School of Mathematical Sciences
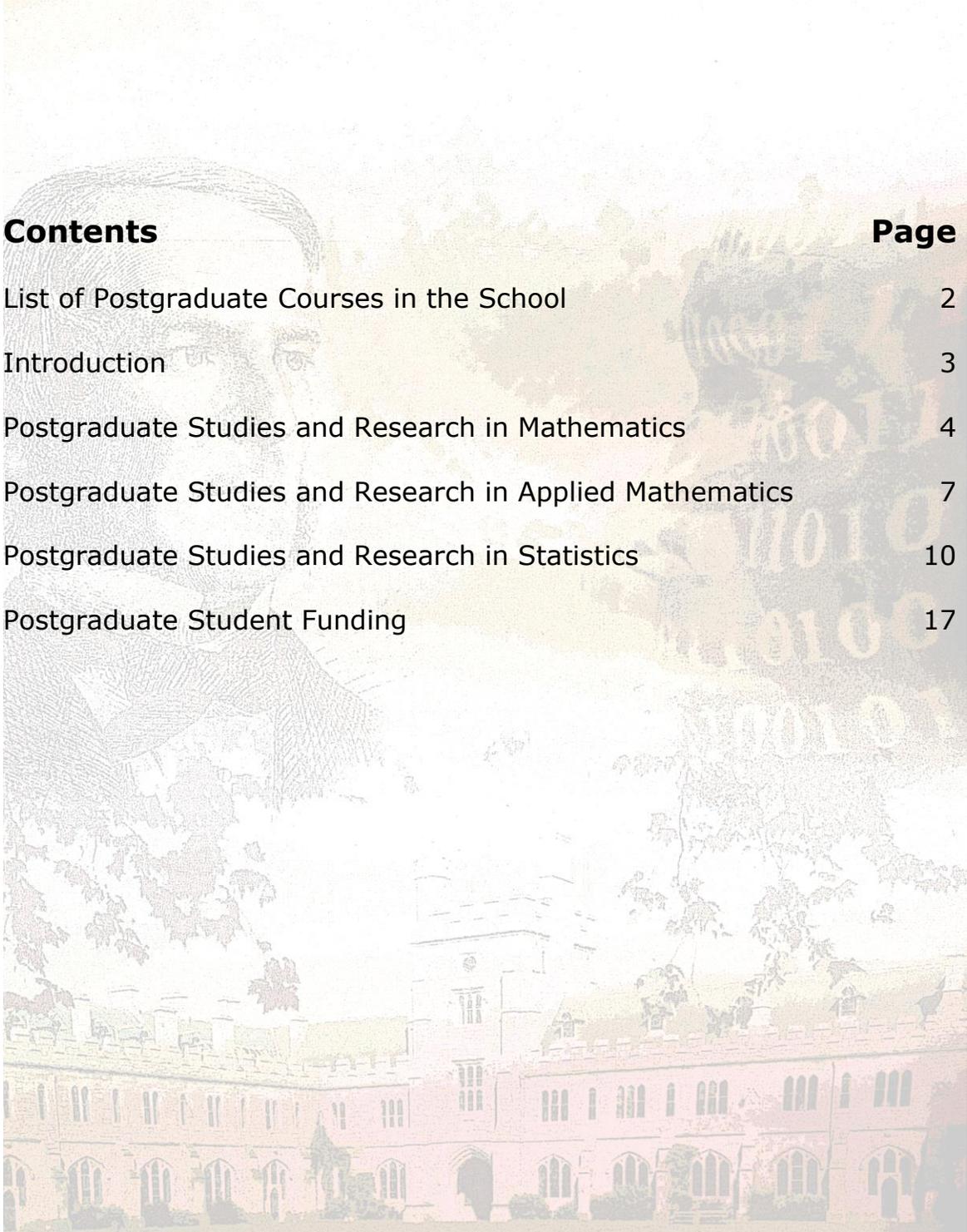## University College Cork

Postgraduate Studies in Mathematics, Applied Mathematics and Statistics 2016-2017

POSTGRADUATE STUDIES

School of Mathematical Sciences 2016 -2017

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Research Degrees

MSc in the following: Mathematics, Applied Mathematics/Mathematical Physics, Statistics
MPhil in the following: Mathematics, Applied Mathematics, Mathematical Studies
PhD in the following: Mathematics, Applied Mathematics, Statistics, Mathematical Studies

You may apply for a place on some of the above programmes if you are a graduate of a discipline having a significant mathematical content, such as Engineering, Science or Computer Science. You will have the opportunity to enhance the value of your primary degree by developing expertise in the areas of mathematics, mathematical modelling, computation and statistics.

