Natural Sciences

lancaster.ac.uk/natural-sciences
Key Facts

- **Design your own degree**
  Lancaster University offers one of the most flexible Natural Sciences degree schemes in the country with over 100 degree programmes to choose from. Unlike other institutions which package disciplines together, at Lancaster you choose your own combinations.

- **97%**
  This is a challenging programme with each subject being taught to the same depth of understanding as single honours students.

- **Study Abroad flexibility**
  The Study Abroad option is available in both our 3 and 4 year degree programmes.

- **91%**
  Our degree programme was established in 1987, making it one of the longest running Natural Sciences programmes in the country.

Natural Sciences

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**Subject Pathways**

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How to use this booklet

This booklet provides a snapshot of the modules you can expect to study here at Lancaster. The mandatory modules are highlighted on a coloured background and the optional modules are shown on a white background.

**Module choices**

You will notice that in most cases, modules in first year are fixed and more options open up in subsequent years. This is intentional as our pathways have been expertly selected so that your first year covers as much ground as possible to keep your later options open.

**Pathway entry requirements**

To study on any particular pathway you must meet the entry requirements of that particular subject. Please see the relevant department information at lancaster.ac.uk.

**Disclaimer**

The University makes all reasonable efforts to ensure that the information in this brochure is correct at the time of printing (June 2017). Please see lancaster.ac.uk/compliance/legalnotice for further information.
Welcome

Having been the Director of Natural Sciences for the past 12 years, I am passionate about our consortial degree programme as it really will provide you with the very best platform from which to launch your future career.

Coming to university does not necessarily mean specialising in one subject. A natural sciences degree will allow you to maintain an interest in two or three scientific disciplines where you will learn and integrate knowledge from a range of subjects. Huge leaps forward in science and technology are occurring through inter-disciplinary collaborations, for example, physicists have made major contributions in the fields of medicine and biology and computer programmers are predicting the outcome of chemical reactions and are modelling biological processes.

Why study at Lancaster?

Here at Lancaster there are no 'natural sciences' modules. You will take the same modules as the single honours students and be taught to the same depth of understanding. What differentiates the Lancaster Natural Sciences programme from many of our competitors is its flexibility. We have 20 pathways (a pathway is a selection of modules taken from a single honours programme) which can be taken in any combination. You will choose three of these pathways in first year – giving you 1140 possible combinations!

Extremely employable

Your personal and professional development are of the utmost importance to us. By studying a natural sciences degree you are telling a prospective employer that you are the sort of person who is prepared to think and work across the conventional boundaries of science. Such open-minded scientists are in great demand with employers and your job prospects are excellent. In addition, the Faculty has a dedicated team working with companies to offer internships and placements to our students during vacations.

A highly supportive learning environment

Our Natural Sciences programme has been running for over thirty years and is completely integrated into the Lancaster system. Individual departments are delighted to teach the high quality students provided by Natural Sciences. You will be supported in your studies by a designated academic advisor in each subject who can advise you on study skills, personal organisation, time management and module selection. You also have the support of the full-time Natural Sciences staff who have an open door policy for both pastoral and academic concerns.

Welcoming and socially engaging atmosphere

Visitors frequently comment on the friendliness of the staff and students here at Lancaster. This, combined with our outstanding academic status (consistently in the top 10 in the UK), make Lancaster University a great place to study and enjoy the experience of being a student. You are sure to make lasting friendships, create special memories and develop life skills that will stay with you long after you leave us.

So welcome to Lancaster and welcome to Natural Sciences.

Dr Keith Davidson
Director of Natural Sciences

“The

After graduating I was employed by a pharmaceutical company as a quality analyst. I worked in a laboratory conducting scientific tests and analysing results for the manufacture of inhalers. After two years I decided to change my career and completed my PGCE. I am now a secondary school science teacher specialising in chemistry. This is a whole new challenge!”

Annika Hall

lancaster.ac.uk/natural-sciences
Entry Requirements

The standard entry requirements for all of our courses are A*AA - AAA at A level with at least two of these being in science subjects, and to grade B in GCSE mathematics. In addition, entry to some first year courses may require that you hold A level qualifications in particular subjects.

