University of Birmingham

Management Mathematics PhD

Postgraduate doctoral research degree in Management Mathematics PhD/MSc by Research:

Training is provided through individual supervision of research, by advanced seminar courses and conferences, and by generic courses.

The PhD degree usually involves a qualifying dissertation submitted during the second year of study, which is helpful training for writing the PhD thesis.

Course fact file
Type of Course: Doctoral research
Study Options: Full time, part time
Duration: PhD: 3–4 years full-time
Start date: Contact us for start date.

Related courses

PhD programme, School of Mathematics Graduate School of Mathematics (/schools/mathematics/phd/phd-programme.aspx)

Contact

Director of Mathematics Graduate School: Professor Chris Parker

Contact us online (http://bham.hobsons.co.uk/ask.aspx?cid=1223&did=24) or at +44 (0)121 414 6193.

School of Mathematics (/schools/mathematics/index.aspx)

Follow us on Twitter (http://twitter.com/eps_unibham)

Details

Training is provided through individual supervision of research, by advanced seminar courses and conferences, and by generic courses. The PhD degree usually involves a qualifying dissertation submitted during the second year of study, which is helpful training for writing the PhD thesis.

The main research focus of our internationally renowned Theoretical and Computational Optimisation Group is on mathematical theory and methods applicable to managerial decision-making, particularly non-linear, discrete, and multicriteria optimisation. Research is typically a mixture of theoretical investigation and practical application or industrial collaboration. In some cases it is theoretical and leads to the development of new mathematical theories applicable in management mathematics. Elements of this find their way into challenging taught courses within the School.

Members of the group teach courses such as:

- Linear and non-linear programming
- Combinatorial optimisation
- Game theory
- Operations management
- Heuristics
- Multicriteria optimisation
- Topics in management mathematics
- Research frontiers in management mathematics

Postgraduate students in the Management Mathematics Group acquire widely useful knowledge and skills, ranging from theory to computational implementation and live applications. The courses examine the basic concepts in a broad range of managerial, industrial and scientific problems and illustrate how these may be applied in a variety of contexts to provide powerful solutions. By giving seminars, attending conferences and presenting papers, students prepare themselves for professional life.

The group consists of internationally known researchers and has several funded collaborations in various subject areas. Members of the group have various and wide-ranging experience in industrial co-operation and industrial research projects. Past and present work includes projects and co-operation with Advanced Bell Lab Technologies, Avis Rent-a-Car, Blue Gate Brussels, Hongkong International Terminals (HIT), Hydro Quebec Canada, JPC Consulting, Region de Bruxelles-Capitale, RWE AG, RAG AG, ThyssenKrupp Industries, EADS, Airbus UK and Ultramar Oil.

Related links

School of Mathematics (/schools/mathematics/index.aspx)

Why study this course

The School of Mathematics has a strong research culture, with researchers of international stature in each of its main specialisms.

We have:

- around 50 members of academic staff
- around 60 full-time postgraduate students (UK, EU and International)
- regular research seminars and specialist meetings providing a stimulating research environment and opportunities to interact with international experts; see the Birmingham Mathematics Institute

Currently thriving at Birmingham are the following research groups: Applied Mathematics: applied analysis, financial mathematics, fluid mechanics, mathematical biology, nonlinear waves, scientific computing Theoretical and Computational Optimization: mathematical theory and methods applicable to managerial decision-making, particularly non-linear, discrete, and multi-criteria optimization Pure Mathematics: algebra, analysis, combinatorics and logic Statistics: nonparametric, robust methods, time series analysis and medical statistics

Fees and funding

Tuition Fees

Tuition fees for 2015/2016 are as follows:

- £4,090 for **home/EU students**
- £13,195 for **international students**

Learn more about **fees and funding (/postgraduate/pgt-fees/fees.aspx)**

Scholarships and studentships
We award up to ten home/EU EPSRC doctoral training grants each year to eligible students. In exceptional circumstances fully-funded School doctoral training grants may be awarded. Additional income can often be generated by tutorial and marking work. For more information contact the School directly or email **sfo@contacts.bham.ac.uk (mailto:sfo@contacts.bham.ac.uk)** .

International students can often gain funding through partial School scholarships, Commonwealth scholarships or their home government.

Entry requirements

Learn more about **entry requirements (/postgraduate/requirements-dr/step1.aspx)** .

International students
We accept a range of qualifications from different countries – learn more about **international entry requirements (/postgraduate/requirements-dr/step1.aspx)** .

Standard English language requirements (/postgraduate/requirements-pgt/international/index.aspx) apply.

How to apply

Learn more about **applying (/postgraduate/requirements-dr/index.aspx)**

Apply now (https://pga.bham.ac.uk/lpages/EPS033.htm)

When clicking on the Apply Now button you will be directed to an application specifically designed for the programme you wish to apply for where you will create an account with the University application system and submit your application and supporting documents online. Further information regarding how to apply online can be found on the **How to apply pages (http://www.birmingham.ac.uk/students/courses/postgraduate/apply-pg/index.aspx)**

Apply now (https://pga.bham.ac.uk/lpages/EPS033.htm)

Related links

Postgraduate degree courses, School of Mathematics Graduate school (/schools/mathematics/postgraduate/index.aspx)

Research interests of staff

The School of Mathematics at Birmingham University is internationally renowned for its research in many areas of mathematics. There are flourishing research groups in algebra, analysis, applied analysis, combinatorics, fluid dynamics, numerical analysis, optimization and statistics. The main research activities in the School are summarised by the five research groups Pure Mathematics, Applied Mathematics, Theoretical and Computational Optimization and Statistics. You can find out more on our **research page (/research/activity/mathematics/index.aspx)** .