INTRODUCTION

The Mathematical Sciences, both as a language and as a body of knowledge and technique, have provided the fundamental underpinnings of science and technology for centuries. Today, the influence and applicability of the Mathematical Sciences reaches far beyond the physical sciences and engineering into medicine, business and finance, the life sciences and the social sciences.

Apart from their wide-ranging applications, the Mathematical Sciences are also studied for the elegance and coherence of their ideas and the intellectual challenges they present. Pure mathematicians work on abstract problems independent of any immediate practical application – creating new mathematics, building new mathematical structures and unravelling new mathematical patterns. Applied mathematicians develop analytical and numerical techniques and utilise them in the construction of mathematical models capable of describing a wide range of physical and related phenomena. Statisticians are concerned with the collection, analysis and interpretation of numerical information as a basis for decision-making. Their particular expertise is coping with the variability in data and reducing the uncertainty of conclusions based on such data.

The primary mission of the School is to provide high quality education in Mathematics, Applied Mathematics and Statistics and to carry out research to the highest international standards in a spirit of community and professional service. Our tradition of excellence dates back to George Boole (1815-1864), the first Professor of Mathematics at UCC.

Postgraduate Studies & Research in Mathematics

Mathematics is among the most fascinating of all intellectual disciplines, the purest of all art forms and the most challenging of games. The study of mathematics is not only exciting, but important: mathematicians have an opportunity to make a lasting contribution to society by helping to solve problems in such diverse fields as medicine, management, economics, government, computer science, physics, psychology, engineering, and social science.

Mathematics is commonly defined as the study of patterns of structure, change, and space; more informally, one might say it is the study of 'figures and numbers'. In the formalist view, it is the investigation of axiomatically defined abstract structures using logic and mathematical notation. The specific structures that are investigated by mathematicians often have their origin in the natural sciences, most commonly in physics, but mathematicians also define and investigate structures for reasons purely internal to mathematics, because the structures may provide, for instance, a unifying generalization for several subfields, or a helpful tool for common calculations. Finally, many mathematicians study the areas they do for purely aesthetic reasons, viewing mathematics as an art form rather than as a practical or applied science.

Staff of the Department of Mathematics work in a wide variety of research areas, including real and complex analysis, functional analysis, stochastic analysis, numerical analysis, group theory, coding theory, the mathematics of computing, quantum probability, differential geometry, algebraic geometry, geometric analysis, and mathematical finance.

Closing date for applications: 31st July 2016

For Further Information contact:

Dr. Tom Carroll
Department of Mathematics
Room 163, Western Gateway
Building, UCC.

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MPhil in Mathematics

The Department of Mathematics offers a two-year full-time MPhil degree in Mathematics by research, examined by thesis, to suitably qualified applicants. The thesis consists of material that is a serious contribution to the knowledge of the subject, comprising some original results possibly supplemented by contributions to the understanding and presentation of significant topics.

Entry Requirements: The MPhil in Mathematics is open to candidates with at least second class honours in the subject Mathematics in the BA degree.

Duration of Course: 2 years full-time.

MPhil/PhD in Mathematical Studies

The Department of Mathematics offers a two-year full-time MPhil degree in Mathematical Studies by research, examined by thesis, to suitably qualified applicants. The thesis consists of material that is a serious contribution to the knowledge of the subject, comprising some original results possibly supplemented by contributions to the understanding and presentation of significant topics.

Students registering for the MPhil may, on the recommendation of the Head of Department and the Supervisor, and the approval of the academic bodies, be permitted to transfer to the PhD after at least one year from the date of first registration for the programme.

Entry Requirements: The MPhil in Mathematical Studies is open to candidates with at least second class honours in the subject Mathematical Studies in the BA degree. Suitably qualified candidates (1H or 2H1) may, with the permission of the Head of Department and the College, register on a PhD track (i.e. provisional registration for a PhD) in the first instance. Students will be subject to a review within 12 to 18 months from the date of registration and will be required to demonstrate progress in the form of 10,000 words minimum written work, as well as defending their work at interview. Students may then, on the recommendation of the Head of Department and the Supervisor(s) and with the approval of the College, transfer to the PhD. Appropriate Master's graduates with at least Second Class Honours can also apply for direct entry to a PhD.

Duration of Course: MPhil: 2 years full-time; PhD: 3 years full-time.

MSc in Mathematics

The Masters Degree (MSc) in Mathematics is a degree by research and is examined by thesis. Research projects are chosen to suit the student's interests and staff expertise and are agreed by the student, the Head of Department and the Supervisor. Normally the projects are within the research areas of staff members, which include real and complex analysis, functional analysis, stochastic analysis, numerical analysis, group theory, coding theory, the mathematics of computing, quantum probability, differential geometry, algebraic geometry, geometric analysis, and mathematical finance.