- **A levels**
  The standard entry requirements for all of our courses are A*AA - AAA at A level with at least two of these being in science subjects, and to grade B in GCSE mathematics. In addition, entry to some first year courses may require that you hold A level qualifications in particular subjects.

- Enquiries are welcomed from candidates with other qualifications, e.g. GNVQ, BTEC, Open University, Open College, ONC, HNC, HND, Scottish Highers, Irish Leaving Certificate and International Baccalaureate.

- We also welcome applicants offering a range of overseas qualifications
- Enquiries from candidates considering a future application or deferred entry are also welcome
- All applications must be made through the UCAS scheme

For more information visit lancaster.ac.uk/natsci-entry

To study on any particular pathway you must meet the entry requirements of that particular subject. Please see the relevant department information at lancaster.ac.uk

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Lancaster offered a degree with flexibility which I didn’t see in other universities, with the opportunity to put together a truly unique scheme of study for my interests.

Through physics I got particularly interested in computer modelling – even though when I was applying to university I expected to take a more theoretical/mathematical approach.

I spent my second year abroad in the USA, before transferring onto the MSci. It was a fantastic opportunity to explore another country and to take some different courses. The experience introduced me to teaching and research techniques used across the pond which I’m hoping to be able to apply moving forward.

I’m beginning a PhD in Astrobiology which will combine some of the physics and chemistry I’ve studied, as well as introducing biology to the mix! The ability to study multiple subjects at undergraduate level has given me a solid foundation as I continue my career.

You can pursue so many things through natural sciences, so experiment! If there’s a subject you’re unsure of, take it as one of your three choices in first year and see where it takes you. I originally saw myself heading down a physics and maths route and took chemistry on a whim. I’ve ended up following it through to my final year.

Lancaster is perfectly placed near to the bustle of big cities, the freedom of the seaside, and the peace of the Lake District - all within an hour’s drive! There’s everything you could possibly need – both academically and otherwise and all the departmental staff are incredibly friendly!

Pete Higgins
MSci Hons Natural Sciences (Study Abroad), Fourth Year
MSci or BSc? You may enrol on either the three year BSc honours degree or the four year MSci honours programme. The delivery of both programmes is identical in years one to three, and then in fourth year, the MSci students undertake a major research project and study specialist modules delivered by lecturers who are experts in their field. You are able to transfer between the MSci and the BSc up until the end of third year.

Flexibility
Our Natural Sciences degree programme is designed to exploit the flexibility of Lancaster’s modular degrees and is underpinned by world-leading research (REF 2014). Our pathways are illustrative of the subjects you can study, however we encourage you to talk to us about your preferred selection of subjects so that we can guide and advise you on the best route to match your interests and strengths.

In your first year you will normally study three subjects, two of which must come from the following subject areas:

- Biological Sciences
- Chemistry
- Communications
- Computing
- Electrical Engineering
- Environmental Science
- Geography
- Mathematics
- Mechanical Engineering
- Physics
- Psychology

Non-science subjects
The third subject may be another science or non-science subject.
It is possible to take up to 25% of your studies in a non-science subject. Almost any subject taught at Lancaster University is available to students on the Natural Sciences programme provided they meet the pre-requisites, it fits with their timetable and the course has the capacity. Examples of non-science subjects studied are: Management, European Languages, Philosophy and History.

First year (Part I)
During your first year you will complete 15 modules, 5 in each of your chosen subjects, though other variations are possible. Each module covers a particular aspect of a subject and is typically 12 to 15 lectures in length and incorporates a large amount of laboratory based practical work. Successful completion of the first year allows you to progress to second year.
After a broad-based first year, you will specialise in particular areas within each discipline, allowing you to study where your interest really lies. A particularly attractive feature of the Natural Sciences degree is that at the end of the first year there are some possible options available to you:

- Continue to study your original three subjects
- Drop one of the original subjects and continue with a two subject degree

The flexibility of the scheme has helped those students who were reluctant to commit themselves to a single subject in their first year and has provided valuable ‘breathing space’ for them to tailor their studies to suit their particular talents and interests.

