



ROINN NA MATAMAITICE AGUS NA STAITISTICE

DEPARTMENT OF MATHEMATICS & STATISTICS

STUDENT HANDBOOK

2024/2025

Ollscoil na hÉireann, Má Nuad, Co. Chill Dara, Éire.

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INTRODUCTION

Welcome to the Maynooth University Department of Mathematics and Statistics. We are located in Logic House at the southern end of the old Campus. We hope you find this handbook of some help to you. If you have any further enquiries, please email mathsstats@mu.ie.

A degree in Mathematics and/or Statistics can be very enjoyable. The reasons why people opt to study Mathematics and Statistics vary widely but include the desire to study something interesting, stimulating and challenging. You may also want to develop your problem solving and logical reasoning skills. It can provide you with the opportunity to understand real world problems and help to make the world a better place through mathematical and statistical modelling and reasoning.

OFFICE HOURS:

10.00 a.m. - 11.00 a.m.

12.00 noon - 1.00 p.m.

2.00 p.m. - 4.00 p.m.

e-mail: mathsstats@mu.ie

Website: <https://www.maynoothuniversity.ie/mathematics-and-statistics>

The information in this handbook is as accurate as we can make it at the time of going to press, but it may be in error. In the event of difference, the official University rules and procedures take precedence over anything in this handbook, and nothing in this handbook should be understood as official.

TERM DATES: 2024-2025

<https://www.maynoothuniversity.ie/registrar/key-term-dates>

FIRST SEMESTER

First-Year Registration/Orientation	16 th September 2024	20 th September 2024
First Semester	23 rd September 2024	23 rd December 2024
Study Week	28 th October 2024	1 st November 2024
Christmas Break	23 rd December 2024	3 rd January 2025
Study Period	6 th January 2025	11 th January 2025

SECOND SEMESTER

Second Semester	4 th February 2025	9 th May 2025
Study Week	17 th March 2025	21 st March 2025
Easter Vacation	21 st April 2025	25 th April 2025
Study Period	13 th May 2025	16 th May 2025

MATHEMATICS & STATISTICS DEPARTMENT STAFF

Professor Stephen Buckley, Head of Department

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/stephen-buckley>

Professor Niamh Cahill

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/niamh-cahill>

Dr Galatia Cleanthous

<https://www.maynoothuniversity.ie/people/galatia-cleanthous>

Dr Rafael de Andrade Moral

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/rafael-de-andrade-moral>

Dr Detta Dickinson

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/detta-dickinson>

Dr Katarina Domijan

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/katarina-domijan>

Dr Catherine Hurley

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/catherine-hurley>

Dr Christian Ketterer

<https://www.maynoothuniversity.ie/people/christian-ketterer>

Dr Ciarán Mac an Bhaird

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/ciar-n-mac-bhaird>

Professor David Malone

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/david-malone>

Professor Oliver Mason

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/oliver-mason>

Peter Mulligan, MSC University Tutor

<https://www.maynoothuniversity.ie/people/peter-mulligan>

Dr Keefe Murphy, Lecturer

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/keefe-murphy>

Dr John Murray

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/john-murray>

Dr Eoin O' Brien

<https://www.maynoothuniversity.ie/faculty-science-engineering/our-people/eoin-obrien>

Dr Fiacre Ó Cairbre, Senior Lecturer

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/fiacre-cairbre>

Padhraic O’Hanrahan, MSC University Tutor

<https://www.maynoothuniversity.ie/people/padhraic-ohanrahan>

Professor Ann O’Shea

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/ann-oshea>

Professor Andrew Parnell

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/andrew-parnell>

Dr Lars Pforte

<https://www.maynoothuniversity.ie/faculty-science-engineering/our-people/lars-pforte>

Dr Szymon Urbas

<https://www.maynoothuniversity.ie/people/szymon-urbas>

Dr Mark Walsh

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/mark-walsh>

Professor David Wraith

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/david-wraith>

SUPPORT STAFF

Mr. Stephen Fagan, Executive Assistant

<https://www.maynoothuniversity.ie/people/stephen-fagan>

Ms. Janice Love, Senior Technical Officer

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/janice-love>

Ms. Gráinne O’Rourke, Administrator

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/gr-inne-orourke>

Mr. Anthony Waldron, Technical Officer

<https://www.maynoothuniversity.ie/mathematics-and-statistics/our-people/anthony-waldron>

COURSE COORDINATORS/DUTIES

2024/2025

Your Course Coordinator is available to advise on aspects of your academic programme and may be consulted if you encounter any difficulties with your course, be it timetabling, library or computer resources, or anything else.