Entry Requirements: The MSc in Mathematics is open to candidates with at least second class honours in the subject Mathematics in the BSc degree.

Duration of Course: At least 1 year full-time.

PhD in Mathematics

The Department of Mathematics offers a three-year full-time PhD degree in Mathematics by research, examined by thesis, to suitably qualified applicants. The research topics correspond to the expertise of full-time staff, which includes real and complex analysis, functional analysis, stochastic analysis, numerical analysis, group theory, coding theory, the mathematics of computing, quantum probability, differential geometry, algebraic geometry, geometric analysis, and mathematical finance. The thesis is required to contain a substantial amount of original research material that is deemed by the Examiners to be worthy of publication in research journals.

Entry Requirements: To be eligible for consideration to enter on a programme of study and research for the Degree of PhD, a candidate must have obtained a standard of at least Second Class Honours, Grade I, in an approved primary degree, or presented such other evidence as will satisfy the College/Faculty of his/her fitness.

Duration of Course: 3 years full-time or 6-years part-time.

Postgraduate Studies & Research in Applied Mathematics

Applied Mathematics is closely associated in modern science with mathematical modelling, which is the key universal tool of science and engineering. Applied Mathematics involves the multistage process of constructing, validating, investigating and adjusting of mathematical models of a technical, physical, economic or social nature. The Department of Applied Mathematics is the natural home for interdisciplinary projects and we are actively involved in many studies in seemingly diverse areas such as ecology, geology, nonlinear optics, wave mechanics, microfluidics and the extraction of power from sea waves.

The research interests of the Department cover a broad spectrum of activities. These include the continuation of work in traditional areas such as fluid mechanics and computational mechanics, as well as encompassing recent developments in computer software development, nonlinear dynamical systems and financial mathematics. Our research combines modern methods of nonlinear analysis with the computational capabilities provided by high performance computer systems.

Closing date for applications: 31st July 2016

For Further Information contact:

Dr. Gareth Thomas
Department of Applied Mathematics
Room 142, Western Gateway Building, UCC.

Telephone: 021-4205821
Fax No.: 021-4205364
E-mail: g.thomas@ucc.ie

For Further Information on the MSc in Applied Science (Mathematical Modelling and Scientific Computing) contact:

Dr Kieran Mulchrone
Department of Applied Mathematics
Room 164, Western Gateway Building, UCC.

Telephone: 021-4205822
Fax No.: 021-4205364
E-mail: k.mulchrone@ucc.ie

MSc in Applied Science (Mathematical Modelling and Scientific Computing)

This programme provides training in the use and development of reliable numerical methods and corresponding software. It aims to train graduates with a mathematical background to develop and apply their skills to the solution of real problems. It covers the underlying mathematical ideas and techniques, the use and design of mathematical software, and offers options in several application areas. It develops skills in mathematical problem solving, scientific computing, and technical communication. By the end of the course students should be able to formulate a well posed mathematical problem from a possibly vague verbal description, carry out appropriate mathematical analysis, select or develop an appropriate numerical method, write a computer program which gives sensible answers to the problem, and present and interpret these results for a possible client. Training is also provided in general computing skills, mathematical typesetting, mathematical writing, and the use of computer languages and packages including Mathematica, parallel computing, C#/Java, 3D graphics and animation, and visualisation.

Programme Requirements – Direct Entry

Candidates must have obtained at least a second class honours degree or equivalent in a numerate discipline (i.e. Science or Engineering) to be eligible. All candidates must ultimately be approved by the director of the M.Sc. in Applied Science (Mathematical Modelling and Scientific Computing) programme. In the case of competition for places selection will be made on the basis of primary degree results and/or interview.

Course Content

- Introduction to Mathematica (5 Credits)
- Numerical analysis with Mathematica (5 Credits)
- Cellular Automata (5 Credits)
- Applied nonlinear analysis (computational aspects) (5 Credits)
- Mathematical and computer modelling of systems with strong nonlinearities in examples (5 Credits)
- Mathematical Modeling of Biological Systems with Differential Equations (5 Credits)
- Object oriented programming with numerical examples (10 Credits)
- Developing windowed applications and web-based development for scientific applications (5 Credits)
- 3D Computer Graphics and Animation for Scientific Visualisation (5 Credits)
- Topics in Applied Mathematical Modelling (5 credits)
- Advanced mathematical models and parallel computing with Mathematica (5 Credits)
- Minor Dissertation (30 Credits)

MSc in Applied Mathematics / Mathematical Physics

The Masters Degree (MSc) in Applied Mathematics or Mathematical Physics is a one-year degree by research and is examined by thesis. It is intended for students whose primary degree is a BSc containing a significant component of Applied Mathematics or Mathematical Physics. A research project is chosen to suit the student's interest and is agreed by the student and the Head of Department.

