expected to have at least one science at A-level. For Environmental Science and Technology, candidates need Maths, and Chemistry is required to take the Chemistry Pathway.

Scottish Highers: BBBB

International Bacc: 32 pts overall with 16 from best three HL courses

BTEC: Overall grades of DDM with distinctions in 3 modules

HNC/HND: Pass

Mature students: Enquiries welcome; students on Access to Science courses are encouraged to apply.

For definitive details see <http://www.lancaster.ac.uk/lec/undergraduate>

All BSc degree schemes with a study abroad option and all MSci degree schemes in this booklet:

A-levels: AAB, candidates will normally be expected to have at least one science at A-level. For Environmental Science and Technology, candidates need Maths, and Chemistry is required to take the Chemistry Pathway.

Scottish Highers: ABBBB

International Bacc: 35 pts overall with 16 from best three HL courses

BTEC: Overall grades of DDD/DDM with distinction in 9 modules

HNC/HND: Pass

Mature students: Enquiries welcome; students on Access to Science courses are encouraged to apply.

For definitive details see <http://www.lancaster.ac.uk/lec/undergraduate>

A-LEVELS and SCOTTISH HIGHERS

We require students to have at least one A-level or Higher in a science subject, which could include:

Biology
Chemistry
Environmental Science
Geography
Geology
Maths
Physics
Psychology
Statistics

Also, applicants must have GCSE (or equivalent) Maths (B) and English (C)

This does not mean that other subjects are precluded, but we require applicants with at least one science.

Environmental Science & Technology requires Maths, and Chemistry is needed for the optional Chemistry pathway.

OTHER QUALIFICATIONS

We welcome applications from students with nonstandard qualifications. Mature students should contact us directly to discuss their circumstances. All types of previous training and experience will be taken into account, including Access to Science courses. Students taking BTEC should have merits in all relevant subjects. International students are normally required to have appropriate International Baccalaureate qualifications or equivalent. If in doubt about anything, please get in touch with us.

OpenPlus



If you do not meet these entry requirements you may be able to join the OpenPlus scheme we are running with the Open University (OU). The scheme involves

part-time study, with the OU, followed by two years' full-time study with us to complete degree programmes in:

BSc Environmental Science (F750)

BSc Earth & Environmental Science (FF68)

2 years study with the OU:

S104 Exploring Science

S151 Maths for Science

SXF206 Environmental Science

Laboratory Skills for Science

Years 2 and 3 of the Lancaster degree

Applications to OpenPlus are not made through UCAS, but directly through Lancaster and the Open University. Visit <http://www.open.ac.uk/choose/openplus/> for more details on how to apply or contact us at Lancaster.



Applications

Applications for all of our undergraduate degree programmes must be made through the Universities and Colleges Admissions Service (UCAS), using the online service via: <http://www.ucas.ac.uk>

Mature and overseas applicants

We welcome applications from mature or overseas students or those offering relevant subjects such as BTEC, Diplomas or other awards. Your application will be considered individually on its merits and in relation to the University's guidance on equivalence to A levels.

Bursaries and Scholarships



Lancaster University has an extensive programme of financial support and funding for students that consists of:

Bursaries for life, living and learning

All students from the UK, with a household income of less than £42,600, will be awarded a **Lancaster Bursary of £1,000** for each year of their studies.

Students from the UK eligible for a bursary package will also be awarded our Academic Scholarship and/or Access Scholarship if they meet the criteria.

For up-to-date details of tuition fees, financial support, further guidance and information, please look at the Lancaster University Undergraduate Fees & Finance web page.

For 2016 entry, our Excellence Scholarship will form part of the Unconditional Offer Scheme for full time UK applicants with outstanding academic profiles. Further information is available at the Lancaster University Undergraduate Fees & Finance web page.

Lancaster University's priority is to support every student to make the most of their life and education. 400 students each year will be entitled to bursaries and/or scholarships to help them with the cost of fees and/or living expenses.

Scholarships recognising academic talent

Our **Academic Scholarship** is designed to reward the hard work and natural ability of full-time UK and Islands students applying to study with us regardless of their household income. Students achieving: A*, A*, A in their A-level examinations (or equivalent academic qualifications), and who place Lancaster as their firm choice, will be awarded a **£2,000** Lancaster Scholarship during their first year of undergraduate studies.