<https://www.maynoothuniversity.ie/mathematics-and-statistics/current-students/course-coordinators>

REGULATIONS, RULES, AND PROCEDURES

1. Attendance

Students are required to attend all classes, lectures, tutorials and practicals in their modules/courses (remotely or on-campus as instructed by the Department).

2. Continuous Assessment

The following are the standard 'continuous assessment' rules for non-Pure courses. Lecturers may decide, in any given year, to draft their own rules for their own modules. Students will be informed in a timely manner.

- *In the event of absence, for any reason, students are requested to complete an **Absence Submission Form** which is available in their Moodle pages.*
- *Homework deadlines and project deadlines are absolute. Homework must be submitted as per the lecturer's instructions. Work submitted after the deadline will not be graded and will not count.*

3. Use of Calculators for on-site examinations

Students should note that the memories on calculators will be erased on entering on-site examinations.

PROGRAMMABLE OR GRAPHIC CALCULATORS ARE NOT ALLOWED.

4. Extreme weakness in Practical or Theory

Students should be aware that University regulations stipulate that they will fail their examination if they demonstrate extreme weakness in any module. Thus, care should be taken to ensure that each module is given its due measure of study time and attention.

5. Fundamental Proficiency Course

First Year (non-pure) students are required to complete the online proficiency course.

6. Students' Course Choices

Undergraduate students who have module choices and need advice will be referred to a [staff member](#).

7. Projects in Final Undergraduate Year

- The option of doing a Reading Course will be *offered* to selected students in their final undergraduate year. Marks will be assigned in a compulsory fashion, that is, not necessarily to the student's advantage.
- The project or reading course will be about some Mathematical or Statistical topic or will involve significant use of Mathematics/Statistics. The two main factors, which determine how many marks are awarded for the project, are the difficulty of the material covered and the quality of the coverage.

- a) Students will work singly when carrying out their project.
- b) Students who are offered the option of doing a project or reading course do not have to take it up. Careful consideration should be given to whether the student's best interest would be served by taking a full complement of lecture courses instead. The projects on offer may vary from year to year. Students should discuss their options with the relevant course coordinator.
- c) Students should select their topics (discuss with the relevant staff member) as soon as possible and in any case no later than the end of September. Students should begin work on their chosen topic in early October.
- d) Each student should decide with the supervisor concerning consultations. The main conditions concerning consultations are that student work must be essentially independent, and that consultations should not normally involve more than six contact hours.
- e) Each student will present a written report of approximately 25 pages, to be submitted to the departmental office before the Easter vacation in each academic year. Each student may also be required to take part in a discussion, about thirty minutes long, on the topic.
- f) Students are encouraged to make use of computers in preparing and presenting their reports. No matter whether the report is hand-written, typed or laser printed, it is important to avoid mistakes in grammar and spelling by reading carefully the final drafts of the document.

8. Combination of Subjects and Elective Courses

Students who combine Mathematics or Mathematical Studies or Statistics with other subjects should be careful to observe the distinction between **core** and **non-core elective** courses. When a degree programme offers you a choice of courses, it may be that some of these choices are timetabled outside the core hours allocated to the Department for the conduct of lectures in that programme. In that case, the elective courses may clash with courses given in the core hours of another Department's programme. Obviously, the rule is that core courses take precedence over non-core electives. Frequently, courses offered at core times are **obligatory** elements of a degree programme. In that case, you may not sign up for a clashing elective in another subject. It is very important to observe this rule. If you do not attend some obligatory component of a degree programme, you risk exclusion from the examination, under the regulations.

9. Conduct in Laboratories

- No food or drink in the labs.
- All authorised users (registered Mathematics & Statistics students only) must have a computer account with the Department.