Entry Requirements: At least a Second Class Honours primary degree from a degree programme that includes a significant proportion of Applied Mathematics or Mathematical Physics; consideration may also be given to applicants with an equivalent qualification in a complimentary discipline. Entry is also possible for students whose primary degree is a BA degree in Applied Mathematics via the MSc Qualifying Examination.

Duration of Course: Minimum of 1 year

MPhil in Applied Mathematics

The Masters Degree (MPhil) in Applied Mathematics is a degree by research; it is examined by thesis and completion is expected to take between one and two years. It is intended for students whose primary degree is a BA containing a significant proportion of Applied Mathematics or Mathematical Physics. A research project is chosen to suit the student's interest and is agreed by the student and the Head of Department.

Entry Requirements: In order to be admitted to the MPhil Degree in Applied Mathematics, a candidate must have obtained at least Second Class Honours in the subject in her/his primary degree, or be a graduate of a degree programme which contains a substantial Applied Mathematics or Mathematical Physics component.

Duration of Course: 1-2 years

PhD in Applied Mathematics

Entry Requirements: Entry normally requires at least a Second Class Honours Grade One primary or Masters degree in an area which includes a high standard of Mathematics/Applied Mathematics/Computational Methods.

Duration of Course: Minimum of 3 years

Postgraduate Studies & Research in Statistics

Statistical Science is concerned with the quantitative approach to scientific investigation and problem-solving for systems subject to chance and variability. Indeed the methodology of Statistics has been termed 'the technology of the scientific method'. The Department of Statistics at University College Cork was the first University Department of Statistics in this country. The main teaching and research areas of the Department are in Applied Statistics. The department currently has a number of ongoing externally funded research projects. These projects are in areas as diverse as Climatology, Geology, Image Analysis, Radiology, Oncology, Wave Dynamics, etc. Associated with the Department is the Statistical Laboratory, which provides statistical consultancy to various academic and industrial clients. Students are encouraged to participate in the consultancy activities of the Laboratory as part of their programme of study.

Postgraduate study in Statistics requires a good mathematical background to understand the principles of the subject. At an applied level, it requires an interest in practical problems and an ability to communicate with clients in a non-technical way. Computing plays a central role in statistical work, both for data storage and analysis. For these purposes extensive use is made of a variety of statistical software, such as SPSS, SAS and R.

The Central Statistics Office, Ireland annually funds one Donal McCarthy postgraduate Research Scholarship in the Statistics Department at U.C.C. The current value of this scholarship is €10,000. Application details can be obtained from Dr Michael Cronin (see contact details below).

Careers: Given the breadth of its ambit, qualified statisticians readily find employment in diverse areas, such as government, business and industry, finance, market research, industrial production, pharmaceutical and agricultural industry, medical and health related industries and of course in all fields of scientific research. Many statisticians are consultants in their own right, rather than working for any particular organisation. Finally, statistics is a very sociable profession with one its great attractions being the opportunity to meet and work with people from a wide range of disciplines.

For Further Information contact:

Dr Michael Cronin
Head, Department of Statistics
Room 147, Western Gateway Building, UCC.

Telephone: 021-4205825
Fax No.: 021-4205364
E-mail: m.cronin@ucc.ie

Higher Diploma in Statistics

The Higher Diploma in (Statistics) is designed for graduates whose degrees have a substantial mathematical content, and who wish to develop their expertise in the application of statistical methods, thus broadening their career opportunities. It may also be pursued as part of the qualifying procedure for entry into the MSc Degree in Statistics. The programme consists of course work and may be taken over one year (full-time) or two years (part-time).

There is a continuing demand by employers for numerate graduates, and there are many new opportunities in commerce, government, industry, medicine and research for Science and Engineering graduates who have added to their first degree with the training in quantitative and computing skills by the Higher Diploma in (Statistics).

PROGRAMME CONTENT

- Probability and Statistics
- Introduction to Regression Analysis
- Statistical Theory
- Generalised Linear Models
- Survival Analysis
- Time Series
- Data Analysis
- Statistical Consulting
- Current Topics in Statistics

Entry Requirements: Applicants for this course should normally have obtained at least second class honours in a primary degree which included a substantial component of Mathematics or mathematically-based material. Other graduates whose degree programme included a substantial component of Mathematics or mathematically-based material, and who have at least two years experience in the application of statistical methods will also be considered.

This programme is not open to graduates who have taken Honours Statistics as a degree subject.