Teaching and Learning

Training is provided through individual supervision of research, by advanced seminar courses and conferences, and through MAGIC taught courses (see below). The PhD degree involves a qualifying dissertation submitted during the second year of study. We expect students to give seminars, attend conferences and present papers, preparing them for professional life.

A successful PhD student will produce independent and original research work which should contribute to knowledge in the chosen field. This should be an exciting and extremely rewarding experience.

The School of Mathematics is a founding member of MAGIC, the 'Mathematics Access Grid: Instruction and Collaboration'. This is an interactive video conferencing resource, which is used to present lectures to postgraduate students across the whole of England. Our postgraduate lectures are broadcast to about 20 English universities and our students have the opportunity to collaborate with students and academics in other universities. This is a very exciting development and means that postgraduate students will have access to lecturers not available on their own campus.

All PhD students must take five 10 credit graduate level courses during their first three years of study. These are typically MAGIC courses, but they can also be courses presented at Summer Schools or final year undergraduate courses.

We have a vibrant postgraduate society called BUMPS which provides an active social network for research students.

Our webpage **for current postgraduate students (http://www.birmingham.ac.uk/schools/mathematics/current-students/current-postgraduates/index.aspx)** includes:

- a comprehensive guide for PhD students
- a list of recent theses

Related research

- **School of Maths research (/research/activity/mathematics/index.aspx)**

Find a PhD

Employability

University Careers Network

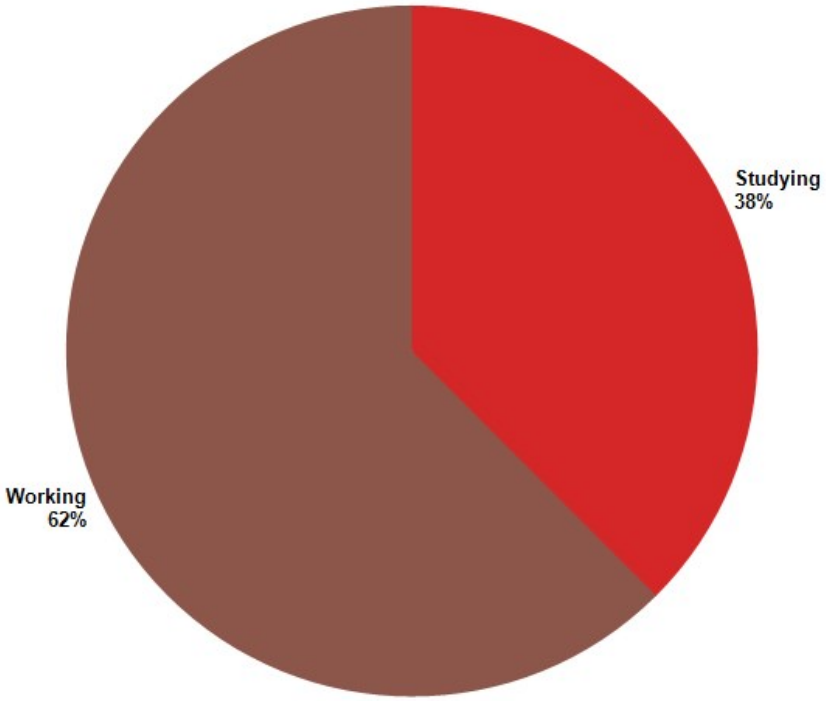
Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our Careers Network can help you achieve your goal.

Our unique careers guidance service is tailored to your academic subject area, offering a specialised team (in each of the five academic colleges) who can give you expert advice. Our team source exclusive work experience opportunities to help you stand out amongst the competition, with mentoring, global internships and placements available to you. Once you have a career in your sights, one-to-one support with CVs and job applications will help give you the edge.

If you make the most of the **wide range of services (https://intranet.birmingham.ac.uk/as/employability/careers/college/eps/index.aspx)** you will be able to develop your career from the moment you arrive.

Destinations of Leavers from Higher Education (DLHE) 2011/12

The DLHE survey is conducted 6 months after graduation.



Examples of employers

- Aon Hewitt
- Barnett Waddingham
- Capita
- Deloitte
- Deutsche Bank
- Ernst & Young
- Mercer
- PricewaterhouseCoopers
- Softcat
- Tudor Grange Academy School

Examples of occupations

- Actuarial Trainee
- Actuarial Consultant
- Actuary
- Analyst
- Associate Auditor
- Consultant
- Financial Analyst
- Management Accountant
- Secondary School Teacher
- Software Tester

Further study-examples of courses

- ACA - Accountancy
- ACCA - Accountancy
- MSc Accounting and Finance
- MSc Actuarial Science
- MSc Computing Systems
- MSc Finance and Investment
- MSc Operational Research
- MSc Statistics
- PGCE Mathematics
- PhD Applied Mathematics

Visit the **Careers section of the University website (https://intranet.birmingham.ac.uk/as/employability/careers/index.aspx)** for further information.

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