- All problems encountered with systems must be reported to Ms. Janice Love, Senior Technical Officer, Room 105, Middle Logic immediately when they arise: email – mathsstats@mu.ie
- Guests are not allowed in the computer laboratories. **Authorised users only.**

ANNUAL PRIZES IN MATHEMATICS & STATISTICS

General Prizes

The Hamilton Prize

An annual prize is awarded to the best undergraduate mathematics student in his or her **penultimate year of study**, as nominated by each Irish university. It is presented at a ceremony in the Royal Irish Academy by that year's Hamilton Lecturer, often a Nobel Prize winner or Fields Medallist.

The Hamilton Prize in Mathematics celebrates the life and work of the Irish mathematician [William Rowan Hamilton](#) (1805-1865), who discovered quaternions and made major contributions to several areas of mathematical science.

The Huxley Prize for the History of Mathematics

This prize is awarded to the student obtaining the highest mark and a First Class Honours mark on the **History of Mathematics module MT382A**, chosen from those who have obtained an overall First Class Honours in Mathematical Studies, Pure Mathematics, or Applied Mathematics. *Instituted in honour of George Huxley, currently Adjunct Professor of Mathematics and Ancient Classics, Maynooth University.*

The Huxley Prize for Euclidean Geometry

This prize is awarded to the student obtaining the highest mark and a First Class Honours mark in the module MT251P ("Foundations of Euclidean Geometry"), chosen from those who have obtained an overall First Class Honours in 1st year Pure Mathematics.

The Spelman Prize

The Monsignor Joseph Spelman Prize is for the best performance in either 1st Year Theoretical Physics and Mathematics or 2nd Year Mathematics Pure and Mathematical Physics.

Prizes in Pure Mathematics

The Delort Prize

This prize is awarded for outstanding performance in **Pure Mathematics in the First Year Examinations**.

Instituted in honour of the Peter Justin Delort, first Maynooth Professor of Mathematics and Natural Philosophy (1795–1801).

The McMahon Prize

This prize is awarded for outstanding performance in **Pure Mathematics in the Penultimate Year Examinations**.

Instituted in honour of the late James J. McMahon, a former Maynooth Professor of Mathematics (1960–1974).

The De Brún Prize

This prize is awarded for outstanding performance in **Pure Mathematics in the Degree Examinations**.

Instituted in honour of the late Pádraig De Brún, a former Maynooth Professor of Mathematics and Natural Philosophy (1913–1945), perhaps best known as author of the poem "Thánaig Long ó Valparaiso".

The Huxley Prize for Pure Mathematics

This prize is awarded to the student obtaining the highest average mark across the three modules MT434P, MT441P, MT451P in the **Pure Mathematics Degree Examinations**.

Instituted in honour of George Huxley, currently Adjunct Professor of Mathematics and Ancient Classics, Maynooth University.

Prizes in Mathematical Studies

The Lennon Prize

This prize is awarded to the student obtaining the best result in **Mathematical Studies in the First Year Examinations**. This prize is open to students of both Maynooth University and the Pontifical University.

Instituted in honour of the late Francis Lennon, a former Maynooth Professor of Mathematics and Natural Philosophy (1864–1912).

The Pamela Manly Prize

This prize is awarded to the student obtaining the best result in **Mathematical Studies in the Second Year Examinations**. This prize is open to students of both Maynooth University and the Pontifical University.

Instituted in honour of the late Pamela Manley, a former student at Maynooth University.

The Denvir Prize

This prize is awarded to the student obtaining the best result in **Mathematical Studies in the Degree Examinations**. This prize is open to students of both Maynooth University and the Pontifical University.

Instituted in honour of Cornelius Denvir, a former Maynooth Professor of Mathematics and Natural Philosophy (1813–1826), best known for introducing Nicholas Callan to electricity and magnetism.

Prizes in Science and Applied Mathematics

The Boole Prize

This prize is awarded to the student obtaining the best result in **Standard Mathematics in the First Science Examinations**.

Instituted in honour of the mathematician [George Boole](#) (1815-1864), who laid the foundations for Computer Science.

The Gauss Prize

This prize is awarded to the student obtaining the best result in **Standard Mathematics (20ECTS) in the Second Science Examinations.**

Instituted in honour of the mathematician [Carl Friedrich Gauss](#) (1777-1855), who made major contributions to many areas of mathematical science.