Duration of Course: 1 year full-time; 2 years part-time

Closing date for applications: 31st July 2016

MSc in Actuarial Science

This course is designed for graduates, from quantitative disciplines, who are looking to kick-start their career as an actuary. This course provides a solid foundation in Actuarial Science and include subjects such as statistics, financial mathematics, economics and business finance. Upon completion of the course your knowledge and skills could be applied to a range of industries in the financial services area such as insurance, pensions, healthcare, banking, investment and risk assessment. The course will equip you with mathematical and statistical knowledge and problem-solving skills to help businesses and institutions evaluate the long-term financial implications of the decisions they make. This course also gives you the opportunity to undertake a minor dissertation in Actuarial Science where you will undertake the study of a number of problems specific to the insurance and financial sector

Programme Content

Part 1:

Students take the following 50 credits of Core modules:
ST6001 Theory of Annuities - Certain for Actuarial Science (10 credits)
ST6002 Applied Financial Reporting Methods for Actuarial Science (10 credits)
ST6003 Probability & Mathematical Statistics for Actuarial Science (10 credits)
ST6004 Mortality Studies and Life Table Analysis for Actuarial Science (10 credits)
PA6007 Market Analysis Methods for Actuarial Science (10 credits)

Students take 10 credits from the following electives:
ST6006 Insurance Risk Modelling for Actuarial Science (10 credits)
or
ST6010 Current Topics in Statistical Applications to Actuarial Science (10 credits).

Part 2:

Students take the following 20 credit Core module:
ST6009 Application of Core Technical Research Methodologies in Actuarial Science (20 credits).

Students take 10 credits from the following electives:
ST6005 Life Contingencies for Actuarial Science (10 credits)
or
ST6008 Applied Financial Modelling and Risk Stochastics for Actuarial Science (10 credits)

Entry Requirements: Candidates must have (i) obtained at least a second class honours primary degree in engineering, finance, physical or mathematical sciences, or equivalent, or in a degree with a strong numerate content (as determined by the course co-ordinator) and (ii) to the satisfaction of the course co-ordinator have demonstrated by their performance in relevant modules that they possess the numeracy skills required for this MSc degree course. Graduates with a BSc in Financial Mathematics and Actuarial Science (FMAS graduates) or equivalent are not eligible to apply for this course.

All candidates must ultimately be approved by the course co-ordinator. In the case of competition for places selection will be made on the basis of the candidate's primary degree results and interview performance (if required).

Candidates, for whom English is not their primary language, should possess an IELTS of 6.5 (or TOEFL equivalent) in each individual category

Professional Accreditation: The Institute and Faculty of Actuaries has fully accredited this programme in respect of their first 8 Core Technical subjects. Students may be recommended for exemptions from the Institute's own professional examinations in up to 7 of these Core Technical subjects by performing sufficiently well in the corresponding examinations of the MSc Programme.

Duration of course: 1-year full-time or 2-years part time

Closing Date for Applications: 31st July 2016

Further Information particularly in relation to potential accreditation aspects please contact:

Ms. Linda Daly   Ms. Maeve Hally
Department of Statistics,   Department of Statistics,
Room 144,   Room 149,
Western Gateway Building,   Western Gateway Building,
University College Cork.   University College Cork.
021 4205851   021 4205841
Linda.Daly@ucc.ie   m.hally@ucc.ie

MSc Data Science & Analytics

The MSc in Data Science & Analytics, jointly offered by the Department of Computer Science and the Department of Statistics, provides an education in the key principles of this rapidly expanding area. The combination of sophisticated computing and statistics modules will develop skills in database management, programming, summarisation, modelling and interpretation of data. The programme provides graduates with an opportunity, through development of a research project, to investigate the more applied elements of the disciplines. At all times the programme stresses the importance of data science, statistics and probability theory as key tools in the analysis of large-scale heterogeneous data.

Companies currently seeking graduates with data analytics skills include firms specialising in analytics, financial services and consulting as well as governmental agencies and departments.

Programme Structure

Students must attain 90 credits through a combination of:
• core modules (30 credits)
• elective modules (30 credits)
• dissertation (30 credits)

PART 1 (60 credits)

CORE MODULES (30 credits) - *All selections are subject to approval of the programme coordinator.*

CS6405 Data Mining (5 credits)
ST6030 Foundations of Statistical Data Analytics (10 credits)
ST6033 Generalised Linear Modelling Techniques (5 credits)
Database modules:
Students with adequate database experience take:
CS6408 Database Technology (5 credits) and
CS6409 Information Storage and Retrieval (5 credits)

Students who have not studied databases take:
CS6503 Introduction to Relational Databases (5 credits)
and
CS6505 Database Design and Administration (5 credits)

ELECTIVE MODULES (30 credits) - *All selections are subject to approval of the programme coordinator.*

Students must take at least 10 credits of CS (Computer Science) modules and at least 10 credits of ST (Statistics) modules from those listed below.

