Key Facts

In the 2014 Research Excellence Framework, over 80% of our research was rated as world-leading and internationally excellent.

Over £45m has been invested to provide state-of-the-art facilities, including modern workshops and laboratories, and highly specialised, cutting-edge equipment alongside dedicated computer rooms and social spaces.

Dean of Faculty: Professor Peter Atkinson
Associate Dean for Research: Professor Jamshed Anwar
Associate Dean for Postgraduate Studies: Dr Chris Edwards

PG research students: 484
PG taught students: 374
Fees

<table>
<thead>
<tr>
<th></th>
<th>Taught degrees</th>
<th>Research degrees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home/EU</td>
<td>£8,000</td>
<td>*</td>
</tr>
<tr>
<td>Overseas</td>
<td>£18,900</td>
<td>£17,510</td>
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</tbody>
</table>

* Fees will be announced later in the year, please check our website for the latest information.

About the Faculty of Science and Technology

The Faculty of Science and Technology is home to a vibrant and active community of postgraduate students from around the world. Our researchers engage in projects that make a demonstrable difference to the economy and society. In 2015/2016, the Faculty attracted over £20m in research income from organisations including NATO, UK Government, DEFRA, and we offer a significant number of opportunities supported by UK research councils.

Underpinned by research, our Masters programmes are taught by experts at the cutting-edge of their field and our research students benefit from working alongside academic staff with specialist knowledge and expertise in core scientific disciplines. We place emphasis on an interdisciplinary approach to teaching. It is common for our postgraduate students to cross subject boundaries enhancing the multidisciplinary nature of their studies.

We are committed to delivering a first-class experience for our students. Over £45m has been invested to provide state-of-the-art facilities, including modern workshops and laboratories, and highly specialised, cutting-edge equipment alongside dedicated computer rooms and social spaces. This not only helps us to attract the best academic staff, it allows us to provide a highly stimulating and innovative environment for our students.

Our Masters programmes remain relevant and up-to-date with industry by working in partnership with organisations, such as Unilever and BP, who actively contribute to the design and delivery of our modules. Our established Business Partnerships and Enterprise team work with small and medium businesses, voluntary organisations, social enterprises, public sector institutes such as the NHS and UK Government, and global companies like Microsoft, Shell and Toshiba. These organisations provide valuable opportunities to gain work experience whilst studying.

For more information please visit www.lancaster.ac.uk/sci-tech

Funding

To help with study and living costs, Lancaster University offers postgraduate students a range of scholarships and bursaries. The UK government provides a postgraduate loan scheme for eligible students undertaking masters courses. For more information, please visit www.lancaster.ac.uk/pgfunding
Our Departments
Chemistry

The Department boasts an expanding team of research-active staff at the forefront of research in their respective fields. It benefits from a significant investment from the University, and an extensive array of new laboratories, instrumentation and equipment to support our ambitious research activity.

We are a vibrant community, and our research transcends traditional discipline boundaries, for example linking with biology and medicine, engineering, energy, materials, environmental science, and physics. Our staff have diverse backgrounds and therefore have interests spanning many areas of both fundamental and technological interest. Perhaps most importantly, we share common ground in research excellence, an inclusive and collaborative spirit, and a dedication to passing on our knowledge to a new generation of researchers.

The Department provides a research environment that strongly supports the individual needs of each student, promoting a healthy work-life balance. We are committed to family-friendly policies, flexible working and the Athena Swan Charter, which recognises and celebrates good employment practice undertaken to address gender equality in higher education and research. Our commitment to these principles is reflected in our recent receipt of an Athena SWAN Bronze Award.

The Department has broadened my experience.”

Professor Peter Fielden
Head of Department

Postgraduate enquiries
Postgraduate Coordinator: Carol Cook
Tel: +44 (0)1524 593820
Email: chemistry@lancaster.ac.uk
www.lancaster.ac.uk/chemistry

Research degrees:
- Chemistry PhD
- Natural Sciences PhD
- Chemistry by Research MSc

Business engagement:

Research in the Department is broadly structured into a series of sub-disciplines or themes, including:
- A wide range of synthetic chemistry
- Chemical theory and computation
- Analytical chemistry and spectroscopy
- Chemical biology
- Materials

Due to the interdisciplinary nature of our research, individual topics often span several research themes. Potential areas of application include, but are not limited to: healthcare, energy, pharmaceuticals, and materials development. Prospective students may also suggest projects that are variations of our topics.

Research areas:

Gaining experience and skills

Preparing for your future career is important. We provide all chemistry students with the opportunity to apply for work experience through the Faculty of Science and Technology Internship Programme. Internships allow you to apply your academic knowledge in real-world situations - and get paid for it!

You can also develop transferable skills such as team working, time management, leadership, networking, and commercial awareness.

Many employers use interns to test out a new role and frequently offer them graduate level roles as a result. Previous internship roles have included experimental chemistry for a global polymer manufacturer, energy consultant for one of the largest energy companies in the UK, and materials analyst for a global polymer manufacturer. You can also develop transferable skills such as team working, time management, leadership, networking, and commercial awareness.

Working in partnership

We liaise with all areas of the chemical industry, ranging from multinational oil, chemical and pharmaceutical companies, to a host of smaller enterprises producing new and specialised products. We have relationships with the Nuclear Research Institute, the Lloyd’s Register Educational Trust, DEFRA, the UK Centre for Ecology and Hydrology, and many other organisations.

We also have an award winning global supplier of chemical regulatory services to industry, The REACH Centre, based in the business office space on campus in the Lancaster Environment Centre, which works with the department.

The new cTAP centre, based in the Department, supports both small and large advanced manufacturing companies to develop new products and services by providing direct access to our expertise, equipment and facilities for the testing and manufacture of new chemicals, materials, semiconductor devices and products.

For more information please visit www.lancaster.ac.uk/sci-tech
Chemistry

Research degrees

Overview
We welcome applications from those seeking to perform leading fundamental and technologically relevant research across the areas of analytical chemistry and spectroscopy; chemical biology; materials; chemical theory and chemical computation; and a broad range of synthetic chemistry.

Our research-based PhDs are supported by taught courses, providing skills in modern research techniques, including analytical chemistry, experimental design, advanced laboratory techniques, spectroscopy, computational and materials chemistry, together with courses to develop transferrable skills. This ensures that our postgraduate students extend their knowledge of all areas of chemistry, and possess a wide range of skills to aid employability.

Duration: 36 months, full-time
Entry requirements: Upper second class undergraduate or Masters degree in Chemistry, or an equivalent degree in a related discipline such as Physics or Chemical Engineering, appropriate to the proposed research project
Assessment: Original research and thesis

Natural Sciences | PhD

Overview
This PhD offers an academic training route for graduates seeking to perform leading fundamental and technologically relevant research that transcends the traditional discipline boundaries by linking one or more other disciplines with chemistry. Options include Biology and Medicine, Computer, Engineering, Physics and subjects offered by the Lancaster Environment Centre.

A substantial amount of research addresses research questions that fall between the boundaries of traditional disciplines. Real-world problems require a multi-disciplinary approach, and research expertise at the interfaces of these disciplines is essential to delivering impactful solutions. A Natural Sciences PhD will capture and give expression to such research training.

Duration: 36 months, full-time
Entry requirements: Upper second class undergraduate or Masters degree in Chemistry, or an equivalent degree in a related discipline such as Biochemistry, Biophysics, Physics, Computer or Chemical Engineering, appropriate to the proposed research project
Assessment: Original research and thesis

Chemistry (by Research) | MSc

Overview
Our Masters by research programme provides the opportunity to undertake a short, in depth independent research project in one of our research groups. It will equip you for more sustained and original work at the doctoral level or for advanced-level applied research positions. This degree will develop relevant analytical and technical skills, together with transferrable skills related to research, communication, problem-solving, and independent working.

For information on possible projects, and for further details of our specific research interests, please see our Departmental website.

Duration: 12 months, full-time
Entry requirements: Upper second class undergraduate or Masters degree in Chemistry, or an equivalent degree in a related discipline such as Physics or Chemical Engineering, appropriate to the proposed research project
Assessment: Original research and thesis

Computer Science MSc

12 months, full-time
Global Information and Communication Systems MSc
12 months, full-time
Information Systems MSc
12 months, full-time
Computer & Network Security MSc
12 months, full-time
Cyber Security and Applied Intelligence MSc
12 months, full-time
Computing and Communications

36 months, full-time
Communications Systems PhD
36 months, full-time
Computer Science PhD
12 months, full-time
International Innovation (Computer Science) MSc
12 months, full-time
Cyber Security MSc
12 months, full-time
Computer Science (by Research) MSc
12 months, full-time
E-Business and Innovation MSc/PgDip
12 months, full-time
Data Science MSc
12 months, full-time
International Innovation (Telecommunications) MSc
12 months, full-time
Wireless Communication Systems MSc
12 months, full-time
HighWire PhD
12 months, full-time

Research degrees:

Communication Systems PhD
Computer Science PhD
Communication Systems (by Research) MSc
Computer Science (by Research) MSc
HighWire PhD

Research programmes:

Computer Science MSc
Cyber Security MSc
Data Science MSc
E-Business and Innovation MSc/PgDip
International Innovation (Computer Science) MSc
International Innovation (Telecommunications) MSc
Wireless Communication Systems MSc

Department facts

Head of Department:
Professor Jon Whittle

Postgraduate Coordinator: Debbie Stubbs
Tel: +44 (0)1524 510515
Email: scc-msc-enquiries@lancaster.ac.uk
Web: www.lancaster.ac.uk/scc/postgraduate

For more information please visit www.lancaster.ac.uk/sci-tech
Preparing for your future career is important. We provide all computing and communications students with the opportunity to apply for work experience through the Faculty of Science and Technology Internship Programme. Internships allow you to apply your academic knowledge in real-world situations - and get paid for it!