Years 2 and 3 (Part II)
From your second year you will have the opportunity to specialise by choosing pathways within a discipline. Your choices will be influenced by the subjects you selected in first year.
I wanted to explore a different country and immerse myself in its culture. The Lancaster Natural Sciences programme offered the flexibility and ability to customise and tailor my degree that I desired. In addition, its Study Abroad options were as good as, if not better than, those offered by my other university choices. I really liked the friendly and welcoming atmosphere of Lancaster, both laid back yet hard-working. It’s a modern campus in a beautiful area.

I decided to study abroad as I had not had the fortune of travelling much before I came to university, so jumped at the chance to spend 10 months abroad. I was very lucky to have been placed in the University of Boulder, Colorado. There were too many highlights to write about – but memorable events were hiking trips to Arches National Park and up 14,000ft mountains in the Rockies, a road trip to Yellowstone, learning to snowboard, waking up to sun or snow nearly every day, going on a month-long tour of cities across the country, to name but a few.

After completing my degree I will be starting a 12 month placement within the chemistry team at EDF Energy’s nuclear power station at Heysham.

If you’re thinking of studying a natural sciences degree then pick the subjects you enjoy, and don’t be afraid to ‘evolve’. I took Biology, Chemistry and Maths in 1st year, but shifted towards Environmental Science, Environmental Chemistry and Biology over the subsequent years.”

Sam Allan
MSci Hons Natural Sciences (Study Abroad), Fourth Year
Internships

We have an extensive network of businesses providing a range of full and part-time paid for internship opportunities in areas that are relevant to your degree. You get to apply your knowledge in the real-world and businesses get the skills they need. Honing the skills that are much sought after by employers, such as team working, commercial awareness and time management will give you an edge in the job market.

Future careers

A multidisciplinary degree, such as natural sciences, opens up a wide range of career opportunities. Natural science graduates are highly sought after for their technical and practical skills that can be transferred across many industries. Students develop careers in management, banking, teaching, consultancy, medicine and research. Others go on to further study.

Internships

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DID YOU KNOW?

97% of students go on to work or further study within 6 months

Studying Natural Sciences allowed me to continue studying all the subjects I loved at A level while still specialising and learning in a world-class environment.

You are very well supported at Lancaster both in the individual departments and in Natural Sciences. Through support from the Science and Technology Faculty, I was diagnosed with dyslexia. I now receive extra support and funding. I also have academic advisors in each Department who make sure you make all the right choices during your studies.

Lancaster is brilliant for providing lots of different types of modules and ways to study. Knowing I did well in my labs I took as many as I could, including Experimental Principles of Particle Detection. Working alongside active researchers from places like CERN and Fermi Labs has confirmed that I would like a career in particle research.

The departments at Lancaster are brilliant for updating you about work opportunities and internships. I’ve worked with young people on a number of internships including maths skills with Lancaster University’s Students’ Union (LUSU), a company called Mad Science where I presented science demonstrations, and Teach First where I shadowed teachers and delivered my own lesson. I’m currently participating in an internship called Teach Physics run by the Ogden Trust. This is another opportunity to develop my skills, to work with people from different backgrounds; to help me be more prepared for the world of work, as well as finding out if I want to pursue a career in teaching.

I am also on the Study Abroad scheme and am looking to study in the US next year. I can’t wait to experience a new culture which could help my confidence in the working environment but also experience new ways of studying.

You get out what you put in at Lancaster! There are so many options and opportunities that I couldn’t imagine these being offered elsewhere. Research these when looking at different universities and you will see just how flexible Lancaster’s Natural Science degree is!”

Lucy Wood
MSci Hons Natural Sciences (Study Abroad), Third Year

lancaster.ac.uk/natural-sciences
Biology

Fundamental biological mechanisms are related to the environmental challenges of the 21st century such as food security, environmental pollution, ecosystem functioning, sustainable resource management and biodiversity conservation. Students are trained in the scientific study of interactions between organisms and the environment, and how these are modified by human activities.

