Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

Structured Doctoral Pathway 2022-23

School of Mathematical Sciences

Overview

The School of Mathematical Sciences possesses an outstanding track record for postgraduate research. The School carries out research in a wide variety of topics under the broad heading of the Mathematical Sciences, ranging from geometric group theory to computational astrophysics. Our research falls into the categories listed below:

- Algebra & Geometry
- Analysis of Differential Equations
- Financial and Actuarial Mathematics
- Mathematics Education
- Relativity and Astrophysics

The School of Mathematical Sciences structured PhD programme is tailored to the needs of the School and its postgraduate students. It is a student-centred, flexible, research-focused programme, which aims to provide students with discipline-specific knowledge, generic skills and autonomy to augment and support their postgraduate research

Selection and Registration

In order to be considered on a structured programme students must take a minimum of 20 ECTS in total during their PhD studies. No students will be allowed to take more than 20 ECTS in a single year and no student is to take more than 50 ECTS

Once approval from the supervisor has been granted, students should register for their approved Faculty GTE modules during the online registration process.

In addition to the modules noted on this structured pathway, students may take any other GTE provided through the Faculty GTE listing as part of this structured PhD.

Progression

The individually-tailored structured pathway for each student should be discussed and agreed in the first instance with their supervisory panel and progress recorded on the annual PGR2 form.

Induction and Training

In addition, students will be encouraged to engage with centrally-offered workshops & seminars on academic, software or transferable skills which align with their development needs. In year one, all students are required to attend the orientation sessions, the Graduate Studies Office (GSO) and library-run programme and other relevant induction sessions. GSO communicates details of the training schedule to each student at the beginning of each semester. Each student is required to take the Online Research Integrity Training Module in their first year.

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Core Transferable Skills Modules

- **GS602**: Postgraduate Tutoring Principles and Practice (5 ECTS**)**

Elective Modules

- **MS537**: Probability and Finance I **(**7.5 ECTS)
- **MS508**: Probability and Finance II (7.5 ECTS)
- **MS525**: Fixed Income Securities (7.5 ECTS)
- **MS509**: Partial Differential Equations (7.5 ECTS)
- **MS526**: Stochastic Finance (Advanced) (7.5 ECTS)
- **MS527**: Financial & Actuarial Data Analysis (7.5 ECTS)
- **MS547**: Time Series (Advanced) (7.5 ECTS)
- **MS555**: Simulation for Finance (7.5 ECTS)
- **MS556**: Deep Learning (7.5 ECTS)
- **MS536**: Differential Geometry and General Relativity (7.5 ECTS)
- **MS539**: Advanced GR I: Gravitational Waves (7.5 ECTS)
- **MS540**: Advanced GR II: Black Holes (5 ECTS)

Non-accredited Training, Workshops and Masterclasses

- Graduate Studies Office Orientation Programme
- Research Integrity Online Training Module (Physical and Natural Sciences stream) (non - accredited)
- Students are encouraged to take additional training opportunities offered by the School and GSO as appropriate throughout their PhD.