

Undergraduate study

Engineering Mathematics



Key highlights



Subject leaders

University of Bristol ranked number 1 for general engineering (*Guardian University Guide 2020*).



Real-world applications

We're the only UK mathematics department based in an engineering faculty. This allows us to offer a unique blend of advanced mathematics and real-world problem solving.



Career-ready skills

Our degrees focus on technical and transferable skills highly valued by top companies that recruit mathematicians as well as engineers, such as Airbus, Goldman Sachs and Red Bull Racing.



Industry support

Get support from our Industrial Liaison Office for the chance to engage with industry during your study, from insightful lectures to mentoring and internship schemes. Our MEng with a Year in Industry also offers the chance to gain valuable work experience.

Why study engineering mathematics at Bristol?

Engineering mathematics uses maths to solve problems arising from every branch of engineering and more widely across medicine, science and technology.

Our courses meet the increasing demand from industry for mathematically skilled engineers who can drive high-tech innovation. These skills can only be learned from hands-on experience, so we teach using case studies taken from a wide range of engineering, scientific, industrial and business applications.

We offer three-year and four-year degrees, including options with Study Abroad or a Year in Industry that allow you to broaden your experience or apply it in an industrial context.

What you will study

Engineering mathematics is built on four core themes that cover theoretical and practical aspects of the application of mathematics:

- **Mathematical and data modelling:** In this core stream that runs through your degree, you will create mathematical models and analyse complex datasets while solving real problems from research, industry and business. You'll often work on scenarios from our industrial collaborators or address challenges in current research.
- **Mathematics:** You will learn new mathematics as well as understanding why you need it to solve real problems. Many of our diverse topics, such as nonlinear dynamics and artificial intelligence, are beyond the scope of conventional maths degrees.

- **Engineering:** Topics from across the Faculty of Engineering give you an excellent background in general engineering so you can really engage with practical problems.
- **Scientific computing:** Computing is crucial for applying mathematics in the real world, so you will learn computer programming from scratch to complement your mathematical modelling skills.

The first two years of your studies provide a background in these core topics, to underpin the advanced material that follows.

As well as gaining first-hand exposure to pioneering research, after your first two years you will have a wide choice of options from across engineering and mathematics to fit your interests, from artificial intelligence, robotics, nonlinear dynamics and chaos, to mathematical physiology and medicine, uncertainty modelling, computational genomics, network science and many more.

A highlight is your final-year project – a highly creative, challenging and enjoyable experience that is excellent preparation for your future career.

As a graduate, you'll have the chance to join other alumni who have gone on to form successful startups; become technical consultants; work in data science, engineering, energy, or finance; or embark on further research via a PhD.

The courses are accredited by the Institute of Engineering Technology (IET) and the Institute of Mathematics and its Applications (IMA), providing our graduates with all the requirements to become a Chartered Engineer or Chartered Mathematician.

Find out more

Entry requirements, course structure and units
bristol.ac.uk/ug2021-engmaths

'I really enjoy the course. I wasn't sure what to study at university, but engineering mathematics involves everything I could want, combining programming, mathematics and physics to solve real-world problems with mathematical models.'

Laura (MEng Engineering Mathematics with Study Abroad)



Bristol is famous for its engineering heritage. We have valuable links with world-class local engineering and tech companies, and you'll engage with industry from the very start of your studies.



Each year since 2013, final-year undergraduates have awarded the course over 90% satisfaction in the National Student Survey, highlighting how well we understand and respond to the needs of our students.

Recent final-year projects have used engineering maths to detect ocean pollution, design nanoparticles that target cancerous cells, and suppress flutter in aerofoils.



Courses

BEng Engineering Mathematics

MEng Engineering Mathematics

MEng Engineering Mathematics with Study Abroad

MEng Engineering Mathematics with a Year in Industry

Connect with the Faculty of Engineering

 **Engineering, University of Bristol**

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Photography

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This leaflet contains information for students planning to start university in autumn 2021. We have made every effort to ensure all details are correct at the time of going to press (May 2020). However, since this information is subject to change, you are advised to check the University's website, **bristol.ac.uk/ug-study** for the latest updates. Any sample units listed are indicative and offerings may change due to developments in the relevant academic field. Unit availability varies depending on staffing, student choice and timetabling constraints.