We have our own dedicated business engagement team. Located in InfoLab21, the team provides a bridge between business and academia, including support for student industrial experience and employability. The routes to industrial experience vary, with new opportunities being added throughout the year. The opportunities often include:

- Masters placements with businesses throughout the region and country
- Support for student entrepreneurship and business start-up
- Short- and long-term employment opportunities through business facing projects
- Getting involved with commercially driven research and innovation initiatives
- Summer internships

Real-world exposure to the commercial sector enhances the opportunities for employment and research, broadening the student experience and providing valuable employment stepping stones. Employers are able to utilise placements to test out new roles and projects which frequently lead to graduate level roles. Alternatively, support provided by the University through business-facing projects can lead to new avenues of research and application that can be developed in collaboration with business.

Engagement with business through the School has enabled a high level of employment in a diverse range of industries including software development, chemical services, energy, cyber security, finance, consultancy, aerospace, manufacturing and media. In addition, these opportunities have led to the formation of independent companies, the spin-out of research into commercial ventures and providing validation of lab-based research. We also have 20 digital businesses ranging from start-ups to teams from international companies, who work alongside our staff and students.

Working in partnership
The School of Computing and Communications is housed in InfoLab21, an award winning facility which is also home to 20 digital businesses ranging from start-ups to teams from international companies, who work alongside our staff. We also have a network of over 900 north-west small and medium sized enterprises and have generated strong relationships with global organisations such as Microsoft, IBM, BT Labs, BBC, Cisco, NEC, Panasonic, Nokia, Ford, BAE Systems, NDS, Simoc, ATG, Intel and Orange.

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In addition to our focused academic research, we believe in conducting research in partnership with end users and industry. We have research projects in many areas including health transport, energy management, online security, crime fighting, counter terrorism; environmental informatics, emergency response and computing for energy conservation. This has led to the establishment of numerous test beds and long-term deployed Living Laboratories with real communities (e.g. Wirral wireless-mesh, e-Campus interactive public displays). These serve as unique resources for conducting novel research and supporting teaching.

Real-world exposure to the commercial sector enhances the opportunities for employment and research, broadening the student experience and providing valuable employment stepping stones. Employers are able to utilise placements to test out new roles and projects which frequently lead to graduate level roles. Alternatively, support provided by the University through business-facing projects can lead to new avenues of research and application that can be developed in collaboration with business.

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Overview
We welcome applications from well-qualified and motivated students for PhD study (three years full-time, four to six years part-time).

You’ll work under individual supervision to become a leading expert in your area, while research training courses will support your learning and help you realise your maximum potential. Annual progress review panels keep your work on track and our seminar programmes and state-of-the-art facilities provide access to ideas and technologies to stimulate your development as a research scientist.

There will be numerous opportunities to collaborate and to present your research nationally and internationally via our extensive research and industrial partnerships. Also, you will have the opportunity to work as a teaching assistant on our taught programmes; a valuable source of experience and income.

We recommend that you visit our website to read the latest information about our research interests and projects.

www.lancaster.ac.uk/sci-tech/research. Here you will also find details on preparing PhD proposals, on contacting individual staff and on funding.

Director of Studies: Dr Gerald Kotonya
Duration: 36 months, full-time or 48-72 months, part-time
Entry requirements: Upper second class honours degree, or its equivalent, in an engineering or associated discipline
Assessment: Original research and thesis
Computing and Communications

Research degrees

Communication Systems (by Research) | MSc

Computer Science (by Research) | MSc

Overview

The MSc by Research programme can be tailored to your individual research needs. You will first take an induction course leading to the production of a learning contract with a research supervisor and subsequently develop a research proposal that forms the basis of the rest of your study. You will then progress to a period of independent research project work and complete a project dissertation. Upon successful completion of the MSc, you will have clearly demonstrated your ability to meet the required high levels of technical professionalism.

Director of Studies: Dr Gerald Kotonya
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: Upper second class honours degree, or equivalent
Assessment: Learning contract, literature review and dissertation

HighWire | PhD

Overview

HighWire is a world-class, cross-disciplinary and user-centric Centre for Doctoral Training which brings together Lancaster’s extensive expertise in Computing, Design and Management. We go beyond multidisciplinary approaches by seeking a creative fusion between three key disciplines, aiming to produce a new breed of innovative people who are able to drive exciting advances in technical, design and business innovation. The programme’s continuing relevance is ensured by our close alignment with the needs and goals of business and industry. We encourage technology exchange and early adoption of emerging technologies, processes and ideas. HighWire graduates can work in challenging roles in organisations, driving radical change in the digital economy.

Director of Studies: Professor Gordon Blair
Duration: 36 months, full-time
Entry requirements: Upper second class honours degree or Masters degree, or equivalent, in one of the following disciplines: Computing, Design or Management
Assessment: Original research and thesis

Cyber Security | MSc

Overview

The overall aim of this MSc is to equip you with the knowledge and skills necessary to work within the IT security profession. It takes advantage of Lancaster having recently been awarded the highly prestigious status of an EPSRC-GCHQ Academic Centre of Excellence in Cyber Security Research, and combines advanced technical skills with disciplines such as Economics, Risk Management, Psychology and Social Sciences. Its strength and uniqueness lies in its multidisciplinary nature, merging expertise from across Lancaster’s faculties to educate the next generation of security specialists.

The technical modules within the degree offer the skills and knowledge required to enable students to obtain the industrially recognised professional qualifications of CISSP (Certified Information Systems Security Professional), CEH (Certified Ethical Hacker) and CHFI (Computer Hacking Forensic Investigator).

Modules

Overview

The Computer Science MSc has been designed to meet the needs of contemporary industrial and research practices. Modern computing is characterised by its massive scale, highly interconnected nature and socially oriented user interaction techniques. Under the guidance of our internationally renowned academics, you will learn about the design and development of computer systems, with technology and users in mind, and gain expertise in subjects such as Cloud Computing, Big Data and Data Mining, Enterprise Architectures and Interaction Design.

The degree also provides a placement that allows you to gain practical experiences through interaction with innovative companies or within our internationally renowned research groups.

Director of Studies: Dr Barry Porter
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: Second class honours degree, or its equivalent, in Computer Science or a closely related discipline. Relevant industry experience may be considered
Assessment: Coursework and dissertation

Modules

Overview

- A Research or Industrially Focused Dissertation
- Advanced Human-Computer Interaction
- Applied Data Mining
- Big Data Mining
- Elements of Distributed Systems
- Professional and Research Methodology
- Research or Industrial Placement
- Systems Architecture and Integration

Coursework and dissertation

HighWire | PhD

It was exciting to get my first taste of a real working environment. The internship showed me the importance of time in business and has changed my outlook on programming for the web completely.”

James Garner, Research Assistant Intern, Next World Web

For more information please visit www.lancaster.ac.uk/sci-tech
### Data Science | MSc

**Overview**
This interdisciplinary MSc is aimed at students who wish to develop skills in the emerging discipline of Data Science. Building upon data science fundamentals, a variety of pathways through the MSc are available and allow students to choose from a range of elective modules according to their skills, interests and career aspirations. Students then undertake a 12-week summer placement either within industry (in a business setting), or as part of an academic research project to consolidate their learning.

Optional pathways span fundamentals and also application areas including:
- Business Analytics: how to gain business insight from large and complex industrial data
- Data Mining: how data mining can be performed at scale, and in a range of application areas (e.g. marketing and finance, social computing)
- Health Informatics: how to build models and gain insight to improve public health and aid clinical decision making
- Systems and Technologies: how to build large-scale systems for answering data science questions
- Statistical Inference: how to specify models and build a statistical framework to gain insights from data

**Modules**

<table>
<thead>
<tr>
<th>Category</th>
<th>Modules</th>
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<tbody>
<tr>
<td><strong>Core modules:</strong></td>
<td>- Data Mining</td>
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<tr>
<td></td>
<td>- Data Science Fundamentals</td>
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<td></td>
<td>- Generalised Linear Models</td>
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<td>- Likelihood Inference</td>
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<td>- Programming for Data Scientists</td>
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<tr>
<td><strong>Optional (elective) Modules:</strong></td>
<td>- Applied Data Mining</td>
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<td></td>
<td>- Clinical Trials</td>
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<td></td>
<td>- Data Mining for Marketing, Sales and Finance</td>
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<td>- Elements of Distributed Systems</td>
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<td>- Environmental Epidemiology</td>
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<td>- Extreme Value Theory</td>
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<td>- Forensics</td>
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<td>- Longitudinal Data Analysis</td>
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<td>- Methods for Missing Data</td>
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<td>- Multi-level Modeling</td>
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<td>- Optimisation and Heuristics</td>
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<td>- Principles of Epidemiology</td>
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<td>- Statistical Genetics and Genomics</td>
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<td>- Survival Analysis</td>
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<td></td>
<td>- Systems Architecture and Integration</td>
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</table>

**Director of Studies:** Dr Chris Edwards (Computing), Dr Deborah Costain (Statistical Inference)
**Duration:** 12 months, full-time
**Entry requirements:** An upper-second class honours degree, or its equivalent, in a subject relevant to Computer Science, Mathematics or Statistics
**Assessment:** Coursework and examination
**Assessment:** Coursework and exam, ten-week consultancy project and dissertation

### E-Business and Innovation | MSc/PgDip

**Overview**
Taught by experts from both the Management School and the School of Computing and Communications (SCC), this programme is about understanding how companies innovate with digital technologies to create new business models, products, and services. You will learn how digital business innovation strategies are developed, managed and delivered, to achieve business value. The programme also focuses on digital entrepreneurship. The knowledge and skills that you will gain from this programme will make you attractive to many forward-looking companies who are at the cutting-edge of business and technologies, including companies that are looking for innovative ways to digitise their product and service offerings, and companies that want to increase intimacy with their customers through innovative digital interactions. The knowledge and skills gained from this programme will also equip you to be entrepreneurs, particularly in the digital space. Graduates of this programme are located internationally, in large companies, in the small-medium sectors, and in their own digital start-ups.

