Course Overview

The MSc course prepares students for a career as a practising statistician, and also provides a springboard for further study towards a PhD. The course is Royal Statistical Society accredited and aims to provide a thorough training in modern statistical methods. This is achieved via a distinctive blend of core and leading-edge methods, as well as practical techniques. The curricula ethos is to approach teaching and learning from a data analytic and problem solving perspective; the underpinning theory providing a solid foundation on which to build. Key features of the course include:

- a research directed modular programme;
- flexibility to tailor the programme to interests;
- medical, pharmaceutical and environmental routes;
- extensive hands-on experience of modern computationally intensive methods;
- an in-depth project applying statistical methods to a substantive problem in scientific research;
- academic and pastoral support.

Lancaster University

Lancaster University is a modern, campus-based, university located 5km south of Lancaster’s historic centre. Lancaster is a small city located in the North-West of England, ideally situated, close to the coast and the Lake District and Yorkshire Dales National Parks. The city has a large student population, good motorway links, and it can be easily accessed by train and other public transport. The nearest international airport is Manchester (85 km). The campus comprises student residences, shops, banks, bars, and both indoor and outdoor sports facilities.

The Department and the Working Environment

The Department of Mathematics & Statistics was ranked 5th in the UK in The Research Excellence Framework, 2014, with the impact of research within statistics identified as a particular strength.

There is a vigorous statistical research community, of around 50 academic staff, 15 research associates and 50 research students, who create a stimulating environment in which to study. The group takes a leading role in the development of statistical methodology in Markov Chain Monte Carlo, particle filtering, statistical learning, extreme value theory, wavelets, analysis of longitudinal and spatial data, mixture modelling, survival analysis, multistate models, causal modelling and novel methods for early phase clinical trials. Details of staff and the departmental research interests can be found at:

www.lancaster.ac.uk/maths/research/statistics

Together with a strong reputation for internationally recognised research in statistics, the Department has a proven record for the provision of Master's and postgraduate level courses and teaching. The Postgraduate Statistics Centre, opened in 2008, provides a working base for Statistics MSc students and includes facilities such as a lecture theatre, seminar rooms, computer laboratories, open learning space and social areas.

Course Structure

The course occupies one year of full-time study, although part-time study over two years is available. The programme consists of a series of taught modules followed by the completion of a dissertation. The taught course component consists of:

- A set of core modules covering the underpinning theory and methods of statistical inference and modern computationally intensive methods;
- A set of optional modules covering a range of specialist/advanced statistical methods relevant to the design, analysis and interpretation of observational and experimental data;
- A compulsory module covering essential skills for the practising statistician.

Illustration of the modular content is provided below. Module specific details are available from the course web page: www.lancaster.ac.uk/maths/postgraduate/courses/statistics-msc/

Core Modules

- Likelihood Inference
- Bayesian Inference
- Generalised Linear Models
- Computationally Intensive Methods
- Statistics in Practice

Examples of Optional Modules

- Clinical Trials
- Principles of Epidemiology
- Statistical Genetics and Genomics
- Environmental Epidemiology
- Pharmacological Modelling
- Survival Analysis
- Extreme Value Theory
- Adaptive Methods in Clinical Research
- Longitudinal Data Analysis

The dissertation component consists of an in-depth project applying statistical methods to a substantive, and open, problem. The projects are often in collaboration with other departments, research organisations or industry. Recent industrial collaborators have included AstraZeneca, Shell, Unilever and GlaxoSmithKline. Inter-departmental collaborations have included the biological and environmental sciences and management and finance; research organisations have included the Health and Safety Executive and the National Health Service.
Optional Modules and Pathways

Students can follow a self designated program of study or, alternatively, can select their optional modules and dissertation topic to follow designated pathways in:

- Medical Statistics;
- Pharmaceutical Statistics and
- Environmental Statistics.

These topics reflect the research interests and expertise within the department and prepare students for career options in areas with high demand for trained statisticians.

Career Opportunities

Statisticians are in great demand in both public sector and private organisations. Lancaster’s MSc course combines modern statistical methodology with practical experience of dealing with real problems; a combination which leaves graduates well positioned to succeed in the job market. Our track record has been excellent with over 95% of our students over the past three years finding employment or research positions which require their Master’s level training.

Previous graduates of the MSc programme are now working in pharmaceutical companies, university schools of public health, financial organisations or studying for a PhD. More information regarding the first destinations of recent MSc Statistics graduates is available from the courses web page: www.lancaster.ac.uk/maths/postgraduate/courses/statistics-msc/

More generally, the Royal Statistics Society’s (RSS) website www.rss.org.uk/ provides indication of the range of opportunities for MSc Statistics graduates.

Course Pre-requisites

Admission to the course is typically based upon a BSc of at least second-class honours standard in a subject with a substantial component of mathematics and statistics.

Students whose first language is not English should demonstrate competence in English by passing IELT assessment at grade 6.5.

Funding Opportunities

The funding opportunities vary year on year; details are updated regularly on the courses webpage: www.lancaster.ac.uk/maths/postgraduate/taught-masters/funding/

For 2018/19 entry, three scholarships are available from the National Institute for Health Research (NIHR). These scholarships are open to UK and EU students and cover full fees and also a maintenance allowance to cover living costs of circa £14,000. Students are also eligible to compete for funding (fees only) from Amgen.

A small number of Faculty Bursaries are also available offering a fees reduction. Overseas applicants are eligible to apply for the Faculty Bursaries and are also encouraged to seek funding within their own countries.

All applicants who are eligible for funding from available sources will be considered automatically. It is, however, advisable that you express your intended source of funding in your application, with motivation.

Applications and Enquiries

The MSc course begins in October each year. Applications and enquiries are welcome at any time. However, those seeking funding should, ideally, apply early in the year. Interviews for funded places take place from February.

Applications are made on-line. The form can be accessed via the link: www.lancaster.ac.uk/study/postgraduate/how-to-apply-for-postgraduate-study/

Further information and course enquiries should be made in the first instance to the Postgraduate Secretary:

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