Biochemistry and Cell Biology

Cellular biochemistry examines the macromolecular structure and the relationship of cellular organisation to the central pathways of intermediary metabolism and the physical processes underlying cellular functions. Cell biology covers the interactions within and between cells which allow them to perform their function in the whole organism. Genetics examines the mechanisms of heredity, moving through intermediary metabolism and the physical processes underlying cellular functions. Cell biology covers the interactions within and between organisms and the environment, and how these are modified by human activities.

Microbiology and Biomedicine

This pathway contains a balanced mixture of biochemistry, microbiology and physiology. It attempts to demonstrate the relevance of microbiology to human affairs, whether the connection is direct, e.g. diseases of humans, or indirect, e.g. the control of diseases of food crops. Although some lectures deal specifically with one group of microbes, i.e. bacteria, fungi or protozoa, entire modules emphasise ecological and functional relationships between different groups of microbes.

Ecology and Conservation

Interactions between organisms, the environment and humanity are often complex. You will receive a thorough grounding in ecological theory and how these biological principles relate to the conservation of wildlife and ecological habitats. The pathway also concerns the practice of ecology and has a strong fieldwork component designed to encourage you to develop your practical skills.
Chemistry Pathways

Chemical Measurement and Analysis
Chemical theory and analysis relates to the measurement, rationalisation, and prediction of the chemical and physical properties of individual molecules and bulk materials. This pathway covers the theory and practical application of techniques in physical, analytical, and computational chemistry. It also prepares you for potential research projects in physical and computational chemistry in your final year.

YEAR 1
MANDATORY MODULES
Atoms and Molecules
Chemical Reaction Kinetics
Physical Foundations of Chemistry
Spectroscopy and Analytical Chemistry
Thermodynamics of Chemical Processes
NON-MANDATORY MODULES
Coordination Chemistry
Organic Structure
Skills for Chemists

YEAR 2
MANDATORY MODULES
Electrochemistry
Quantum Chemistry, Symmetry and Group Theory
The Physical Principles of Spectroscopy
Thermodynamics and Statistical Mechanics
NON-MANDATORY MODULES
Molecular Structure Determination
Solids, Soft Matter and Surface

YEAR 3
NON-MANDATORY MODULES
Advanced Chemistry Practical Research
Advanced Spectroscopy: Theory and Applications
Advanced Techniques for Analytical Separations
Biological Chemistry and Chemical Biology
Core Computational Chemistry
Evaluating the Properties and Interactions of Molecules
Research Project (BSc only)

Environmental Chemistry
Environmental chemistry specifically relates to the chemistry of the aqueous, atmospheric and terrestrial environments. This pathway is designed to give a thorough grounding in chemistry whilst covering the techniques and methodology of environmental chemical analysis, together with an introduction to environmental planning and assessment.

YEAR 1
MANDATORY MODULES
Atoms and Molecules
Chemical Reaction Kinetics
Physical Foundations of Chemistry
Spectroscopy and Analytical Chemistry
Thermodynamics of Chemical Processes
NON-MANDATORY MODULES
Atmosphere, Weather and Climate
Biochemical Cycles
Coordination Chemistry
Geology
Hydrology: Water in the Environment
Introduction to Environmental Chemistry
Numerical Skills
Organic Structure
Skills for Chemists
The Earth’s Interior

YEAR 2
MANDATORY MODULES
Aquatic Biogeochemistry
Coordination Chemistry
Geology
Hydrology: Water in the Environment
Introduction to Environmental Chemistry
Numerical Skills
Organic Structure
Skills for Chemists
The Earth’s Interior

YEAR 3
NON-MANDATORY MODULES
Advanced Chemistry Practical Research
Advanced Spectroscopy: Theory and Applications
Advanced Techniques for Analytical Separations
Biological Chemistry and Chemical Biology
Core Computational Chemistry
Evaluating the Properties and Interactions of Molecules
Research Project (BSc only)

Chemical Synthesis and Structure
Chemical synthesis concerns the creation of new molecules. Key to this is understanding molecular reactivity and mechanism, techniques to design and synthesise molecules, and how we can characterise and measure their properties. This pathway develops knowledge and practical skills across all of synthetic chemistry and prepares you for potential research projects in chemical synthesis in your final year.