Our **Access Scholarship** is to support UK students with household incomes of less than £42,600, who achieve excellent A level grades of A*, A, A, or the equivalent academic qualifications. They will be awarded a **£1,000** Access Scholarship for each year of their studies. In addition, students from household incomes of less than £42,600 who achieve higher entry grades of A*, A*, A (or equivalent academic qualifications), will also be awarded our £2,000 Academic Scholarship in their first year of study. Continuation of the Access Scholarship is subject to satisfactory academic progression.

The Lancaster University Undergraduate Fees & Finance web page can be found at: www.lancaster.ac.uk/study/undergraduate/fees-and-funding

At the time of printing, 2016/17 bursaries, scholarships and access agreements remain to be confirmed and may be subject to change.

What do Our Graduates Think?



Rachel Efrat
Environmental Science BSc Hons, 2014

Studying Environmental Science within the Lancaster Environment Centre has been a fantastic experience. The degree offers an impressive range of modules to choose from, with exciting UK and international field and laboratory experience. This really enabled me to design my degree to follow the direction I wanted, as well as helping me prepare for what I wanted to do after my undergraduate degree. Whether you find focusing on a particular area of Earth or environmental science exciting, or decide to aim for a broad and flexible knowledge and skill set, the choice is yours. I had the opportunity to complete an integrated year studying at the University of British Columbia (Vancouver) in Canada as part of my degree at Lancaster. This was an amazing academic and social experience, during which I also received regular contact and support from staff at Lancaster. This enabled me to update the department on my progress, and to organise the dissertation topic I wanted to work on, in preparation for returning to Lancaster for my third year. The staff at LEC were really helpful and ensured that my study abroad experience complimented my Lancaster studies, providing me with an experience that was second-to-none. Completing my Environmental Science degree at Lancaster helped me produce a strong application to study for a soil science PhD, which is what I am doing now, working in collaboration with researchers at Lancaster University and the British Geological Survey.



Kirsty Ross
Environmental Science BSc Hons, 2013

I loved my course at Lancaster, the first year sets you up nicely to specialise in the second and third years. The courses provide you with great skills for both industry and further education. For example, material I learnt in my degree was directly relevant when I worked for an environmental remediation company after I had graduated. This included understanding the scientific processes behind water and land contamination and remediation, alongside the regulatory policies in these areas. The quality of teaching is truly amazing, the lecturers are inspiringly passionate about their subjects, and would always encourage you to think outside the box and beyond. They are all a brilliantly approachable bunch, whether it be related to an academic question or not. Lancaster is an awesome place, in respect of both the university and the city. This makes it a brilliant place to come back to for further study, as I've chosen to do for my PhD!



Samantha France,
Earth and Environmental Science BSc Hons, 2012

The Earth and Environmental Science degree here at Lancaster allowed me to gain extensive knowledge across a wide range of disciplines; I feel this was a huge advantage to me as starting out as a first year I had no idea what I was interested in or would like to pursue in the future. The degree is a mix of both lecture and field based learning which I feel is essential to such a degree; the vast number of field courses makes the whole experience of learning much more enjoyable.

The Mount Etna field course was an unforgettable trip and definitely the highlight of my three years at Lancaster and should not be turned down by anybody who has the chance to go. I believe that both the practical skills and knowledge I have acquired during my degree have fully prepared me for life after university and has made my decision to continue to study at a higher level much easier.



Alex Pilling,
Earth and Environmental Science BSc Hons, 2012

During my undergraduate degree at Lancaster I enjoyed studying a variety of Earth science topics from Volcanology to Sedimentology. All the field courses were excellent, especially the one to Mount Etna! I also had the fantastic opportunity to do my geological mapping dissertation in New Zealand! This was a wonderful experience which supported and furthered my interest in geology. It was a real privilege and pleasure to work with such wonderful staff and to study the subject I really love at Lancaster University.

Visiting Us

Lancaster University is very well served by road, rail and air networks (see map). Annual Open Days take place in June, July and September of each year for anyone thinking of applying to Lancaster. These are an excellent opportunity for students considering Higher Education entry to visit Lancaster and find out about degree programmes, talk to staff and go on a campus tour. Alternatively, Campus Tours take place on Mondays throughout the year. There are tours of the University and its facilities and you will see student accommodation in a College. If you want to attend an annual open day or would like to join a conducted tour, please visit the University's website to book a place or email: visitus@lancaster.ac.uk Telephone enquiries can be made to UK Student Recruitment and Outreach Team on:- **01524 593724**

If you would like to visit the University informally, you are welcome to do so at any time. You do not have to advise us of your visit; the campus is like a small town and you are welcome to use the shops, Sports Centre, bars and restaurants and to visit the Library. Please contact the Environmental and Earth Sciences admissions secretary for a map of the University campus. Email: lec.ug@lancaster.ac.uk

Visiting Environmental and Earth Sciences at Lancaster

We hold visit days for applicants who are holding an offer from Lancaster between December and March each year. These applicant visit days are designed to allow you to get a taste of being an undergraduate in the Environmental and Earth Sciences at Lancaster. You will be able to talk to Admissions and subject tutors, participate in some of our activities, join a conducted tour of the campus, and find out about our excellent facilities at Lancaster. Parents or other visitors are also welcome to come to the visit day.

