



MSc in Statistics

UCD School of Mathematical Sciences



Why is this course for me?

The M.Sc. in Statistics is aimed at students who have an undergraduate degree in Statistics or a degree in a discipline related to Statistics and with numerate skills. It consists of a mixture of compulsory and optional modules and a major project. Compulsory modules are intended to ensure all students have appropriate basic statistical skills, knowledge and experience, while optional modules provide depth and exposure to the diverse range of statistical applications and methods. This latter aspect provides students with the opportunity to specialize in specific areas. The major project provides the

students the chance to work extensively on either theoretical or practical problems. An M.Sc. in Statistics will open a host of interesting and rewarding career opportunities and gives skills that are much in demand. Former M.Sc. in Statistics students have found employment in industry, government, IT, economics and finance. Demand for graduates continues to be strong both in Ireland and abroad. The M.Sc. is also intended to be a good stepping stone for doctoral studies. The UCD MSc in Statistics is fully accredited by the Royal Statistical Society.

Why study at University College Dublin?

Some of the reasons to study at UCD:

- In the top 1% of the world's universities
- Ireland's largest provider of graduate education
- A diverse university, both in academic disciplines and culture
- Emphasis on research and innovation
- Purpose-built, modern parkland campus, close to Dublin city centre
- Extensive range of campus accommodation options.

UCD College of Science

The College is dedicated to the creation, delivery and communication of new knowledge and innovation across the spectrum of Science. With a staff of 750 and a student population of 5,500, including 1,800 postgraduate students, the College is a vibrant community dedicated to excellence in all our pursuits.

UCD School of Mathematical Sciences

The school is the largest of its kind in Ireland. It is a dynamic, multi-disciplinary department spanning the three disciplines of Mathematics, Applied and Computational Mathematics and Statistics and Actuarial Science. The school engages in research of international renown and teaches students in almost all of the colleges of the university. As well as having a strong commitment to basic research, several members in the school are involved in the UCD Complex Adaptive Systems Laboratory (CASL) and the Claude Shannon Institute for Coding, Cryptography and Discrete Mathematics.

What will I study?

You will study from a range of exciting topics taught by experts in these fields of study. In addition to the taught component, you will also get a chance to work on a research project and complete a dissertation. There are 90 credits of work to do spread over a full calendar year. You will complete modules with a total value of 60 credits and the remaining 30 credits are allocated to project work.

Modules offered change from year to year and the list includes:

- Mathematical Statistics
- Monte Carlo inference
- Actuarial Statistics
- Survival Analysis
- Data Mining
- Time Series
- Multivariate Analysis
- Linear Models with Complex Structure
- Experimental Design

Research - Dissertation

In addition to the course work, students undertake a research project (30 credits) supervised by a member of staff. The dissertation is a fairly substantial piece of work - one third of the overall workload in the M.Sc programme - much of which is done in the summer semester.

Staff Profile and Testimonial

Staff

Dr Andrew Parnell

School of Mathematical Sciences, Complex and Adaptive Systems Laboratory



I obtained my first degree from the University of Kent at Canterbury in 1999 with a degree in Mathematics and Management Science, followed by a Masters degree in Statistics at the same institution. I worked in marketing in London for 2 years before obtaining a PhD at the University of Sheffield in 2005. Between 2005 and 2008 I was a research fellow at Trinity College Dublin. I was appointed Lecturer in Statistics in the School of Mathematical Sciences in UCD, gaining tenure in 2011. My main statistical interest is in Bayesian stochastic processes and computational statistics. I am particularly interested in Gaussian processes, stochastic volatility models, compositional data analysis and monotonic processes. I have applied such models to a variety of environmental, biomedical and ecological science problems relating to: spatio-temporal climate reconstruction, stable isotope mixing models, the development of biomarker panels for prostate cancer, sea-level change and radiocarbon dating.

Graduate

Vincent Gilcreest (MSc Statistics, 2010)

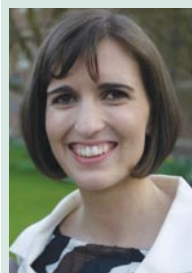


"When I started the Masters in Statistics I had previously worked in Bioscience R&D and Pharmaceutical manufacturing Industries. In these roles I gained a strong interest in statistics and also saw the significant role that statistics played in all aspects of my work. I was attracted to the UCD Masters by the large number of modules on offer across a wide spectrum of areas. The project work involved in the course was very rewarding and the "hands on" experience certainly contributed to me finding employment immediately after completing the course. Overall I really enjoyed the course and it dramatically increased my career opportunities."

Vincent is now a Data Modeling Specialist at Paddy Power, Ireland.

Graduate

Valda Murphy (MSc Statistics, 2004)



"I am very glad that I decided to take the MSc in Statistics in UCD. It had a strong theoretical foundation and gave me an education in how to apply statistics. My research project inspired me to go into the area of medical statistics after graduation. The course served as a launch-pad for my career in pharmaceutical statistics where I now work as a project lead overseeing the quantitative aspects of several drugs in development."

Valda now works for the pharmaceutical company Novartis in Basel, Switzerland.

Programme outcomes

On successful completion of the programme students will:

- Be able to demonstrate in-depth understanding of statistical concepts, apply basic statistical reasoning, techniques and models in the analysis of real data and employ technical computing skills;
- Have learned from experiences gained in different contexts and how to apply knowledge across discipline boundaries to solve problems;
- developed excellent presentation skills;
- appreciate the importance of professional development and the resources available to keep up to date with new developments in the field;
- have acquired a much sought after qualification that can be applied to a wide variety of careers.

What are the career opportunities?

Career prospects on completion of the MSc in Statistics are excellent. Many students pursue careers in the pharmaceutical industry (e.g. Elan, Quintiles). Students also enter careers in banking, finance and risk management. There is an increase in demand for statisticians from the IT sector (e.g. Google, Intel, data mining companies). In addition many government departments employ statisticians including the Central Statistics Office. Many past students embarked on a career in academia by proceeding to study to for a PhD in Statistics



How do I apply?

Entry Qualifications

At least a second class honours degree (or equivalent) in Statistics or a cognate subject area is required for entry and for which the course requirements are of comparable content and standard to that of the UCD BSc degree. Those who have been awarded a distinction, or Second Class Honours Grade 1, in the Higher Diploma in Statistics are eligible for the programme.

Alternatively students may qualify for enrolment for the four semester M.A. in Statistics which brings them to the same level as the M.Sc. in Statistics.

Contact

Any queries about the courses should be directed to the Graduate Administrator ; Tel. +353-1-716 7152).

Applying Online

To apply online, please go to: <http://www.ucd.ie/apply>

Fee Information

For information on fees, please visit: www.ucd.ie/registry/adminservices/fees

Useful Links

For more information please visit the website:

<http://www.ucd.ie/graduatestudies/coursefinder/taughtprogrammes/>