**Modules**
- Business Analysis and Enterprise Systems
- Business Planning and Finance
- E-Business
- E-Marketing
- Information Management and Strategy
- Innovation and Digital Innovation
- Management in Contact
- Managing Complexity
- Managing IT Architecture (BM)
- Technology for E-Business
- Technology in Context

**Director of Studies:** Professor Juliana Suban (SCC contact Dr Phil Benachour)
**Duration:**
- MSc: 12 months, full-time
- PgDip: 9 months, full-time
**Entry requirements:** At least an upper second class honours degree, or its equivalent, from any discipline
**Assessment:**
- Coursework
- Exam
- Ten-week consultancy project and dissertation

### International Innovation (Computer Science) | MSc

**Overview**
This unique MSc offers a ground-breaking curriculum that blends general and specialist modules in contemporary computer science areas with wider interdisciplinary and practical training. So, as well as computer science modules like cloud computing, the semantic web, big data analysis, enterprise systems and interaction design you will take introductory modules in management and design (delivered by Lancaster University Management School and an Imaginaction Lancaster). Chinese language, cultural and business seminars will allow you to benefit from a rich and distinctive learning experience, including a two-week study visit to China. You will build on your academic and practical experience to develop and deliver an in-depth innovation-themed project in collaboration with a UK company. Our highly supportive learning environment will help you to acquire a deep understanding of advanced technical skills in computer science coupled with the processes and techniques needed to apply innovation globally.

The range of skills and experience provided by this course will put you in a strong position to enter a competitive job market.

Alternative pathways of Design, Engineering, Entrepreneurship, Sustainability and Telecommunications are also available.

**Modules**
- Data Mining
- Elements of Distributed Systems
- Advanced Human-Computer Interaction
- Applied Data Mining
- Systems Architecture and Integration
- Plus interdisciplinary modules:
  - Corporate Entrepreneurship
  - Design Driven Innovation
  - Chinese Language and Culture (for equivalent for Chinese speakers)

**Dissertation Project:** Major academic project (in conjunction with industry or relevant research group)

**Director of Studies:** Dr Barry Porter
**Duration:** 12 months, full-time
**Entry requirements:** An upper second class honours degree, or its equivalent in Computer Science, Electronic or Electrical Engineering, Physics or Mathematics from a recognised university or equivalent professional qualification. Work experience preferred, not essential
**Assessment:** Combination of coursework, project work and dissertation

For more information please visit www.lancaster.ac.uk/sci-tech
# Taught Programmes

## International Innovation (Telecommunications) | MSc

### Overview

This unique MSc offers a ground-breaking curriculum that blends general and specialist modules in telecommunications with wider interdisciplinary and practical training. So, as well as computer science modules like digital and advanced communications, digital signal processing, speech and image coding, wireless broadband, advanced filters and systems, enterprise systems and interaction design you will take introductory modules in management and design (delivered by Lancaster University Management School and ImaginationLancaster). Chinese language, cultural and business seminars will allow you to benefit from a rich and distinctive learning experience, including a two-week study visit to China. You will build on your academic and practical experience to develop and deliver an in-depth innovation-themed project in collaboration with a UK company. Our highly supportive learning environment will help you to acquire a deep understanding of advanced technical skills in telecommunications coupled with the processes and techniques needed to apply innovation globally. The range of skills and experience provided by this course will put you in a strong position to enter a competitive job market.

Alternative pathways of Computer Science, Design, Engineering, Entrepreneurship and Sustainability are also available.

### Modules

**Core modules:**
- Digital Communications
- Digital Signal Processing
- Wireless Broadband
- Advanced Communications
- Speech and Image Coding
- Advanced Filters and Systems
- Organised Industry Placement

**Plus interdisciplinary modules:**
- Corporate Entrepreneurship
- Design Driven Innovation
- Chinese Language and Culture (or equivalent for Chinese speakers)

### Director of Studies:
Professor Zhiguo Ding

### Duration:
12 months, full-time

### Entry requirements:
Second class honours degree, or its equivalent, in Electronic/Electrical Engineering, Communications/Telecommunications, Control, Computer Science/Computer Engineering, Physics or Mathematics. Relevant industry experience may be considered.

### Assessment:
Coursework, exams and dissertation

## Wireless Communication Systems | MSc

### Overview

This course is designed to equip graduates with the specialist skills in modern wireless communication systems such as 3G, Wi-Fi, mobile WiMAX and LTE, space-time coding, software defined radio, and reconfigurable analogue and digital RF systems. It also provides knowledge in the use of wireless and DSP techniques in many application areas including Internet of Things, medical, geophysical, aerospace, automotive and environmental systems.

The degree provides a placement in either industry or research. Our dedicated Knowledge Business Centre maintains links to over 500 partner companies to ensure that students can apply their knowledge and skills in a real-world industry. Graduates from this course are actively sought after by employers in mobile and wireless industries.

### Modules

- A Research or Industrially Focused Dissertation
- Advanced Communications
- Advanced Filters and Systems
- Digital Communications
- Digital Signal Processing
- Professional and Research Methodology
- Research or Industrial Placement
- Speech and Image Coding
- Wireless Broadband

### Director of Studies:
Professor Zhiguo Ding

### Duration:
12 months, full-time or 24 months, part-time

### Entry requirements:
Second class honours degree, or its equivalent, in Electronic/Electrical Engineering, Control, Computer Science/Computer Engineering, Physics or Mathematics. Relevant industry experience may be considered.

### Assessment:
Coursework, exams and dissertation

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For more information please visit [www.lancaster.ac.uk/sci-tech](http://www.lancaster.ac.uk/sci-tech)
The Engineering Department is a broad-based engineering centre with a record of innovative teaching, world-class research and integration with industry. The University has invested heavily in a flagship building that provides a world-class environment with specially designed workshops, teaching laboratories and office areas. In the latest Research Excellence Framework (REF 2014), 100% of our research was rated as world-leading and of international excellence for impact. We have also been recognised for the vibrancy of our research environment.

We offer taught courses at Masters level, PhD training and short courses for continuing professional development. Our postgraduate students are taught by, and work alongside, world-class academics in a wide range of engineering disciplines, and our strong industrial connections have allowed us to develop courses to meet the needs of industry. This, combined with our excellence in teaching and research, means that the Department is one of the top in the country for graduate employment success.

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Department facts

Head of Department: Professor Claudio Paoloni
Postgraduate enquiries
Recruitment Conversion and Marketing Coordinator: Lucy Carlin
Tel: +44 (0)1524 592275
Email: engineering@lancaster.ac.uk
www.lancaster.ac.uk/engineering

Number of postgraduate students: 140

Research degrees:

- Mechanical Engineering MSc/PgDip
- Electronic Engineering MSc
- Engineering (by Research) MSc
- Mechanical Engineering with Project Management MSc
- Engineering Project Management MSc
- International Innovation (Engineering) MSc
- Mechanical Engineering MSc/PgDip
- Mechanical Engineering with Project Management MSc

Research areas:

The Department has a wide range of research interests with an average annual research income in excess of £2.25m, nearly two thirds of which is in collaboration with industry. Research is split into five groups:

Chemical Engineering
The Chemical Engineering group researches numerous important aspects of Chemical and Biochemical Engineering, from fundamental science to engineering applications, working on scales that go from molecular-sized systems to large industrial plants.

E-MIT and Electronics
The E-MIT (Engineering of Microwaves, Terahertz and Light) and Electronics Group is a leading group focusing on research spanning digital electronics and materials to high frequency applications projected towards novel and fascinating frontiers of microwave, particle accelerators, terahertz radiation, mid-infrared photonics and novel artificial functional materials.

Nuclear Science and Engineering
Lancaster hosts one of the UK’s strongest university-based nuclear research centres with internationally-recognised capabilities in nuclear safety and policy, radiation detection and safeguards, control and robotics, decommissioning and waste management, nuclear process chemistry, and environmental behaviour.

Structures, Materials and Manufacturing
The Structures, Materials and Manufacturing Research Group is a multidisciplinary research cohort running a broad programme of coordinated research activities enabling in-depth understanding of fundamental and applied aspects of functional materials, composite systems, production processes and technologies and structural health monitoring.

Business engagement:

Gaining experience and skills
Preparing for your future career is important. Our staff have established relationships with a range of large and small organisations in the north-west and we link practical work and projects to these companies throughout the programmes. We provide all engineering students with the opportunity to apply for work experience through the Faculty Internship programme. Internships allow you to apply your academic knowledge in real-world situations - and get paid for it! You can also develop transferable skills such as team working, time management, leadership, networking, and commercial awareness.

Many employers use postgraduate interns to test out a new role and frequently offer them employment as a result. Previous internship roles have included a researcher for Amey and United Utilities, product development for a filter manufacturer, design development for a nuclear safeguards manufacturer, and draftsperson for a horticultural device manufacturer.

Energy
The Energy Research Group is committed to address major scientific and technological challenges faced by the UK and international communities in emerging energy technologies and sustainability.

