



Your First Year

Students in this programme share offices in an attractive, purpose-built space in the Bayes Centre in central Edinburgh. This brand-new building includes the International Centre for Mathematical Sciences (ICMS), Maxwell Institute (MI), the Datalab, and an Informatics Robotarium. It is a hub for mathematical and interdisciplinary activity. MIGSAA students will be exposed to opportunities from a wide range of leading academics and industry partners, will benefit from the diverse mathematical activities and international visitors in the ICMS and MI, as well as enjoying the excellent facilities and interactions with students, staff and activities in other disciplines in the Bayes Centre data hub.

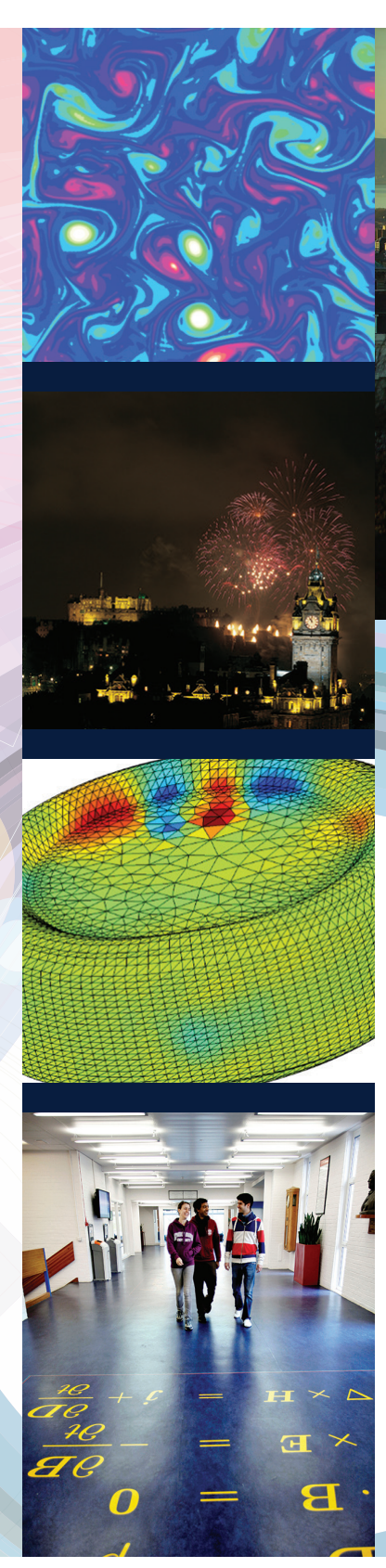
As a MIGSAA student, your first year is spent partly doing coursework and partly completing research projects under supervision of lecturing staff from the two institutions. These collectively give you a broad and solid introduction to topics in pure and applied analysis, numerical methods, probability and other areas that will be relevant for your research. In the second half of the first year you will undertake a more involved research project that may lead directly to a PhD research topic.



Research Options

Projects are available on a wide range of research themes, such as:

- Partial Differential Equations** dispersive PDE and probabilistic methods, linear and nonlinear elliptic PDEs, transport, generalised spectral theory, analysis of PDEs arising in geometry, numerical methods.
- Harmonic Analysis** including the interaction with discrete structures, geometric topics, number theory, large data sets.
- Stochastic Analysis Markov** decision processes, stochastic differential equations and stochastic partial differential equations - including both theoretical and numerical analysis, stochastic filtering, limit theorems, stability and convergence rates, large deviations and rare events.
- Interdisciplinary and Industrial Mathematical Modelling** for environmental and ecological systems, atomic and molecular systems, climate extremes, social phenomena and energy networks, processes and biological applications.
- Numerical Analysis** in fluid dynamics, molecular and biological models, for stochastic and/or partial differential equations, finite element and spectral methods and multiscale numerical methods.
- Continuum Mechanics** including complex fluids, turbulence, porous media, solid mechanics, wave propagation and scattering, granular media.
- Pure and Applied Probability** communication networks (wired, wireless, mobile), energy networks, biochemical networks, disease modelling, random graphs, percolation theory, and wavelet methods.



Applying to MIGSAA

Visit the MIGSAA website at <http://www.maxwell.ac.uk/migsaa> for more detailed information about the programme.

Apply online

There is a unified procedure for all applicants. Students are admitted to the joint programme, but after year one, they typically perform most of their research at one institution.

Funding

MIGSAA accepts students of all nationalities, however the number of places reserved for UK students is much higher than for either European or Rest-of-World applicants. MIGSAA is an equal opportunity organisation and is keen to increase recruitment among under-represented groups.

MIGSAA Recruitment Days are an opportunity for students to visit us, to find out more about the CDT and meet academic staff.

Deadlines and Dates

Two Recruitment Days where applicants are typically interviewed for early decisions have been arranged for:

19th December 2017; deadline for applications 1st December
19th February 2018; deadline for applications 31st January

However applications may be submitted at any time.

The Industry Programme

Not only are highly skilled PhD graduates in mathematical analysis greatly valued in industry and business, their research is vital to the UK economy. Since many of our students are taking up careers in the commercial sector, fostering collaboration with industry and introducing students to the industrial uses of mathematics are critical aspects of the MIGSAA PhD experience.

Industry supporters

Our industrial supporters include Selex ES UK, DSTL, Microsoft and John Deere, and we are now in contact with over 16 different companies ranging from the financial sector through to beer brewing. Our industrial partners propose projects for students to work on – these might be small mini-projects for group work, extended projects or full PhD projects.

Students working on PhD projects with industrial partners can expect significant interaction with those partners and exposure to the industrial environment, including, potentially, an industrial placement.

Example projects offered previously include laser propagation through the atmosphere, the use of ultrasound in medical applications, multiphase fluid dynamics for volcanic eruptions, modelling flash sintering, and conservation of native species.

We host regular industry afternoons to foster connections and MIGSAA students are invited to participate in site visits at Selex to learn more about the role of mathematics in industry.

Maxwell Institute Graduate School in Analysis and its Applications

For More Information please visit:
<http://www.maxwell.ac.uk/migsaa>

Or contact us at:
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THE MAXWELL INSTITUTE GRADUATE SCHOOL IN ANALYSIS AND ITS APPLICATIONS

An EPSRC/SFC Centre for Doctoral Training

A unique opportunity for fully funded PhD study in Edinburgh in all areas of analysis and its applications.

A collaborative programme with joint degree from both Edinburgh and Heriot-Watt Universities.

A comprehensive programme of instruction.

Opportunities for collaboration with industry.

About MIGSAA

The Maxwell Institute Graduate School in Analysis and its Applications (MIGSAA) is a Centre for Doctoral Training providing high quality instruction in analysis and the applications of analysis to a wide range of areas.

MIGSAA will fund 5 cohorts of 12 students between 2014 and 2018, with PhDs awarded jointly by both Edinburgh and Heriot-Watt Universities. MIGSAA has been made possible by a grant from the UK's Engineering and Physical Sciences Research Council and the Scottish Funding Council.

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