CS6322 Optimisation (5 credits)
CS6323 Analysis of Networks and Complex Systems (5 credits)
CS6509 Internet Computing for Data Science (5 credits)
ST6032 Stochastic Modelling Techniques (5 credits)
ST6034 Multivariate Methods for Data Analysis (10 credits)
ST6035 Operations Research (5 credits)
ST6036 Stochastic Decision Science (5 credits)

Programming:
Students with adequate programming experience take:
CS6406 Large-Scale Application Development and Integration 1 (5 credits) and
CS6407 Large-Scale Application Development and Integration 2 (5 credits)

Students who have not studied programming take:
CS6506 Programming in Python (5 credits) and
CS6507 Programming in Python with Data Science Applications (5 credits)

Note: Not all modules may be offered in a particular year and are subject to change.

PART 2 (30 credits)
Students select one of the following modules:

CS6500 Dissertation in Data Analytics (30 credits)
ST6090 Dissertation in Data Analytics (30 credits)

For certain topics, students can work with a company on projects that have significant relevance to the participating company. Students will be selected on a competitive basis.

Entry Requirements: Candidates must have (i) obtained at least a second class honours level 8 primary degree in Computer Science or Mathematical Sciences, or (ii) a second class honours level 8 primary degree with a strong numerate content (e.g.

engineering, finance, physics, biosciences or economics). In such cases the programme team must be satisfied that the numerate content is sufficient for entry to the programme and that applicants have an aggregate grade of a 2H2 in appropriate modules.

Applicants who do not meet the above standard entry requirements will also be considered if they have an undergraduate degree (at Level 7 or Level 8) and a minimum of 5 years verifiable relevant industrial experience. Applicants who do not have a primary degree will only be considered with a minimum of 10 years verifiable relevant industrial experience.
Shortlisted applicants who do not meet the standard entry requirements will be invited for interview

English Language Requirements: Candidates, for whom English is not their primary language, should possess an IELTS of 6.5, with no individual section lower than 6.0.

Duration of course: 1-year full-time over 12 months or 2-years part time over 24 months

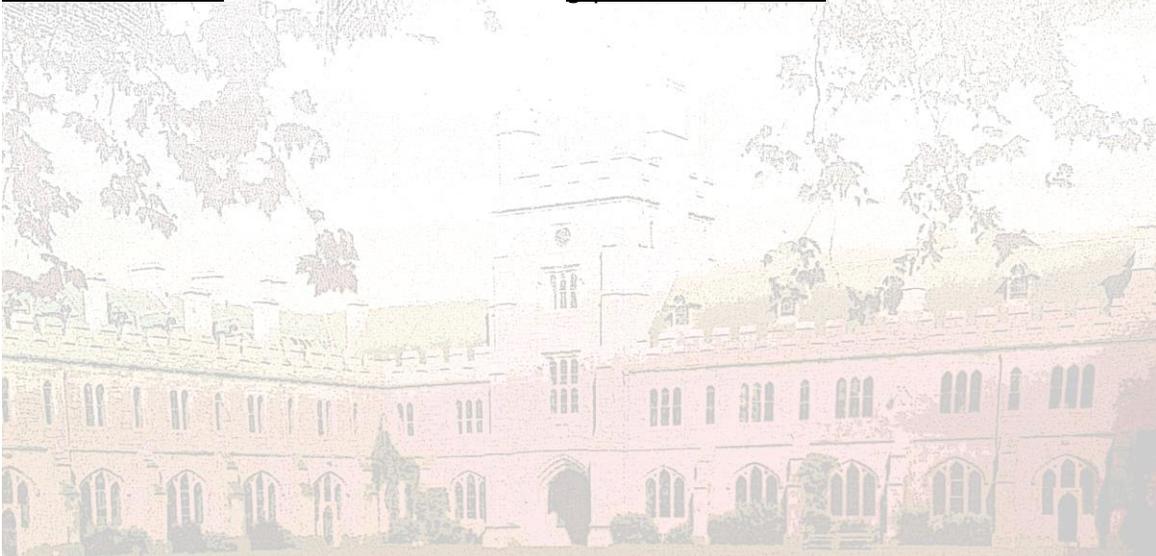**Part-Time Taught Postgraduate Programmes:**
Students taking the course on a part-time basis will need to complete the 30 core credits plus 15 elective credits in Year 1 and the remaining 15 credits of electives plus a 30 credit dissertation in Year 2.