£11.4m Collaborative Technology Access Programme (cTAP)
The new cTAP centre supports both small and large advanced manufacturing companies to develop new products and services by providing direct access to our expertise, equipment and facilities for the testing and manufacture of new chemicals, materials, semiconductor devices and products. Engineering student Christopher Hall completed a piece of research for Amey, a public services provider which works in alliance partnership with United Utilities to provide emergency responses to wastewater issues. Recommendations from Christopher’s research into jet hose failure rates were implemented by Amey and helped them win new business with larger companies.

For more information please visit www.lancaster.ac.uk/sci-tech
## Engineering

### Research degrees

#### Engineering | PhD

**Overview**
Applications for postgraduate study (full-time, part-time and industry-based) by research, leading to a PhD are welcomed. Research in the department is grouped into five main areas, each drawing on a range of different fields. The areas are:
- Chemical Engineering
- Engineering of Microwaves, Terahertz and Light (E-MIT)
- Energy
- Nuclear Science and Engineering
- Structures, Materials and Manufacturing

**Duration:** 3-4 years, full-time or 4-7 years, part-time
**Entry requirements:** Upper second class honours degree, or its equivalent, in an engineering or associated discipline. Relevant industrial or related experience will also be considered
**Assessment:** Original research and thesis

#### Engineering (by Research) | MSc

**Overview**
This programme is ideal for students with industrial experience who wish to work in a specific area, and prefer flexibility to the taught MSc programmes. Flexibility is the key to this programme. It begins with an induction where you are allocated a supervisor and often an industry contact; this sets the direction of your research and identifies training needs. The Graduate School’s research training programme offers a range of sessions to meet those needs. Regular supervision and access to seminar groups, together with interim research reports, ensures good progress towards a final dissertation.

There is an MSc by Research scholarship scheme supported by the Sir John Fisher Foundation and is open to students interested in nuclear or maritime engineering research.

**Duration:** 12 months, full-time or 24 months, part-time
**Entry requirements:** A second class honours degree, or its equivalent, in an engineering or associated discipline which may include communications, electrical engineering, computer systems and physics. A HND together with appropriate practical experience may also be acceptable
**Assessment:** Combination of coursework and/or examination and a major project/dissertation

With a state-of-the-art technological infrastructure our leading academics aim to tackle the big problems which our world faces today. We collaborate with other universities and companies, both locally and on a global scale, to open new frontiers in cutting-edge research. Our excellent teaching is kept current by this pioneering research, allowing us to offer up-to-date programmes which are also relevant for industry.”

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### Taught programmes

#### Electronic Engineering | MSc

**Overview**
Taking electronic engineering to the next level by adding high frequency devices, micro sensors, micro actuators, biology and novel materials is one of the primary goals of engineers and scientists within the electronic community. This course focuses on miniaturised systems which are able to describe and diagnose a situation, detect critical conditions, and identify and address each other. They may also be energy autonomous and networked. Students will also learn how to design advanced circuits for high frequency applications.

The course will also include methods of building control loops and associated software; the design of analogue and digital electronic interfaces; and the manufacture of novel packaging technologies.

The dissertation will be on a major industrial project.

**Modules**
- Smart Systems
- Intelligent Control
- Advanced Embedded Systems
- High Frequency Electronics
- Linking Group Project
- System on Chip Engineering

**Director of Studies:** Professor Andrew Richardson
**Duration:** 12 months, full-time or 24 months, part-time
**Entry requirements:** A second class honours degree, or its equivalent, in an engineering or associated discipline which may include communications, electrical engineering, computer systems and physics. A HND together with appropriate practical experience may also be acceptable
**Assessment:** Combination of coursework and/or examination and a major project/dissertation

**Modules**
- Principles of Project Management
- Project Leadership
- Advanced Project and Programme Management
- Commercial Aspects of Programme Management
- Linking Group Project
- Individual Project

Plus three other modules offered by the department. Options include:
- Intelligent Control
- Mechanics and Actuators
- Renewable Energy
- Smart Systems
- Electrochemical Engineering
- Nuclear Fuels Engineering

**Director of Studies:** Dr Andrew Pinkerton
**Duration:** 12 months, full-time or 24 months, part-time
**Entry requirements:** A second class honours degree, or equivalent, in an engineering or technical subject. Relevant further learning and experience is preferable but not essential
**Assessment:** Combination of coursework, examination, presentations, projects and dissertation

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For more information please visit [www.lancaster.ac.uk/sci-tech](http://www.lancaster.ac.uk/sci-tech)
International Innovation (Engineering) | MSc

Overview
This unique MSc offers a ground-breaking curriculum that blends general and specialist modules in electronic engineering and mechanical engineering with wider interdisciplinary and practical training. So, as well as core engineering modules you will take introductory modules in management and design delivered by Lancaster University Management School and Imagination, Lancaster. Chinese language, cultural and business seminars will allow you to benefit from a rich and distinctive learning experience, including a two-week study visit to China. You will build on your academic and practical experience to develop and deliver an in-depth innovation-themed project in collaboration with a UK company. Our highly supportive learning environment will help you to acquire a deep understanding of advanced technical skills in engineering, coupled with the processes and techniques needed to apply innovation globally.

The course will give you specialist skills in engineering and a solid foundation of knowledge, skills and expertise in the areas of technology, design and management, as you become part of a group of like-minded, multidisciplinary students, entrepreneurs and businesses.

You will be able to use your practical, language and cultural skills as a launch pad for your future career: establishing a global venture, joining an international organisation, government institution, or pursuing further academic studies.

Modules
- Core modules:
  - System Design and Modelling
  - Intelligent Systems Control
  - Linking Group Project
- Specialist modules in either Electronic Engineering, including:
  - Smart Systems
  - Advanced Embedded Systems
  - Electrical Power Systems Analysis and Modelling
- Or Mechanical Engineering, including:
  - Mechanics and Actuators
  - Advanced CAD/CAM
  - Renewable Energy
- Additional modules:
  - Corporate Entrepreneurship
  - Design Driven Innovation
  - Chinese Language and Culture (or equivalent for Chinese speakers)

Director of Studies: Dr Elina Ioannou
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: An upper second class honours degree, or its equivalent, in a related technological subject, depending on the exact modules to be taken. For electronic modules, a degree in Electronic and Electrical Engineering would be required. For the mechanical modules, a degree in Mechanical Engineering, or equivalent, would be required. Relevant industry experience may be considered
Assessment: Combination of coursework and/or examination, project work and dissertation

Mechanical Engineering with Project Management | MSc

Overview
The Mechanical Engineering with Project Management programme is aimed at engineers wishing to advance or update their engineering skills and knowledge base. The taught modules cover a broad range of engineering design and evaluation skills and how they can be applied to mechanical products and systems. In addition you will learn the key concepts and issues associated with engineering project leadership and organisational behaviour together with the project management processes, tools and techniques required to handle them.

The programme is taught with a strong practical focus and includes projects with local companies, case studies, workshops, and a substantial summer project.

Modules
- Intelligent System Control
- Mechanics and Actuators
- Advanced CAD/CAM
- Design and Modelling of Systems
- Renewable Energy
- Linking Group Project
- Individual Project

Director of Studies: Dr Andrew Pinkerton
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: A second-class honours degree, or its equivalent, in Mechanical Engineering or related disciplines, or Physics. HND or equivalent together with appropriate industrial experience may be considered
Assessment: Coursework and/or examination and a major project

Mechanical Engineering | MSc/PgDip

Overview
Mechanical engineering is the basis of just about anything that has movable parts, which includes areas like transport (automotive, railway, aerospace), renewable energy, and manufacturing. These areas will continue to be important to the UK economy and to all developed economies.

The taught part of this course consists of six compulsory modules. An individual industrial project allows you to extend your knowledge by exploring an area that interests you, whilst giving experience of the way in which a complete product or process requirement would be addressed.

The PgDip covers a selection of taught modules, with no individual project. Students may progress to an MSc given good results.

Modules
- Intelligent System Control
- Mechanics and Actuators
- Advanced CAD/CAM
- Design and Modelling of Systems
- Renewable Energy
- Linking Group Project
- Individual Project

Director of Studies: Dr Sarah Green
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: An upper second class honours degree, or its equivalent, in Mechanical Engineering or related disciplines, or Physics. HND or equivalent together with appropriate industrial experience may be considered
Assessment: Coursework and/or examination and a major project

This MSc has provided me with knowledge in project management and leadership, in addition to advanced mechanical engineering skills, which I am confident are a passport to successful entry to many jobs in the future.”

Elina Ioannou, MSc Mechanical Engineering with Project Management

For more information please visit www.lancaster.ac.uk/sci-tech
Graduate School for the Environment. A world-leader in environmental study and research.

Lancaster’s new Graduate School for the Environment harnesses the power of three of the world’s foremost research organisations to give students the best possible chance of enjoying productive, impactful and influential careers.

Students at the Graduate School benefit from the expert knowledge and experience of world-leading staff from the Lancaster Environment Centre, Rothamsted Research and the Centre for Ecology and Hydrology. Together this amounts to a support framework of unparalleled breadth and depth.

As a student at the Graduate School, you are a valued member of a stimulating international community of researchers with a diverse range of backgrounds, interests and specialisms. What unites us all is the excellence of our teaching and a shared focus on the world’s environmental challenges.

At the Graduate School you will be encouraged to look outwards rather than inwards, focusing on real-world challenges and developing the research, practical skills and connections you need to address them.

The combined international reach of Lancaster Environment Centre, Rothamsted Research and the Centre for Ecology and Hydrology opens up a world of opportunity for you as a Graduate School student – both during and after your studies.

Research areas:

To give students the best possible chance of enjoying productive, impactful and influential careers.

Atmospheric Sciences

Our research in atmospheric composition, including remote sensing and modelling of atmospheric processes, from local to global scales, is conducted in an Earth system or “sustainable atmosphere” framework.