YEAR 1
MANDATORY MODULES
Atoms and Molecules
Chemical Reaction Kinetics
Physical Foundations of Chemistry
Spectroscopy and Analytical Chemistry
Thermodynamics of Chemical Processes
NON-MANDATORY MODULES
Coordination Chemistry
Organic Structure
Skills for Chemists

YEAR 2
MANDATORY MODULES
Advanced Coordination Chemistry
Advanced Spectroscopy: Theory and Applications
Advanced Techniques for Analytical Separations
Biological Chemistry and Chemical Biology
Core Computational Chemistry
Evaluating the Properties and Interactions of Molecules
Research Project (BSc only)

YEAR 3
NON-MANDATORY MODULES
Advanced Chemistry Practical Research
Advanced Spectroscopy: Theory and Applications
Advanced Techniques for Analytical Separations
Biological Chemistry and Chemical Biology
Core Computational Chemistry
Evaluating the Properties and Interactions of Molecules
Research Project (BSc only)

Atmosphere, Weather and Climate
Atmospheric Science
Aquatic Biogeochemistry
Biochemical Cycles
Coordination Chemistry
Geology
Hydrology: Water in the Environment
Introduction to Environmental Chemistry
Numerical Skills
Organic Structure
Skills for Chemists
The Earth’s Interior

Aquatic Biogeochemistry
Coordination Chemistry
Geology
Hydrology: Water in the Environment
Introduction to Environmental Chemistry
Numerical Skills
Organic Structure
Skills for Chemists
The Earth’s Interior
Computing Pathways

Computing and Communications

The School of Computing and Communications is one of the UK’s leading departments (positioned 12th in REF2014) offering an extensive portfolio of high quality programmes for undergraduate and postgraduate study, taught by a team of around 50 acknowledged world experts in their field. This pathway covers practical storage and usage of data and digital media and its applications. Some computing experience is necessary.

Engineering Pathways

Electronic Engineering

Our Electronic and Electrical Engineering pathway will help you develop a sound foundation in all aspects of Electronic and Electrical Engineering that is crucial to the design and manufacture of future systems in the medical, environmental, energy transport, communications and ICT markets. You will also have the opportunity to specialise in areas including wireless communications, silicon chip design, nanotechnology, green technologies and power generation.

Due to the complexity of this subject and the background knowledge it requires in later years, this pathway is double weighted. As such you can only take one other pathway with this option.

Mechanical Engineering

Mechanical Engineering is a field covering any industry that uses moving parts, from construction to transport; medicine to manufacturing; renewable energy to consumer technology. Our programme gives you the skills necessary for the subject, with an applied focus on mechanical system designs.

Due to the complexity of this subject and the background knowledge it requires in later years, this pathway is double weighted. As such you can only take one other pathway with this option.
Environmental & Earth Science Pathways

Earth Science

The solid rocks that comprise Earth’s upper crust contain a record of change driven by processes originating from the core to the atmosphere over a period exceeding 2 billion years. This pathway provides the basic skills needed to read this record and understand how Earth has evolved over both long and short periods of time. You will have the opportunity to take a number of field-based modules in both the UK and abroad.