Closing Date for Applications: 31st July 2016

Further Information please contact:

Dr. Michael Cronin
Head, Department of Statistics,
Room 147,
Western Gateway Building,
University College Cork.
021 4205825
m.cronin@ucc.ie

Dr. Gregory Provan,
Head, Department of Computer Science
Room 171
Western Gateway Building,
University College Cork.
021 4205928
g.provan@cs.ucc.ie

MSc (by research) in Statistics

The Masters Degree (MSc) by Research in Statistics is a one to two year degree, depending on progress and is examined by thesis.

Entry Requirements: The MSc in Statistics is open to candidates with at least second class honours in the subject Statistics in the BSc degree. Admission to the MSc by Research is Statistics is subject to prior arrangement with a staff member willing to act as supervisor for the project. Interested applicants are advised to contact the department to enquire about current availability of supervisors and project areas.

Duration of Course: 1 year full-time

PhD in Statistics

The Statistics Department offers a Ph.D. degree by research, typically lasting three years. Currently we have six students enrolled in the Ph.D. programme. Students are working on developing statistical methodology in a variety of research areas, such as cancer incidence mapping, climatology, electronics, financial analysis and geology. Most of the students are supported by funding from agencies such as Enterprise Ireland, Health Research Board and other research contracts. There is a strong possibility of further funded research opportunities for research students in the coming academic year.

Entry Requirements: Candidates must have obtained a standard of at least second class honours in an approved primary degree or equivalent.

Duration of Course: 3 years full-time

Postgraduate Funding

Although the State funds undergraduate fees, postgraduate students are liable for their fees. Students can receive funding for their fees and maintenance from a number of different sources:

Postgraduate Scholarship awarded by the University under the Postgraduate Support Scheme. Students should contact their department to discuss these opportunities. (see below for details)

Demonstrating and Tutorial work (see below for details).

Research fellowships from I.R.C.S.E.T. (Irish Research Council for Science, Engineering & Technology). The Website address for funding details and applications forms is www.embark.ie

Higher Education Grants. Students should contact their local authorities to establish eligibility for a grant.

Awards from Research Grants. (see page 15 for details)

Donal McCarthy scholarship (see page 16 for details)

Postgraduate Scholarship Support Scheme

Full-time registered postgraduate degree students with a relevant first class honours or second class honours, grade 1, in their degree/higher diploma/results, qualifying for entry to the relevant Masters programme, are eligible to apply for scholarship support in the department where they are registered as postgraduates.

The scholarships are divided into different categories based on the total number of tutorial or demonstrating hours undertaken by the postgraduate student in the year. In addition, the student is often also granted a fee waiver. A student in receipt of a scholarship is not precluded from receiving a maintenance/non fee award from another agency such as Enterprise Ireland or Industry. Scholarships can be paid or supplemented from research grants.

For details of the exact amounts, rates, etc., please contact the department of interest. To avail of these awards, prospective students will have to apply through the relevant department as soon as possible but no later than mid-July. Students should contact the department to establish the exact deadline.