Earth Sciences

Our specific aims are to mitigate natural hazards through understanding the fundamental physical and chemical processes involved. We develop quantitative methods for characterising and monitoring geological environments and for palaeoclimate reconstruction.

Ecology and Conservation

Our research uses molecular, behavioural and ecological techniques to understand how ecosystems function, how they respond to global change, and how they can be managed to enhance biodiversity and its associated services.

Environmental Chemistry

Our research aims to improve the fundamental understanding of how chemicals behave in the environment. We work closely with policy makers to help them assess the risks and benefits of environmental chemicals, and with industry, helping to develop chemicals that do not cause harm to the environment or humans.

Plant and Crop Science

We combine cutting-edge research in plant science, from the molecular to the crop scale, with other disciplines in both the natural and social sciences. By working closely with end-users, our research has a clear, practical focus on sustainable agriculture and so can help address the ecological, economic and social challenges facing crop production in a rapidly changing global environment.

Society and Environment

We focus on the critical investigation of global socio-environmental challenges, engaging in cutting-edge research and excellent teaching in human and environmental geography. Combining empirical and theoretical approaches, we drive research on socio-environmental topics.

Water and Soil Sciences

Our water research takes the latest discoveries in water science and works with the world-wide water industry, policy makers and others to deliver innovative solutions for a sustainable supply of clean water for everyone.
Lancaster Environment Centre

Research degrees

Biological Science | PhD
Environmental Science | PhD
Geography | PhD

Overview
A great strength of LEC is its ability to share expertise and ideas from many disciplines in order to provide a flexible approach, which is so important in the dynamic, rapidly developing discipline of environmental science. Although the work is often organised within themes and research groups, there is much collaborative activity transcending these boundaries.

Duration: 36-48 months, full-time or 48-84 months, part-time
Entry requirements: Upper second class honours degree, or its equivalent, in a relevant subject, supplemented by a Masters qualification, and a viable research topic
Assessment: Original research and thesis/collection of published papers

Ecology (by Research) | MSc
Environmental Science (by Research) | MSc
Plant Sciences (by Research) | MSc

Overview
These programmes are suitable for those wishing to carry out a short, in-depth research project, and not attend taught programmes. The MSc by Research programmes consist of induction courses, an eight-month research project and a period to write it up. These degrees are carefully tailored to your interests, and can be particularly suitable for people undertaking research in a work-based context wishing to gain an academic qualification.

Duration: 12 months, full-time or 24 months, part-time
Entry requirements: Upper second class honours degree, or its equivalent, in a relevant subject. Industry-based experience will be considered, with demonstration of appropriate skills
Assessment: Original research and dissertation

Conservation and Biodiversity | MSc

Overview
This scheme offers great flexibility of choice with a wide range of modules to meet the needs or interests of any student of ecological or conservation sciences. This vocational degree offers you the chance to blend ecological and environmental science topics with those from areas such as social science, geography and statistics.

You will gain an understanding of the relationships between living organisms and their physical, chemical and biotic environment whilst learning important skills related to environmental monitoring and management.

Graduates have gone on to careers in the environmental and conservation sectors, as well as further study for a PhD.

Modules on offer include:
- Conservation Biology
- Data Analysis and Interpretation
- Food Security, Agriculture and Climate Change
- Geoinformatics
- Habitat Management
- Lake Ecology
- Natural Resource and Environmental Governance
- Sustainable Soil Management
- Using the National Vegetation Classification
- Wildlife Monitoring Techniques
- Wildlife Population Ecology

Other modules available can be found on page 33 or on our website.

Director of Studies: Dr Ian Hartley
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: An upper second class honours degree, or its equivalent, in a relevant subject. We can also consider applicants with a lower second class (or equivalent) if they have relevant work experience (including voluntary work)
Assessment: Coursework, presentations, examinations and dissertation

Environment and Development | MA/MSc

Overview
The need for sustainable development is a global concern. This scheme aims to prepare you to address the challenges faced in safeguarding the planet’s ecosystems while improving the environments of impoverished communities. You can take either the MA or MSc, depending on your choice of dissertation. The scheme has a broad choice of optional modules, combined with the specialisation of the dissertation project, which includes the option of overseas fieldwork. This programme provides the ideal education for anyone interested in a career that will address environment and development issues, in the private, public, or not-for-profit sectors.

Modules on offer include:
- Behaviour of Pollutants in the Environment
- Conservation Biology
- Data Analysis and Interpretation
- Ecology, Conservation and Culture
- Globalisation and Democratisation
- Habitat Management
- Sustainable Soil Management
- Wildlife Population Ecology

Other modules available can be found on page 33 or on our website.

Director of Studies: Dr Yani Najman
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: An upper second class honours degree, or its equivalent, in a relevant subject. We can also consider applicants with a lower second class (or equivalent) if they have relevant work experience (including voluntary work)
Assessment: Coursework, presentations and dissertation

For more information please visit www.lancaster.ac.uk/sci-tech

I chose Lancaster University because the Lancaster Environment Centre has such a strong reputation in the environmental science field, and most importantly, my supervisor is one of the most famous scientists in our field.”

Dr Chang’er Chen
PhD
For more information please visit www.lancaster.ac.uk/sci-tech
For more information please visit www.lancaster.ac.uk/sci-tech

Taught programmes

Human Rights and the Environment | LLM

Overview
This joint programme with the Law School is intended to appeal to students who wish to study the environmental aspects of law and human rights or the legal regulation of the environment through human rights at Masters level. The programme has a flexible pathway of study with students taking three modules from Law and three modules from the Lancaster Environment Centre as well as a dissertation.

Modules on offer include:
- Chemical Risk Assessment
- Either Environmental Law or International Environmental Law
- Food Security, Agriculture and Climate
- International Human Rights
- Perspectives on Environment and Development
- Rights of Peoples
- The Right to Adequate Food as a Human Right

Director of Studies: Dr Sophia Kopela
Duration: 12 months, full-time
Entry requirements: A good second class honours degree, in an appropriate discipline
Assessment: Coursework and dissertation

Volcanology and Geological Hazards | MSc

Overview
Volcanoes threaten millions worldwide and improved hazard mitigation is a high priority. Our MSc provides training in field, theoretical and laboratory volcanology, including a highly popular field course on Etna. Alongside specialist taught modules on volcanic and other geological hazards, additional modules provide broader training in environmental science, management and data analysis. You will join our active volcanology research group, conducting a research project alongside internationally recognised experts and participating in many seminars, workshops and discussions. This MSc is ideal preparation for PhD research or work in the environment sector, and suitable for students with a wide range of first degrees.

Modules on offer include:
- Data Assimilation and Integration
- Geoinformatics
- Geological Hazards
- Modelling Environmental Processes
- Natural Resource and Environmental Governance
- Physical Volcanology
- Volcanic Process Field Course

Director of Studies: Dr Hugh Tuffen
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: An upper second class honours degree, or its equivalent, in a relevant subject. We can also consider applicants with a lower second class (or equivalent) if they have relevant work experience (including voluntary work)
Assessment: Coursework, presentations, examinations and dissertation

International Innovation (Sustainability) | MSc

Overview
This unique MSc offers a ground-breaking curriculum that blends general and specialist modules in environmental sustainability, from the perspective of the contemporary environmental sciences, with wider interdisciplinary and practical training. So, as well as core modules in the Lancaster Environment Centre (LEC) you will take introductory modules in management and design (delivered by Lancaster University Management School and ImaginationLancaster). Chinese language, cultural and business seminars will allow you to benefit from a rich and distinctive learning experience, including a two week study visit to China. You will build on your academic and practical experience to develop and deliver an in-depth innovation-themed project in collaboration with a UK company, providing sustainable solutions to environmental challenges. Our highly supportive learning environment will help you to acquire a deep understanding of advanced technical skills in the environmental sciences, coupled with the processes and techniques needed to apply sustainable innovation globally.

You will be able to use your practical, language and cultural proficiency as a launch pad for your future careers: establishing a global venture, joining an international organisation, government institution, or pursuing further academic studies.

Modules on offer include:
- Perspectives on Environment and Development
- Environmental Auditing
- Environmental Aspects of Renewable Energy
- Agriculture and Climate Change
- Sustainable Soil Management
- Catchment Protection (field course)
- Contaminated Land and Remediation

Alternative pathways are available:
- Computer Science
- Design
- Engineering
- Entrepreneurship
- Telecommunications

Director of Studies: Dr Dayi Zhang
Duration: 12 months, full-time
Entry requirements: An upper second class honours degree, or its equivalent, in a relevant subject. Relevant industry experience may be considered
Assessment: Coursework, presentations and collaborative projects
Lancaster Environment Centre

Taught programmes

Flood and Coastal Risk Management | PgCert

Overview
As the UK recovers from the impact of flooding and coastal storms, following the wettest winter in almost 250 years, the importance of understanding and managing risks to our environment in the face of increased frequency of extreme weather and climate change is becoming recognised. This unique course provides flexible and accessible postgraduate training which is focused on the practical application of skills and best practice industry standard techniques in the context of the latest legislation, guidance and policy.

You will benefit from industry leading technical expertise as the course is delivered in partnership with JBA Consulting, a specialist water environment and flood risk management consultancy.