YEAR 1

MANDATORY MODULES
Atmosphere, Weather & Climate
Biogeochemical Cycles
Earth’s Interior
Geology
Hydrology
Water in the Environment

NON-MANDATORY MODULES
Introduction to Environmental Numerical Skills

YEAR 2

MANDATORY MODULES
Atmosphere, Weather & Climate
Biogeochemical Cycles
Earth’s Interior
Geology
Hydrology
Water in the Environment

NON-MANDATORY MODULES
Atmosphere, Weather & Climate
Biogeochemical Cycles
Earth’s Interior
Geology
Hydrology
Water in the Environment

YEAR 3

MANDATORY MODULES
Atmosphere, Weather & Climate
Biogeochemical Cycles
Earth’s Interior
Geology
Hydrology
Water in the Environment

Environmental Science

This pathway aims to train you in those areas of natural science (including chemistry, physics, biology, mathematics, geology, physical geography) that are used to understand natural and anthropogenic processes on the surface of the Earth, rivers, lakes, oceans and the atmosphere, as well as Earth’s internal processes, against the backdrop of environmental change.

YEAR 1

MANDATORY MODULES
Earth’s Interior
Geology
Biogeochemical Cycles
Hydrology
Water in the Environment
Atmosphere, Weather & Climate

NON-MANDATORY MODULES
Subject to A level portfolio, students may be required to replace one of the above modules with one of the following:
Introduction to Environmental Chemistry Numerical Skills

YEAR 2

MANDATORY MODULES
Earth’s Interior
Geology
Biogeochemical Cycles
Hydrology
Water in the Environment
Atmosphere, Weather & Climate

NON-MANDATORY MODULES
Introduction to Geophysical Techniques
The Dynamic Earth

YEAR 3

MANDATORY MODULES
Earth’s Interior
Geology
Biogeochemical Cycles
Hydrology
Water in the Environment
Atmosphere, Weather & Climate

NON-MANDATORY MODULES
Atmosphere, Weather & Climate
Biogeochemical Cycles
Earth’s Interior
Geology
Hydrology
Water in the Environment

Geography Pathways

Human Geography

This pathway provides you with an understanding of society, culture, development and issues of globalisation within a framework of environmental issues in the 21st century.

YEAR 1

MANDATORY MODULES
Geographical Skills and Application in a Changing World
Human Geographical Pioneers and Concepts

NON-MANDATORY MODULES
Introduction to Geophysical Techniques
The Dynamic Earth

YEAR 2

MANDATORY MODULES
Development, Geography and the Majority World
Human Geographical Pioneers and Concepts

NON-MANDATORY MODULES
Cultural Geography
Environment and Society
Field Course in Paris - Globalising Food: Food, Politics and Culture
Introduction to Eco-Innovation
People and the Sea
Political Geography
Research Project Skills
Spatial Analysis and GIS

YEAR 3

NON-MANDATORY MODULES
Africa Geographies of Transformation
Cities and Globalisation
Climate and Society
Dissertation
Dissertation with External Partner
Energy: Controversies and Decisions - Making
Environment, Politics and Society in Amazonia
Field Course in the Brazilian Amazon - Conservation and Sustainable Development
Field Course in Croatia - Water, Society and the Istrian Landscape: Environmental Management in a Mediterranean Context
Field Course in New York - Inequality and the City
Food and Agriculture in the 21st Century
Geographies of Health
GIS: Principles and Practice
Global Consumption
Independent Research
Urban Infrastructure in a Changing World

Physical Geography

You will learn about the main components of our ‘Earth-system’, how environments have changed in the past, what controls the dynamics of environments in the present, and how we can predict changes in the future. All this is studied in the context of an interconnected planet.

YEAR 1

MANDATORY MODULES
Environmental Process and Systems
Geographical Skills and Application in a Changing World

NON-MANDATORY MODULES
Introduction to Eco-Innovation
Physical Geographical Pioneers and Concepts
Research Project Skills
Soil Science
Spatial Analysis and GIS

YEAR 2

MANDATORY MODULES
Earth Surfaces Processes
Interacting Landscapes: Biogeography and Geomorphology

NON-MANDATORY MODULES
Aquatic Biogeochemistry
Atmospheric Science
Catchment Hydrology
Environmental Data Visualization and Analysis
Field Course in Iceland - Glacier Landscape Interactions
GIS: Principles and Practice
Glacial Systems
Independent Research
Lakes, Rivers and Estuaries
Magnetism for Environmental Geomorphology
Magnetism for Environmental Geomorphology
Mineral Deposits
Quaternary Environmental Change

