



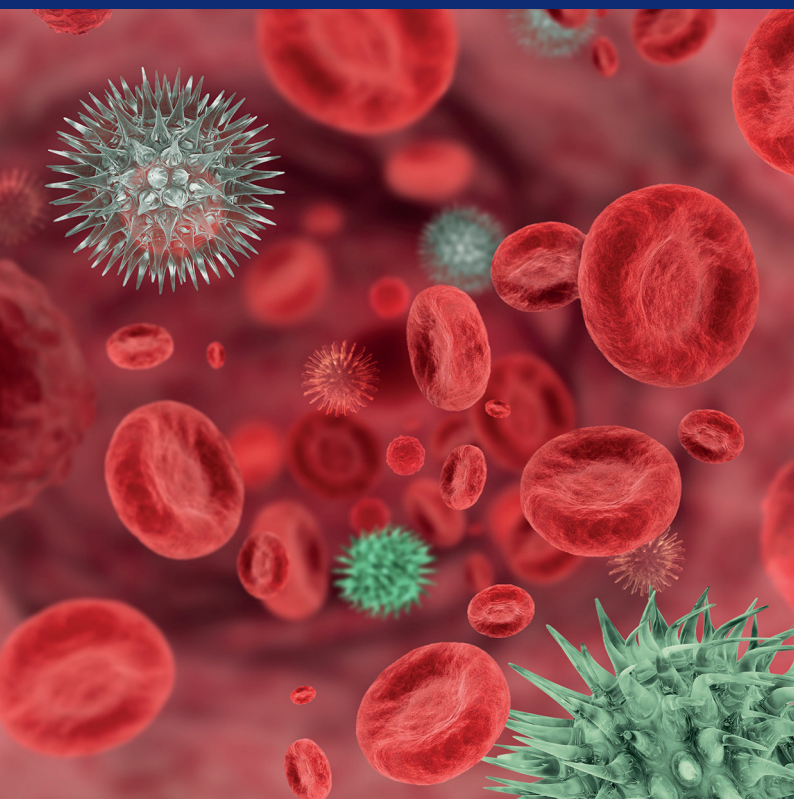
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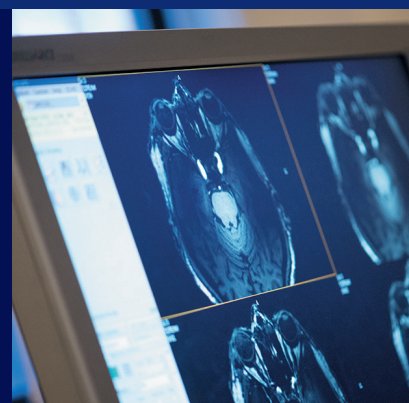
MSc Mathematical Medicine and Biology

Study advanced and exciting new developments
at a world-leading university

nottingham.ac.uk/mathematics/masters



Gain hands-on
experience of
interdisciplinary
biomedical research



Undertake an
independent
research project



Benefit from
expert teaching
at a research-led
university



Training for
careers including
medical modelling or
health care





Mathematical techniques designed to solve real-world questions in medicine and biology

Overview

The MSc Mathematical Medicine and Biology trains students in the application of advanced mathematical techniques to real-world challenges and fundamental questions in medicine and biology. The course is designed for students with a degree in mathematics or a related subject with a substantial mathematical content.

You will gain hands-on experience of interdisciplinary biomedical research throughout the course through the Centre for Mathematical Medicine and Biology, which is based within the school. Ideally you will have covered topics including calculus, linear algebra and differential equations. You will learn the relevant biology and medicine as the course progresses.

Content

Throughout the course you will:

- learn the skills suitable for a research career in the exciting and growing field of mathematical medicine and biology
- be trained in advanced mathematical techniques including partial differential equations and stochastic processes
- be supported by the exceptional strength of the Centre for Mathematical Medicine and Biology
- enhance your skills leading to a career in the pharmaceutical industry or within the health care industry

Structure

The course is offered on a full-time basis only for one year and the programme includes both a taught component and an independent research-based project leading to a dissertation. The whole course comprises of 180 credits split across 120 credits of core modules and a 60 credit research project.

Modules

Modules are mainly delivered via lectures and/or problem classes. They take place on University Park during the autumn and spring semesters of the academic year. The following modules form the taught component of the degree:

- Mathematical Medicine and Biology (20 credits)
- Computational and Systems Biology (20 credits)
- Practical Biomedical Modelling (40 credits)
- Topics in Biomedical Mathematics (20 credits)
- Applied Nonlinear Dynamics (20 credits)

Dissertation

The dissertation is worth 60 credits and is carried out during the summer. You will concentrate on a topic relating to mathematical medicine and biology. The study will be largely self directed, although a supervisor will provide input where necessary. The topic will be chosen by agreement between you and your supervisor either from a list that is provided or based on your suggestion if possible. It will develop your ability to engage in independent learning and will help you develop the ability to think logically and critically, to problem solve and to effectively communicate results. Past projects include:

- Models of male-female acoustic interactions in mosquitoes
- Large scale models of brain dynamics
- Parameter inference for models of plant hormone signalling
- Shaping the dynamics of intracellular calcium waves
- Telomere Clustering in Yeast
- Modelling pressure build up and damage during subcutaneous injection processes

Entry requirements

At least a lower second class honours (2:2) BSc degree (or international equivalent) in mathematics or a closely related subject with substantial mathematical content. Previous knowledge of calculus, linear algebra, differential equations and dynamical systems would be helpful to start the course.

University of Nottingham has made every effort to ensure that the information in this leaflet was accurate when published. Please note, however, that the nature of the content means that it is subject to change from time to time, and you should therefore consider the information to be guiding rather than definitive.

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