The Donaghy Prize

This prize is awarded to the student obtaining the best result in **Applied Mathematics in the Third Year Examinations.**

Instituted in honour of the late John Donaghy, a former Maynooth Professor of Mathematics and Natural Philosophy (1912–1913).

The Stokes Prize

This prize is awarded to the student obtaining the best result in **Applied Mathematics in the Degree Examinations.**

Instituted in honour of the Irish mathematician [George Gabriel Stokes](#) (1819–1903). The Navier-Stokes equations were named in his honour and are the subject of a [million dollar prize](#).

Prizes in Statistics

The Geary Prize

This prize is awarded to the student obtaining the best result in **Statistics or Data Science in the First Arts or First Science examinations.**

Instituted in honour of Robert (Roy) C. Geary (1896–1983), founder of both the Irish Central Statistics Office and the Economic and Social Research Institute known for his commitment to providing evidence-based research to inform public policy debate and decision-making.

The Wilcoxon Prize

This prize is awarded to the student obtaining the best result in **Statistics in the Second Science or Second Arts examinations.**

Instituted in honour of Frank Wilcoxon (1892–1965), born in Co. Cork, a chemist and statistician known as a pioneer in the field of nonparametric statistics for his development of several statistical tests which still bear his name.

The Nightingale Prize

This prize is awarded to the student obtaining the best result in **Statistics in the Third Science or Third Arts examinations, or in the Higher Diploma in Statistics.**

Instituted in honour of Florence Nightingale (1820–1910), known in statistics as a pioneer of data visualisation and the first female member of the Royal Statistical Society, whose graphical representations of data profoundly affected healthcare and other social reforms.

The Gosset Prize

This prize is awarded to the student obtaining the best result in **Statistics or Data Science in the BSc degree examinations.**

Instituted in honour of William S. Gosset (1876–1937), the statistician who published under the

pseudonym 'Student', pioneered small-sample experimental design, and invented the famous t-test while working for Guinness Brewery in Dublin.

Please Note: The Department may choose not to award a prize if no student obtains a First-Class Honours mark in the relevant examination(s).

GENERAL INFORMATION

EQUALITY

The department is committed to providing an environment free of sexual harassment. Any student with a complaint is invited to discuss the matter with Professor Stephen Buckley or Professor Ann O'Shea.

PAST EXAMINATIONS PAPERS

Previous years' examination papers are available on the library database ExPert. You are advised that past examination papers may not provide a reliable guide to the format or content of future examinations. Courses are revised frequently, so a better guide to the kind of questions you should be able to deal with is provided by the homework sheets, class assignments and lecture material.

POSTGRADUATE STUDIES IN THE U.S.

Students thinking of pursuing postgraduate studies in the United States should note that the application process must begin in October, in order to meet the January deadlines.

NUI graduates taking the MSc by examination should apply for the NUI Travelling Studentship if there is one in Mathematical Science in that particular year. The closing date is usually early in the year.

COMPUTING FACILITIES WHEN ON-SITE

The Mathematics & Statistics Department has three computer labs. The largest computer lab consists of 40 Windows 11/Ubuntu 22 dual-boot machines, and it is situated on the Ground floor of Logic House. This is our main computer-based teaching facility.

The Saotharlann has 12 Windows 11/Ubuntu 22 dual-boot machines and is located on Top Logic, opposite MS2.

The third lab, located in room 215 on Top Logic, consists of 10 Windows 11/Ubuntu 22 dual-boot machines.

All students with Mathematical computing components to their modules are given access to the three computer labs when Government regulations allow it.

Mathematical and statistical software is provided in all our labs. The packages currently in use are Python, C++, SageMath and R. All of our labs require a username and login. People without an account will not be able to use our labs. Accounts are given to Mathematics and Statistics students only.

MATHEMATICS & STATISTICS COURSES: OUTLINE

Details of the Mathematics & Statistics courses can be found on the University website at:

<http://apps.nuim.ie/courses/>

COURSE TITLES, DESCRIPTORS AND ASSIGNMENTS 2024-2025

<https://www.maynoothuniversity.ie/mathematics-and-statistics/undergraduates/module-descriptors-202425>

STUDENT GRANT SCHEME

HEA Student Grant schemes can be accessed at:

www.studentfinance.ie

For further information, please see the University website at:

<https://www.maynoothuniversity.ie/student-fees-grants/grants>