Approximate Travel Times (By Train)

Lancaster — London	2.5 hours
Lancaster — Liverpool	1.5 hours
Lancaster — Manchester	1 hour

- Main Airport
- Main Ferry Port
- Heliport (Penzance)
- Major Cities
- Lancaster Railway Station
- Major Roads



Open to All

We welcome visitors to our campus, whether you're here for a conference, to watch an award-winning performance, to use our sports facilities or simply to enjoy our 360 acres via our Woodland Walk.



For further information please visit: www.lancaster.ac.uk/opentoall/

Notes

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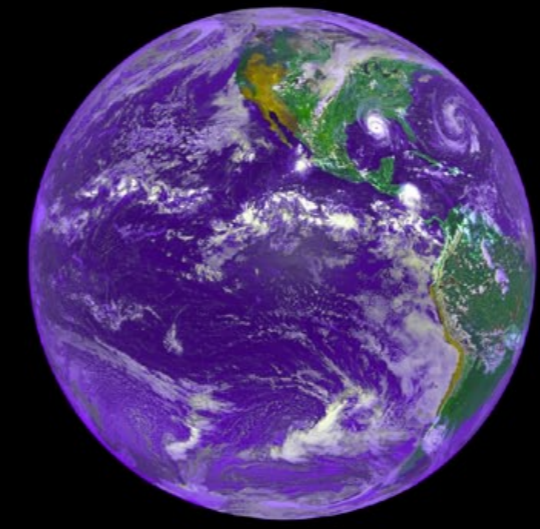
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Contact Addresses

For further information about any of our degree programmes please contact:

Contact person: **Elaine Stokes**
Email: lec.ug@lancaster.ac.uk
Telephone: **01524 510286**
Web site: www.lancaster.ac.uk/lec/

POSTAL ADDRESS:
**Undergraduate Admissions,
Lancaster Environment Centre,
Lancaster University, LA1 4YQ
United Kingdom**

Further information about the University in general, accommodation or the city of Lancaster may be found in the University's Undergraduate Prospectus. Paper copies are available via:

www.lancaster.ac.uk/prospectus

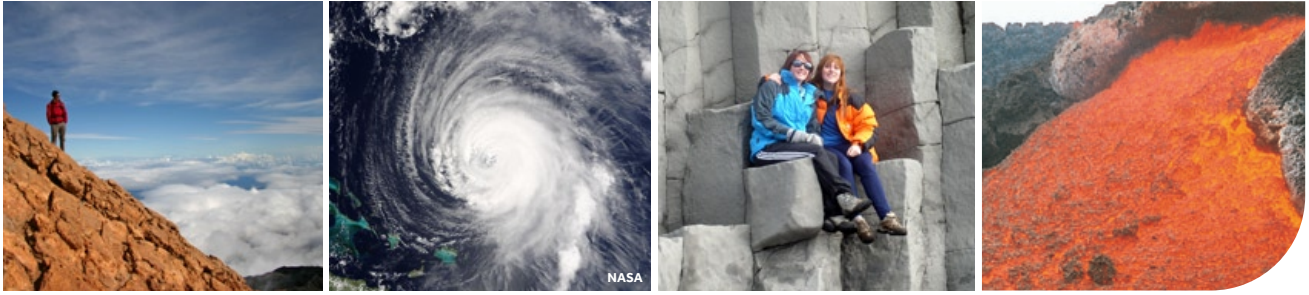
- OTHER WEB SITES**
- Lancaster University home page**
www.lancaster.ac.uk/
 - Lancaster University Student Union**
www.lusu.co.uk
 - Lancaster University International Office**
www.lancaster.ac.uk/study/international-students/

Disclaimer

The information in this brochure has been compiled with great care and attention to detail. All the information is correct at the time of going to press (June 2015). It is important to understand that the provision of courses, facilities and all other arrangements detailed here are reviewed on a regular basis and that they may be subject to some change. This brochure does not form part of any contract between any person and the University.

All Earth photographs courtesy of NASA.

Environmental & Earth Sciences



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