Director of Studies: Dr Nick Chappell
Duration: 2-3 years, part-time
Entry requirements: We recognise prior learning and experience, and you don’t necessarily need a degree to apply
Assessment: Coursework

Modules on offer include:
- Catchment Hydrology and Assessment
- River Hydraulics: Processes, Structures and Modelling
- Coastal Erosion and Flood Risk Management
- Forecasting and Extreme Event Response
- Integrated Systems for Sustainable Surface Water Management
- Sustainable Floodplain Management and Restoration

Optional modules on LEC taught programmes include:
- Behaviour of Pollutants in the Environment
- Catchment Protection (field course)
- Chemical Risk Assessment
- Climate Change and Society
- Conservation Biology
- Contaminated Land and Remediation
- Crop Protection
- Data Analysis and Interpretation
- Data Analysis and Programming Skills
- Data Assimilation and Integration
- Ecology, Conservation and Culture
- Environment and Culture
- Environmental Aspects of Renewable Energy
- Environmental Auditing
- Environmental Law
- Environmental Sampling and Analysis for Trace Organics
- Food Security, Agriculture and Climate Change
- Geoinformatics
- Geological Hazards
- Global Change and the Earth System
- Globalisation: Its meanings, Causes and Consequences
- Groundwater Resources and Protection
- Habitat Management
- International Environmental Law
- International Human Rights Law
- Issues and Practice in Diplomacy and Foreign Policy
- Lake Ecology
- Major Approaches to the Study of International Relations
- Modelling Environmental Processes
- Natural Resource and Environmental Governance
- Nuclear Engineering Systems
- Numerical Skills
- Perspectives on Environment and Development
- Physical Volcanology
- Pollution Microbiology
- Renewable Energy
- Research Methods in the Social Sciences
- Right to Adequate Food as a Human Right
- Sustainable Soil Management
- The Rights of Peoples
- Theories and Concepts in Diplomacy and Foreign Policy
- Volcanic Process Field Course
- Wildlife Monitoring Techniques
- Wildlife Population Ecology

For more information please visit www.lancaster.ac.uk/lec/postgraduate

Food Challenges for the 21st Century | PgCert

Overview
One of the most significant challenges currently facing humankind is to make enough food for an active healthy lifestyle, available to a population which will probably rise beyond nine billion within the next 30 to 40 years. There are many factors that combine to impact food availability and the access that people have to food. Food production is prominent among these factors, but we can also feed more people if we distribute food more effectively and waste less food. In addition, other factors such as the state of the economy, climate change and the effects of the food production system on the environment need to be taken into account when considering the future sustainability of our food system.

This PgCert provides an opportunity for flexible and accessible postgraduate learning and professional development, for those who are unable to commit to full-time study. It is delivered by blended learning, which consists largely of online material to allow flexible working, together with short residential schools.

Director of Studies: Professor Bill Davies
Duration: 2-3 years, part-time
Entry requirements: Professional experience of working in the food chain. We recognise prior learning and experience, and you don’t necessarily need a degree to apply
Assessment: Essays, online discussions and short answer worksheets

Modules on offer include:
- Consumers and Retailing
- Crop Production and Supply
- Economics and Logistics of the Food Chain
- Food Quality, Nutrition and Food Safety
- Post-Harvest Management
- Food Security: The Impending Storm
- Food Waste, Supply Chain Management and Consumer Behaviour
- Pests and Diseases, Pest Management and Pesticides
- Skills, Natural Capital and Sustainable Resource Management

Most schemes have a set of core modules and a choice of optional modules. Further details of these can be found at www.lancaster.ac.uk/lec/postgraduate
Mathematics and Statistics

Department facts

Head of Department: Professor Andrey Lazarev

Postgraduate enquiries: Postgraduate Coordinator: Jane Hall
Tel: +44 (0)1524 593964
Email: j.hall2@lancaster.ac.uk

Admissions enquiries:
MSc admissions: Dr Jenny Wadsworth
Tel: +44 (0)1524 594020
Email: j.wadsworth@lancaster.ac.uk

PhD admissions - Statistics: Dr Juhyun Park
Tel: +44 (0)1524 593836
Email: j.phd@lancaster.ac.uk

PhD admissions - Pure Mathematics: Professor Gabor Elek
Tel: +44 (0)1524 594746
Email: g.elek@lancaster.ac.uk

www.lancaster.ac.uk/maths

We are one of the UK’s top departments for world-leading research, ranked joint 5th in the Research Excellence Framework 2014. We offer a variety of opportunities for postgraduate study in pure mathematics and statistics, including taught Masters (MSc), Masters by research (MRes) and PhDs. We have a vibrant community of academics, support staff and students from around the world. Our excellent facilities include dedicated teaching, learning, computing and research spaces.

Our established research links with business, industry and government provide expertise in pure mathematics, statistics, medical statistics and social statistics. We are part of the North West Hub for Trials Methodology Research and a founder member of several national PhD training consortiums in statistics, social statistics, mathematics and operational research.

In 2010, we were awarded funding to develop a Centre for Doctoral Training (STOR-i) combining statistics, operational research and industrial applications. We are producing a new generation of researcher, capable of creating an impact in these areas. This Centre has fully funded 40 students since 2010 and is due to fully fund at least 60 further students entering the Centre for Doctoral Training in 2014 – 2019. We are also part of the North West Doctoral Training Centre (NWDTC) and offer a pathway of study in social statistics.

Research degrees:
- Statistics PhD
- Mathematics PhD
- Applied Social Statistics (NWDTC) PhD
- Statistics and Operational Research (in partnership with industry) (STOR-i) PhD/MRes

Taught programmes:
- Data Science MSc
- Quantitative Finance MSc
- Statistics MSc/PhD

Department facts

Statistics

The Statistics Group is interested in the development of novel statistical models and methods motivated by applied problems, with particular emphasis on environmental, biomedical and social sciences. Methodological strengths include change point methods, computationally intensive methods, design and analysis of clinical trials, epidemic modelling, extreme value methods, locally stationary processes, longitudinal models, spatial statistics, spatial genetics, statistical learning, stochastic modelling, survival analysis and time series modelling.

There is a strong emphasis on the interface between theory and application, and the group has close research links with other university departments, government departments and research institutes, a wide range of industries including multinationals and SMEs, hospitals, and pharmaceutical companies within the UK and overseas.

Research areas:

Statistics

- Specific topics include: Algebraic Topology, Banach Algebras, Discrete Geometry, Group Theory, Graph Theory, Homological Algebra, Lie Theory, Mathematical Physics, Operator Algebras, Probability Theory (including Noncommutative Probability), Quantum Algebra, Quantum Field Theory, Random Matrix Theory, Representation Theory, Spectral Theory and Stochastic Analysis.

Pure Mathematics

Research interests are broad and cover areas of algebra, geometry, analysis, probability and combinatorics. There is also research that interfaces algebra, geometry and rigidity theory.

Business engagement:

Gaining experience and skills

Gaining work experience while you are at university is crucial to achieving a good graduate job. Students and recent graduates can apply for relevant paid work experience through the Faculty of Science and Technology Internship Programme. Internships offer you the opportunity to apply your academic knowledge in real world situations - and get paid for it.

They will help you develop transferrable skills such as team working, time management, leadership, networking and commercial awareness.

Many employers use internships to test out a new role and frequently offer graduate roles to interns.
Mathematics and Statistics

Research degrees

Statistics | PhD
Mathematics | PhD

Overview

Our research expertise is in algebra, analysis, probability, statistical methodology, and medical and social statistics.

Students will have a formal weekly meeting with their supervisor, supplemented by more frequent, informal contact. Our postgraduate instruction is through either intense lectures (on- or off-campus) under the APTS scheme (Statistics), or term-length courses delivered by video-link, under the MAGIC scheme (Pure Mathematics). Any remaining skills gaps will be covered through additional lectures or directed reading. Students are encouraged to participate in appropriate seminars which provide an ideal opportunity to gain valuable experience of communicating ideas to an audience while also receiving feedback; they also help to set future research directions.

Students will have their own laptop, and are generously supported to attend and present work at conferences.

Duration: 3 years, full-time
Entry requirements: Upper second class honours degree, or its equivalent, in Mathematics, Statistics, or a combination of the two
Assessment: Original research and thesis

Applied Social Statistics (NWDTC) | PhD

Overview

This scheme, with funding from the North West Doctoral Training Centre, draws upon the acknowledged strengths of social science and social statistics; with the balance between the statistics and substantive components of the research tailored to your interests and background.

We encourage joint supervision by the Department and a social science or related department across the three North West universities (Lancaster, Liverpool and Manchester), thus increasing the scope and potential focus of your research.

The programme is suitable for a range of purposes, notably: social science graduates interested in quantitative empirical work and statistics graduates wishing to develop applicable expertise in social statistics.

Depending upon prior statistical learning, there is an option of studying for an MSc before progressing to the PhD.

Director of Studies: Professor Brian Francis
Duration: 3 years, full-time (PhD) or 4 years, full-time (MSc and PhD). Part-time study is also possible
Entry requirements: Upper second class honours degree, or its equivalent, in Statistics, Social Science or a relevant related discipline, or relevant professional qualification or experience
Assessment: Original research and thesis

Statistics and Operational Research (in partnership with industry) (STOR-i) | PhD/MRes

Overview

This programme offers a ground-breaking approach to statistics and operational research, developed in conjunction with leading industrial partners. There are typically over ten fully funded places annually.

Collaboration with our industrial partners, such as BT, IBM and AstraZeneca, ensures that we produce a generation of highly skilled researchers prepared for careers in academia or industry.

Commencing with an MRes, which provides a robust grounding and the development of research skills, you will identify a topic and plan your PhD research. You will also develop a versatile skill set including advanced problem solving, programming, and a broad range of presentation and dissemination skills.

The remaining three years will be spent working on the PhD project guided by appropriate supervisory teams, whilst taking a range of training programmes and experiencing visits to world-leading universities.