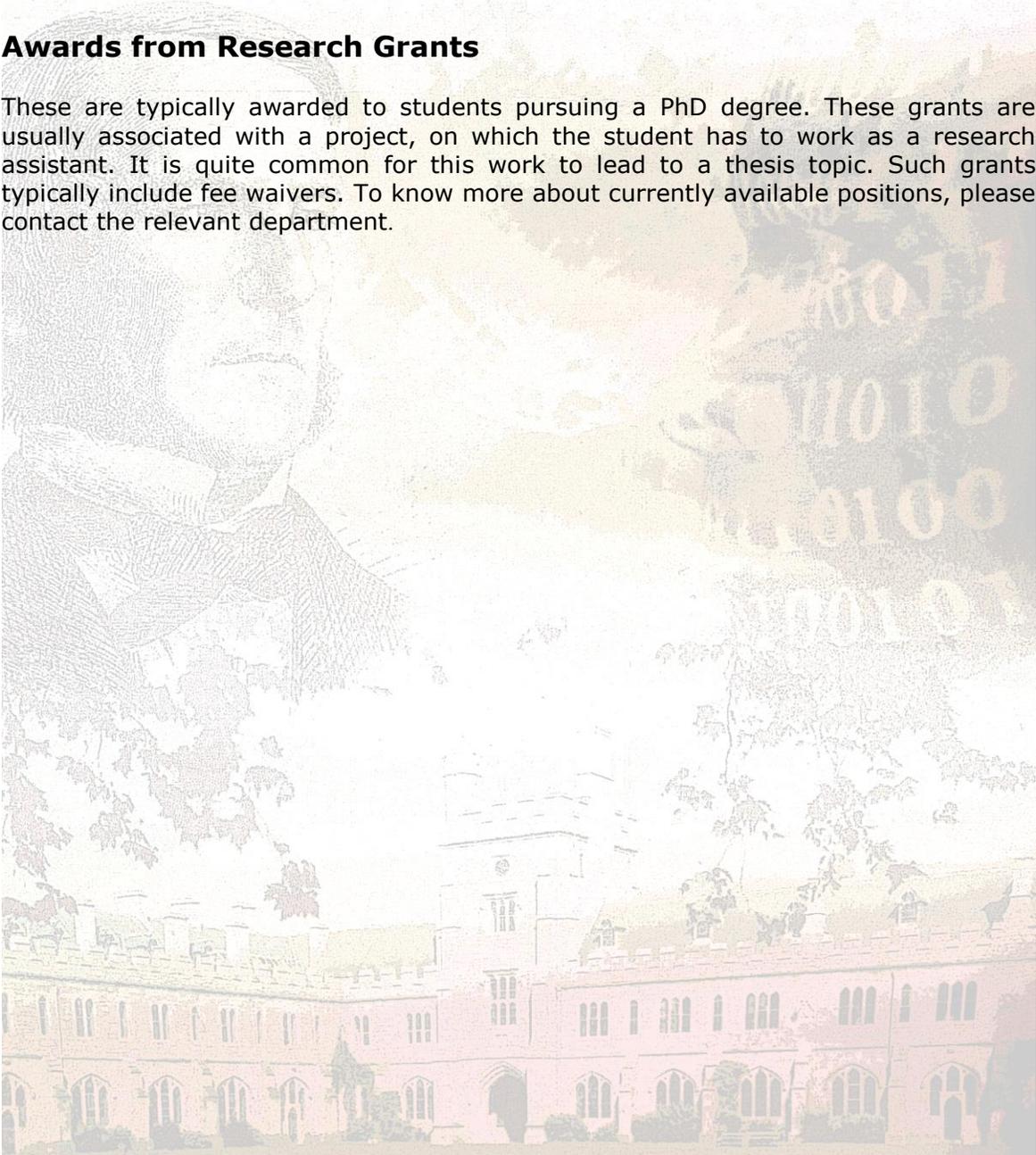## Demonstrating and Tutorial work

Students who do not qualify for a scholarship in accordance with the above scheme or where scholarship funds are not available to the School, may be appointed to carry out demonstrating or tutorial responsibilities.

The rates of pay for students for demonstrating and tutorial work:

Demonstrating   €16.34
Tutorial   €22

Awards from Research Grants

These are typically awarded to students pursuing a PhD degree. These grants are usually associated with a project, on which the student has to work as a research assistant. It is quite common for this work to lead to a thesis topic. Such grants typically include fee waivers. To know more about currently available positions, please contact the relevant department.

The Donal McCarthy Postgraduate Research Scholarship in Statistics

Dr. Donal McCarthy, who was President of UCC from 1967 to 1978, was a former Director of the Central Statistics Office (CSO). Central Statistics Office, Ireland has funded this scholarship to promote university research in the area of official statistics.

Applicants for this scholarship should have (at least) a Second Class Honours primary degree in Statistics or a related quantitative discipline, and have an interest in methodology for applications to Official Statistics (www.cso.ie). Relevant topics would include survey sampling, multivariate methods, time series and small area estimation. The holder of the award will carry out research leading to the award of a postgraduate (MSc or PhD) degree. The scholarship is funded by the Central Statistics Office (CSO). Opportunities will be provided to work on data from on-going projects of current interest to the CSO.

The scholarship shall be subject to the following conditions of award and tenure:

1. The award shall be known as "The Donal McCarthy Postgraduate Research Scholarship in Statistics".
2. The scholarship, which is currently valued at c. €10,000 is tenable at NUI, Cork, and is awarded to support full-time postgraduate studies in the area of official statistics.
3. The holder of the scholarship shall pursue research under the general direction of the Head of the Department of Statistics.
4. The holder of the scholarship shall be required to register for a higher degree (MSc or PhD).
5. The scholarship shall be tenable generally for one academic year, but may, subject to satisfactory progress, be extended for a maximum of three years.
6. A competition for the scholarship shall take place each year, with an application for renewal being considered together with applications from other candidates. Applications, comprising a curriculum vitae and the name of two referees, must be submitted to the Head of the Department of Statistics by 31st August each year.
7. The applications shall be considered by a Board comprising members of the Statistics Department and the Central Statistics Office. The award shall be made by the Academic Council on the recommendation of this Council.