YEAR 3

NON-MANDATORY MODULES
Dissertation
Dissertation with External Partner
Environmental Remote Sensing and Image Processing
Field Course in New York - Inequality and the City
Field Course in the Brazilian Amazon - Conservation and Sustainable Development
Field Course in Croatia - Water, Society and the Istrian Landscape
Field Course in Iceland - Glacier Landscape Interactions
GIS: Principles and Practice
Glacial Systems
Independent Research
Lakes, Rivers and Estuaries
Magnetism for Environmental Geomorphology
Mineral Deposits
Quaternary Environmental Change
Mathematics Pathways

Single Mathematics
This pathway allows you to continue your study of Maths at degree level in a top ranking department. You'll focus on both pure mathematics and statistics with an emphasis on solving practical maths problems.

YEAR 1
MANDATORY MODULES
Calculus
Further Calculus
Linear Algebra
Probability
Statistics

YEAR 2
NON-MANDATORY MODULES
Abstract Algebra
Computational Mathematics
Linear Algebra II
Probability II
Statistics II

YEAR 3
NON-MANDATORY MODULES
Bayesian Inference
Combinatorics
Elliptic Curves
Financial Mathematics
Geometry of Curves and Surfaces
Graph Theory
Groups and Symmetry
Likelihood Inference
Mathematical Education
Medical Statistics
Multivariate Statistics in Machine Learning
Number Theory
Representation Theory of Finite Groups
Rings, Fields and Polynomials
Statistical Models
Stochastic Processes

Double Mathematics
For those wishing to focus their studies on Mathematics, we also offer a double-weighted pathway that allows you to study the subject in greater detail. This incorporates the maths modules listed above and gives you the opportunity to concentrate on theoretical problems.

YEAR 1
MANDATORY MODULES
As above, plus:
Convergence and Continuity
Discrete Mathematics
Geometry and Calculus
Integration and Differentiation
Numbers and Relations

YEAR 2
NON-MANDATORY MODULES
As above, plus:
Complex Analysis
Project Skills
Real Analysis

YEAR 3
NON-MANDATORY MODULES
As above, plus:
Differential Equations
Hilbert Space
Lebesgue Integration
Linear Systems
Metric Spaces
Probability and Measure
Project Skills

I chose Natural Sciences at Lancaster as the degree was by far the most flexible. It allowed me to pick and choose (throughout my course) which modules interested me most.

The University is an incredibly friendly and welcoming place where the staff and students are approachable and helpful. My lecturers also operate an open-door policy, so if you have any problems they are more than happy to help.

Astrophysics and Cosmology are definitely my favourite topics. Studying these topics has developed my numerate and problem solving skills, as well as the ability to apply appropriate independent techniques to the bigger picture and communicate complex concepts effectively, all of which are key transferable skills in many careers.

During my degree I took a linked pair of modules called Mathematical Education and Placement. My primary school placement allowed me to set the theory I had learnt into context and to apply and refine teaching techniques. This was a fantastic experience and not only furthered my confidence in the classroom but also cemented my passion for teaching. After graduating, I am going into a career in teaching.

I have loved my time at Lancaster because it has offered me a seemingly endless variety of opportunities from participating in cutting-edge academic research to meeting and working with people from a myriad of backgrounds and disciplines. I firmly believe that Lancaster offers the best of both worlds; it is a high achieving academic institution but also places equal emphasis on the social and personal development side of student life too. The academics are passionate about teaching and are there to help, not catch you out!"
# Psychology Pathways

**Psychology with BPS accreditation**

This double-weighted pathway allows you to study psychology and receive accreditation from the British Psychological Society. It can only be taken alongside one other module and cannot be taken by BSc students intending to study abroad due to the accreditation regulations. It is also possible to take a single weighted non-accredited pathway in Psychology.