Modules

Compulsory modules:
- Training for Research and Industry
- Probability and Stochastic Processes
- Optimisation
- Likelihood Inference
- Bayesian Inference
- Computational Intensive Methods

Optional modules:
- Leadership and Project Management Training
- Communication Training
- Research Integrity
- Continual Professional Development in Statistics and Operational Research
- Computational Horizons

Director of Studies: Professor Jonathan Tawn
Duration: 4 years, full-time
Entry requirements: First class honours degree, or its equivalent, in an undergraduate course with a substantial mathematical content
Assessment: MRes: coursework and exam; PhD: original research and thesis

The distinctive feature of statistics research at Lancaster is that methodological innovations are motivated by, and fed back into, substantive applications in the natural, biomedical and social sciences. We have particular strengths in computational statistical methods; longitudinal data analysis and extreme value theory."

Professor Paul Fearnhead
Mathematics and Statistics

Taught programmes

Data Science | MSc

Building upon data science fundamentals, this programme allows for specialism in computing or statistical inference with designated pathways spanning, for example, technologies, statistical modelling, business analytics, health and society. For further information please see the entry under Computing and Communications.

Quantitative Finance | MSc

Overview
This one-year interdisciplinary MSc programme delivered by the Management School and the Faculty of Science and Technology is designed to give you in-depth knowledge of the problems and issues in the financial sector, and enables you to develop advanced analytical, problem-solving and technical skills.

The programme gives you access to expertise and facilities in different but related areas, and offers a wide range of potential topics for your summer dissertation. Optional modules also allow you to develop particular specialisms.

You will acquire skills in data and financial analysis, forecasting, optimisation, and computer programming. You'll also become proficient in various statistical and econometrics packages.

Modules
- Derivative Pricing
- Microeconomics for Money, Banking and Finance
- Financial/Econometrics
- Financial Programming
- Financial Stochastic Processes
- Financial Markets
- Optimisation
- Statistical Methods for Financial and Economic Applications

Statistics | MSc/PgDip

Overview
This MSc has a strong theoretical and methodological component to supplement a focus on applications of statistics to real-life scientific problems. You can opt to follow pathways in medical, pharmaceutical or environmental statistics, depending on your field of interest. Graduates tend to enter careers as practising statisticians, university research assistants or go on to study for a PhD.

For each pathway, you will follow a set of compulsory modules covering core theory and methods, applied statistical modelling and practical skills in topics such as statistical computing, scientific writing, presentation and consultancy. You will also study optional modules tailored to your research interests and career aspirations. Your studies are completed with a supervised, in-depth, dissertation aimed at solving a substantive research question.

Modules
- Compulsory modules:
  - Statistics in Practice
  - Likelihood Inference
  - Generalised Linear Models
  - Bayesian Inference
- Computational Intensive Methods
- Optional modules (choose five from):
  - Extreme Value Theory
  - Clinical Trials
  - Principles of Epidemiology
  - Statistical Genetics and Genomics
  - Longitudinal Data Analysis
  - Pharmacological Modelling
  - Survival and Event History Analysis
  - Adaptive/Bayesian Methods in Clinical Research
  - Environmental Epidemiology

Director of Studies: Dr Deborah Costain
Duration: MSc: 12 months, full-time or 24 months, part-time
PgDip: nine months, full-time
Entry requirements: Second class honours degree, or its equivalent, in a subject with a strong mathematics or statistics component
Assessment: Coursework, examination and dissertation

Physics

With over 150 staff and postgraduate students from across the world, we are one of the top departments for research, ranking 2nd in the UK (REF 2014) for the number of research outputs judged as internationally excellent (4 star). Our research is concentrated on the experimental and theoretical aspects of Astrophysics, Condensed Matter Physics, Particle and Accelerator Physics, and Theory/Mathematical Physics. It is supported by 94 grants of over £26.8m. There are numerous funded collaborations with overseas laboratories, as well as major European networks.

As a postgraduate student in the Physics Department you will be provided with training in transferrable and research skills, and the technical training applicable to your research area. We provide dedicated outreach training to enable you to communicate your science to a broad community from school children through to subject experts. These training opportunities are provided by your research group, as well as by the Department, Faculty and University. These skills will equip you for an international career in science.

We have a state-of-the-art Quantum Technology Centre with molecular beam epitaxy facilities, specially equipped laboratories for III-V semiconductor nanostructures and devices, and micro and nanofabrication clean-room equipment with e-beam lithography. Characterisation facilities include a FEG SEM, picosecond lasers covering visible and mid-IR range, photo and electro-luminescence in magnetic fields and a unique nanomechanical and nanothermal scanning probe microscopy suite. The new ultra-isolation lab will enable most sensitive measurements in the absence of spurious electromagnetic field and mechanical vibrations.

Our computing facilities include Linux workstations, grid networking, and a £1.1m Beowulf class computer. The University also has a high-end computing service with 5000 CPU cores and the capability for GPU-accelerated computation.

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Research degrees:
- Physics PhD
- Nanoscience PhD
- Physics MSc (Research)
Physics

Research degrees

**Physics | PhD**

**Overview**

We welcome applications from those seeking to perform research for a PhD in Physics. Research opportunities are available within each of our research areas, which cover both theoretical and experimental aspects, and are grouped into the four broad research divisions of Astrophysics, Accelerator and Particle Physics, Experimental Condensed Matter, and Theory.

There is vigorous cross-divisional activity, which includes studies of new materials such as graphene and molecular nanowires, cosmological experiments in liquid helium, nonlinear dynamics of biological rhythm and IR spectroscopy, and nanoscale probe microscopy of biological objects.

Our degree schemes emphasise the development of transferrable skills, such as critical thinking, communication skills, numeracy, literacy, team working, and computing and computational skills, which are in much demand amongst employers.

Students will also have the opportunity to attend specialist training courses as well as the Faculty of Science and Technology Research Training Programme.

**Postgraduate Academic Advisor:** Dr Jaroslaw Nowak

**Duration:**
- 36-months, full-time (or pro-rated part-time)

**Entry requirements:**
- Upper second class BSc or MPhys degree in Physics, or its equivalent, in a relevant subject

**Assessment:**
- Original research and thesis

**Nanoscience | PhD**

**Overview**

This PhD offers research in nanoscience and nanotechnologies which is excelled by the experimentalists in the Quantum Technology Centre and theorists in the Centre for Nanoscale Dynamics at Lancaster.

In experimental nanoscience we offer projects in quantum technologies and development: studies of superconductor and semiconductor qubits and quantum circuits; quantum metrology; development of quantum dot systems for quantum key distribution; studies of atomic two-dimensional materials including graphene, boron nitride, hexagonal metal chalcogenides and their heterostructures; development and applications of new scanning mechanical and thermal microscopy techniques; development of novel nanostructured materials for telecommunications and for energy applications. We study nanostructures at the record-breaking low temperatures, in a sub-mK range.

In theoretical nanoscience, we offer projects in quantum transport and quantum Hall effect, mesoscopics and fundamentals of nanoelectronics; single-molecule electronics; quantum optics; quantum information processing. We develop theories of new atomic two-dimensional materials using the first principles density functional theory, quantum Monte Carlo modelling, and phenomenological theories. We develop theories of dynamics and kinetics in quantum systems in strongly non-equilibrium conditions using field theory methods. On the side of applied nanoscience, we model devices for electronics and optoelectronic applications.

We collaborate with world leading companies including Bruker, Fot, and Oxford Instruments. The programme is supported by a selection of training courses providing skills in modern research techniques, special scientific training and transferrable skills courses.

**Postgraduate Academic Advisor:** Dr Benjamin Robinson

**Duration:**
- 36-months, full-time (or pro-rated part-time)

**Entry requirements:**
- Upper second class BSc or MPhys degree in Physics, or its equivalent, in a relevant subject

**Assessment:**
- Original research and thesis

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Business engagement:

**Working in partnership:**

We have collaborations with major international manufacturing and ICT corporations such as BIP Exploration, IBM, Alcatel, Pilkington Glass, Varta, Fiat and a range of medium sized research intensive companies within the UK and across Europe.

**Spin out companies**

You'll learn from experts who have also started their own businesses. We actively commercialise our research, and Spin-out companies include: Lancaster Material Analysis Limited, quantum technology company Quantum Base, and cryogenics consultancy Lancaster Cryogenic Limited.

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For more information please visit [www.lancaster.ac.uk/sci-tech](http://www.lancaster.ac.uk/sci-tech)
Research degrees

Physics | MSc (Research)

Overview
You can begin this programme at any time of the academic year, as agreed with your supervisor. You will define and manage an independent research project which will equip you for more sustained and original work at the doctoral level, or for advanced level applied research positions in a range of organisations.
The programme is flexible to support learning in a variety of educational and practical research contexts: either on campus or in industry.
There is a period of induction with a project supervisor where you will complete a learning plan and assess your research training development needs.
At the end of the third month (full-time) or sixth month (part-time) you will submit a report which will enable your supervisor to offer formative feedback on your writing skills, progress to date and ability to synthesise information.
Finally, you will complete a dissertation based on your research.

Director of Studies: Dr. Jaroslaw Nowak
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: Upper second class honours degree, or its equivalent, in a relevant subject
Assessment: Original research and dissertation

The MSc by Research facilitates well focused, bespoke and novel research projects which are ideal for solving specific fundamental or applied physics problems, or for students who wish to gain independent research skills without a three year commitment.”

Oleg Kolosov,
Professor of Experimental Condensed Matter Physics

Studying physics at Lancaster is a complete experience: top-quality research environment including high-level facilities and dynamic researchers, a super-efficient department composed of sympathetic staff and overall a mixed atmosphere of excellence and cheerfulness. Working here is also about collaborations with national and international leading groups. In short, Lancaster is a very good choice both for the professional and personal experiences.”