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<td><strong>Non-Mandatory Modules</strong></td>
<td>Cognitive Psychology</td>
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<td>Theoretical Physics Independent Study</td>
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# Physics Pathways

**Physics with BPS accreditation**

This pathway provides a working knowledge and understanding of the physics of fluids and solids, especially their thermal and electrical properties, with emphasis also in computing, classical mechanics and quantum physics. This pathway requires a set of first year maths-based modules, either through the Physics Department (under the heading Physical Systems) or the Mathematics Department (under the heading Single Mathematical), both listed on the previous pages. As such, students taking Physics can only take one other pathway in addition to either of the supporting Maths pathways.

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Come and Visit Us

Book a campus tour online at lancaster.ac.uk/visitus

Open Days and Campus Tours
Join us at one of our many Open Days or Campus Tours and take the time to find out as much as you can about Lancaster University.

In addition, you can meet with staff and students from Natural Sciences to help you find out what it is really like to study here and find out whether the University is right for you.

Campus Tour Extras
The University also offers Campus Tour Extras with a drop-in session to the departments. Take a campus tour and visit our award-winning student accommodation, a range of social venues, our library, study areas and lots more. After the tour, take the opportunity to meet an academic from Natural Sciences to find out more about the course in an informal setting.

Applicant Visit Days
If you’re offered a place on one of our degrees, you’ll be invited to an Applicant Visit Day. This provides the opportunity to give you a real flavour of what it’s like to live and study here. We will show you the University and the colleges, and you will have the chance to meet with some of our current staff and students. You will also have the opportunity to visit a number of departments for a tour of their labs and have the opportunity to ask our departmental academics about the different pathways.

If you cannot make one of our Applicant Visit Days then we also provide individual visits on a date convenient to you. These visits involve a campus tour with one of our experienced student ambassadors, a chat with the Director of Natural Sciences, a lab tour and lunch.

“I chose Natural Sciences at Lancaster because I liked the idea of being able to study a variety of subjects throughout my first year before narrowing down my academic pursuits.

Throughout my degree I was able to get support both from the individual departments I was studying with as well as Natural Sciences.

During my degree I received a bursary from the Royal Society of Chemistry to study in the University research labs. This experience inspired me to pursue academic research as a career.

I have favoured chemistry throughout my university career, in particular inorganic and coordination chemistry. The PhD offer I have accepted combines organic, inorganic, polymeric chemistry and biology, meaning that this degree has given me an advantage over straight chemists as I have more practical knowledge of biology. I believe the Masters project in particular has helped me prepare for this career as I enjoyed the independent research and having the opportunity to work on my own.

If you’re looking to study natural sciences have fun with your choices in first year and take subjects that sound interesting and enjoy them. You often find yourself enjoying areas of science you never thought you would.

I’ve loved my time at Lancaster as it has the uncanny ability to become home.”

Charlotte Farrow
MSci Hons Natural Sciences, Fourth Year
Get in Touch

We are passionate about our subject and are always happy to answer any questions about our degrees and the application process.

Website information
For more information about our degrees and the department please visit lancaster.ac.uk/natural-sciences

For more information about Lancaster University visit lancaster.ac.uk

Get in touch
If you have any further questions then please don’t hesitate to contact Gail Sheldrick, Natural Sciences Recruitment, Conversion and Marketing Coordinator, for friendly help and advice.

T:  +44 (0)1524 5 94931
E:  g.sheldrick@lancaster.ac.uk

Facebook: @LancsUniSciTech
Twitter: @LancsUniSciTech

We look forward to hearing from you.
How to Reach Us

We’re easy to find!

By road
From the north or south, leave the M6 motorway at Junction 33 and take the A6 north towards Lancaster for about 2 miles. The University is on the right. For SatNav use LA1 4YW.

By rail
There are direct rail links between Lancaster and many of the UK’s major cities and airports. The single journey between London and Lancaster takes between 2.5 and 3 hours. Buses and taxis are available from just outside the station.

By coach and bus
Lancaster city is on the national coach network; National Express coaches call at the University. A number of local buses run from Lancaster bus station to the University every 5 minutes on weekdays.

Further details can be found at lancaster.ac.uk/travel