Jean Spiece,
PhD student
Psychology

Department facts

Head of Department:
Professor Kate Cain

Postgraduate Coordinators:
Clare Race and Nadine Wilson

Tel: +44 (0)1524 594975
Email: postgraduate.psychology@lancaster.ac.uk

www.lancaster.ac.uk/psychology

Our research is internationally recognised as being at the cutting-edge of developments in psychology. Our team of well-known researchers, who form our teaching staff, ensure that your studies are driven by the latest findings.

We are home to one of the largest developmental centres in the world, and boast a wide range of facilities to support and enhance your independent work.

Our expertise is strengthened by our relationships with key institutions such as The Leverhulme Trust and ESRC North West Doctoral Training Centre who invest time and money in research at Lancaster.

Research degrees:

- Psychology PhD

Taught programmes:

- Developmental Disorders MSc
- Developmental Psychology MSc
- Psychology of Advertising MSc
- Psychological Research Methods MSc
- Social Psychology MSc

Business engagement:

Gaining experience and skills

Gaining work experience while you are at university is crucial to achieving a good graduate job. Students and recent graduates can apply for relevant paid work experience through the Faculty of Science and Technology Internship Programme.

Internships offer you the opportunity to apply your academic knowledge in real-world situations - and get paid for it! They will help you develop transferable skills such as team working, time management, leadership, networking, and commercial awareness.

Many employers use internships to test out a new role and frequently offer graduates further employment.

Research areas:

Infancy and Early Development

We are one of the largest groups world wide working on development in babies, from birth through to toddlers, including the investigation of how language is learned and how early communication leads to understanding of words. We explore how infants learn about the permanence of the physical world around them, how they learn to categorise objects, and how these categories support early word learning. Another focus is early social development: how do babies develop an understanding of others as human beings and how do they develop the ability to interact with others?

Language and Literacy

We explore language and literacy at multiple levels from phonemes to paragraphs, and beyond.

Our research aims to advance the understanding of a broad range of topics encompassing: mental representations of written and spoken language; language and literacy development across the lifespan from preschool through to older adults; the causes of reading and communication difficulties; the effects of different writing systems on reading development; and the cognitive resources that underpin language processing.

Perception and Action

Our research investigates human interactions with the world via sensory and motor processes.

We examine auditory neural coding, visual processing in complex environments, representation of time and space, sensorimotor grounding of concepts, and links between sensory systems and more central processes such as language, music, cognition, decision making, and emotion. We explore the role of sensory processes in deficits due to ageing and Alzheimer’s Disease, and in the use of sensory and motor measures as biomarkers for disease progression.

Social Processes

Our research examines the social and cognitive factors that shape our everyday lives at the individual and group levels, and through this aim to address contemporary social issues and challenges. This includes examining how our individual actions are shaped by non-conscious processes, how social identities, attitudes and categories affect our perceptions of others, how our values, beliefs, trust and emotions affect our decision making and social interactions, and the study of goals and motivation.

The Psychology Department is not only outstanding because of its high academic standards, but also because of its friendly and supporting environment.”

Marina Kalashnikova,
Psychology PhD

“Doing a Masters degree is simultaneously one of the most demanding and rewarding experiences you can have, and Lancaster’s Psychology Department provides a world-class teaching and research environment so our students can really make the most of their time here.”

Dr Dermot Lynott,
Director of PG Studies

For more information please visit www.lancaster.ac.uk/sci-tech
Research degrees

Psychology | PhD

Overview
A PhD consists of an extensive and coherent research programme, typically involving three to four years of full-time study. We welcome proposals for PhD research that offer programmatic ideas connected with staff research projects and interests. We think of PhDs as student-led yet collaborative research projects. We provide extensive support and training to ensure that PhD students are well-equipped to make their work productive, effective and influential, ultimately leading to a successful and timely submission of a PhD thesis.

Director of Studies: Dr. Rob Davies
Entry requirements: An upper second class honours degree, or its equivalent, in a relevant subject. We often recommend that applicants have a Master’s degree as foundational experience for a PhD programme, although this is considered on a case-by-case basis.
Assessment: Original research and thesis

Taught programmes

Developmental Disorders | MSc

Overview
In this programme, we aim to promote students’ knowledge of developmental psychology with a focus on atypical development across the lifespan. The degree builds on the Department’s research strengths in this area, with core material from course team members who specialise in Autism Spectrum Disorder, cognitive development in atypical populations and language and literacy development. You will acquire advanced knowledge of the theories and major findings in this field, and develop expertise in the methods and analytic techniques used in research.

The course is aimed at graduates wishing to enter an applied or research career in developmental disabilities, and is beneficial for students who wish to progress to a PhD in clinical, educational, or experimental psychology. It is also suited to those who wish to boost their research skills en route to, or after, behavioural therapy or clinical or educational psychology training.

Modules
Compulsory modules:
- Analysing and Interpreting Data
- Conducting and Presenting Psychological Research
- Developmental Disorders
- Developmental Psychology
- Research Dissertation

Optional modules (choose from topics in the following areas, which vary year-to-year and are aligned with our expertise):
- Applied Aspects of Psychology
- Cognitive Psychology
- Developmental Psychology
- Neuroscience
- Social Psychology

Director of Studies: Dr. Dina Lew
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: Normally an upper second class honours degree, or its equivalent, in Psychology or a related discipline
Assessment: Coursework and dissertation
Psychology

Taught programmes

Developmental Psychology | MSc

Overview
Lancaster is one of the largest centres for developmental psychology research in the world. This programme provides students with knowledge of advanced methods, analytical techniques, theories and major findings across a range of areas. The course is delivered through a variety of teaching methods, including lectures, interactive discussion sessions, direct practical experience of modelling developmental phenomena, plus the gathering, analysing and presentation of developmental data.

This course provides ESRC accredited training and is aimed at graduates who wish to progress to a PhD in Developmental Psychology, or seek to boost their research skills en route to clinical or educational psychology training, or for graduates who require additional developmental knowledge to apply to their work environment.

Modules
Compulsory modules:
- Advanced Aspects of Psychology
- Cognition
- Developmental Psychology
- Neuroscience
- Social Psychology

Optional modules (choose from the following areas, which vary year-to-year and are aligned with our expertise):
- Biological Psychology
- Cognitive Psychology
- Educational Psychology
- Developmental Psychology
- Health Psychology
- Social Psychology

Director of Studies: Dr Dina Law
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: Upper second class honours degree, or its equivalent, in Psychology or a related discipline
Assessment: Coursework and dissertation

Psychology of Advertising | MSc

Overview
Advertising is everywhere. Always transient, sometimes trivial, yet it can be incredibly powerful in changing our perceptions, our beliefs and our behaviour.

The ambition of this unique course is to provide an interface between theory and practice, understanding and skills, by giving a thorough grounding in the psychology underpinning persuasion in the context of how it is applied - and how it might be applied more radically - in the communications industry.

The course combines small-group ‘knowledge-exchange’ with innovative student-led teaching, built around outstanding expertise in cognitive, developmental, social and neuropsychological aspects of advertising, perspectives and contributions from both relevant academic researchers and seasoned advertising practitioners, original commercially-oriented research in groups, and hands-on experience within an optional commercial/third sector work placement.

This course is designed for graduates who come from a wide range of disciplines and plan to pursue a career in advertising or communications, or who wish to refresh their skills or shift focus to a more planning-based trajectory. It is also suitable for those who wish to undertake further research into the psychology of advertising and related fields at PhD level.

Modules
Compulsory modules:
- Advanced Advertising Theory
- Analyzing and Interpreting Data
- Conducting and Presenting Psychological Research
- Practical Advertising Research and Planning
- Psychological Aspects of Advertising
- Research Dissertation

Optional modules (choose from the following):
- Analyzing Talk and Text
- Decision Making
- Social Psychology

Director of Studies: Leslie Hallam
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: Upper second class honours degree, or its equivalent, in Psychology or a related discipline including marketing, media or business studies; a wide range of undergraduate subjects and/or relevant experience will be considered
Assessment: Coursework and dissertation

Psychological Research Methods | MSc

Overview
This recognised research training course provides students with knowledge of and experience in a wide range of research methods used in psychological research. In addition, it provides students with training in practical skills involved in conducting research, and in reporting research effectively both orally and in written forms of communication.

The course consists of small classes combined with an emphasis on individual tuition, a focus on ‘hands-on’ experience backed by appropriate theoretical knowledge, an availability of a wide range of options in areas of psychology in which the Department excels and makes use of excellent equipment and specialist research facilities.

It is especially suited to applicants who are considering doing a PhD, or wish to develop their research skills in preparation for further professional training (eg Clinical, Forensic, Educational, Health, Occupational Psychology), or who require additional training in psychological research methods to apply to their work environment.

Modules
Compulsory modules:
- Conducting and Presenting Psychological Research
- Analysing and Interpreting Data
- Research Dissertation

Optional modules (choose from topics in the following areas, which vary year-to-year and are aligned with our expertise):  
- Analyzing Talk and Text
- Developmental Disorders
- Developmental Psychology
- Literature Review
- Mental Health and Decision Making
- Psychological Aspects of Advertising
- Social Psychology

Director of Studies: Dr Rob Davies
Duration: 12 months, full-time or 24 months, part-time
Entry requirements: An upper second class honours degree in Psychology, or its equivalent, including research design and statistical methods
Assessment: Coursework and dissertation

“A degree from Lancaster is a special achievement. The tutors give you extra support and guidance to really develop yourself. The skills that I have gained along the way will be vital for anything that I go on to achieve in the future.”

Anna Wielawiska, PhD Psychology

For more information please visit www.lancaster.ac.uk/sci-tech
Course index

We offer a range of other subjects including Arts, Humanities, Social Sciences, Health, Medicine and Management. To find out more please see our website.

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