CARDIFF UNIVERSITY
PRIFYSGOL CAERDYDD

Mathematics

Undergraduate
degree programmes

cardiff.ac.uk/mathematics

Empowering future leaders through mathematics

We’re proud to offer a welcoming environment where you can thrive and reach your full potential.

You’ll be part of a vibrant mathematics community, surrounded by some of the brightest minds in the field, all contributing to a cutting-edge research culture.

With a wide range of courses available, you’ll have the freedom to tailor your studies to your personal interests and career goals while developing a deep understanding of mathematics. You’ll be taught by academics committed to pushing the boundaries of what’s possible, bridging theory with real-world applications, and making mathematics not only relevant but revolutionary in today’s world.

Our Maths Support Service is available to provide on-hand assistance, ensuring your academic success. Whether you’re seeking one-on-one help or working in small groups, this service is here to support you every step of the way.

Your undergraduate experience at Cardiff University will be more than just a degree – it’s an exciting first step towards your future career, with endless opportunities for growth, learning, and achievement.

Find out more

Facilities

You'll find us in the Abacws building, centrally located in the University campus, next door to Cathays train station and a five-minute walk from the city centre.

Abacws is a contemporary building designed in collaboration with students and lecturers to create interdisciplinary, flexible and creative workspaces with innovative teaching areas and practices.

Our facilities include:

- Flexible lecture theatres and seminar rooms with innovative layouts to encourage interaction
- Dedicated spaces for student project work
- Computer labs designed to enable group work as well as classes and individual study
- Spaces open to our industrial partners to enable excellent engagement opportunities for our students
- A simulated Trading Room for financial mathematics.

Open doors
with a placement

Develop your employability skills by completing a year working in industry.

Your placement will last typically between 10-12 months and will take place between the second and third year of your degree.

Our dedicated placement officer will help you in finding and applying for your placement and will provide personal development workshops to help you prepare you for your workplace.

Our students have completed placements in the following organisations:

- Admiral Insurance (Cardiff)
- HM Revenue and Customs (London)
- Ministry of Defence (Warminster)
- Office for National Statistics (Newport)
- Welsh Government (Cardiff)
- Barclaycard (Northampton)
- Lloyds Banking Group (Cardiff, Bristol and London)
- PwC (various locations)
- BAE Systems (Bristol)
- Corus (Newport)
- GSK (Greenford and Harlow)
- National Air Traffic Services Ltd (Southampton)
- Roche Pharmaceuticals (Welwyn Garden City)

“**I was thrilled to secure a placement at Roche, one of the world’s leading pharmaceutical companies!** Before this, I wasn’t sure about my career path, but this experience has ignited my passion for healthcare and improving lives, and that’s the route I now want to pursue.”

Syon, graduate in Mathematics

We have links with over 300 institutions and can provide you with the opportunity to embark on a placement across the world.

Explore the world and study abroad

Destinations include Paris, Berlin, Milan and Barcelona, as well as many other universities further afield in the United States, Australia, Canada and Hong Kong.

Our partnerships with top universities mean you can study in some of the most iconic and inspiring cities in the world. Your placement will last one academic year (this will vary depending on your chosen location) and will take place between the second and third year of your degree. You have until the start of your second year to commit to a university abroad, giving you plenty of time to change your mind.
Our Global Opportunities team will support you with any questions that you have, offer a range of international opportunities and can help you with the application process for studying, working, or volunteering abroad.

> **I really liked the freedom of the course and they have really good opportunities to study and work abroad.** My best experience was living and working in France and Switzerland, including 6 months' work at CERN. I cycled to work every day looking at Mont Blanc – it was amazing."
>
> **Rhys, Mathematics (BSc)**

Mathematics

Mathematics (BSc), UCAS code: **G100**
Mathematics with Year Abroad (BSc), UCAS code: **G103**
Mathematics with Professional Placement (BSc), UCAS code: **G105**
Mathematics (MMath), UCAS code: **G101**
Mathematics with Year Abroad (MMath), UCAS code: **G104**
Mathematics with Professional Placement (MMath) , UCAS code: **G112**

Our three-year course provides a broad background in applied mathematics, statistics, computing and operational research.

As you move through the course, you will gain academic independence, progressing to an optional independent project in your final year.

You will also have the opportunity to complete a professional placement year or a year abroad after your second year.

Our four-year MMath shares the same core as our BSc in mathematics but enables you to explore your areas of interest in greater depth, through optional modules, specialised fourth year modules and a substantial research project. This course provides the ideal preparation for high-level entry into relevant professions and is also a solid base for pursuing a research career.

In year four, you will complete a major piece of project work which could include:

- A survey of an existing area of mathematical theory not covered in taught modules
- An introductory research project
- The development of a piece of mathematical software

Not only will you explore a research topic of your choice, but you will also develop the professional skills that graduate employers are looking for. You will also demonstrate that you are at the forefront of the discipline through extensive coverage of topics in our main research areas, such as mathematical analysis, mathematical physics and fluid dynamics.

“**I liked how mathematics would give me transferable skills** and flexibility for my future career path.”

Aurora, Mathematics (MMath)

View our most up-to-date module information

Financial Mathematics

Financial Mathematics (BSc), UCAS code: **15R4**
Financial Mathematics with Year Abroad (BSc), UCAS code: **15R5**
Financial Mathematics with Professional Placement, UCAS code: **15R6**

Build a strong mathematical foundation and explore the frontiers of modern finance, from fintech and AI to market design and investment strategy.

Throughout this course, you will achieve the core mathematical skills needed for a career in finance, banking and insurance. You'll develop a solid foundation in general mathematical theory and techniques, whilst also developing knowledge and skills that are essential for jobs in the finance industry.

The programme offers a good grounding in general mathematical theory and techniques. You will also have the opportunity to complete a professional placement year or a year abroad after your second year.

You will gain an understanding of modern financial markets, institutions, investments and policies, with a focus on issues and topics relevant to the computational and market design side of contemporary finance, including:

- Complex systems
- Trading (in particular high-frequency trading)
- Fund management
- Analytics

"**There are so many different modules that span across pure mathematics, statistics, mechanics and finance.** This means there is so much choice that whatever you want to specialise in, there'll be an option you can choose."

Lauren,
Financial Mathematics (BSc)

Mathematics for the Modern World

Mathematics for the Modern World (BSc), UCAS code: **G300**

Mathematics for the Modern World with a Foundation Year (BSc), UCAS code: **G303**

Mathematics for the Modern World with a Professional Placement Year (BSc), UCAS code: **G301**

Mathematics for the Modern World with a Year of Study Abroad (BSc), UCAS code: **G302**

This BSc will give you the same strong mathematical foundations as a traditional maths degree, with a focus on where maths is heading and how it's transforming our world.

You'll explore real-world problems and learn how maths can be used to create change in areas like sustainability, cybersecurity, data ethics and global development.

You'll learn about the maths underpinning environmental modelling, resource optimisation, and cryptographic algorithms, equipping you with the skills to contribute to a responsible future. You will have the opportunity to tackle creative projects that blend maths with entrepreneurship, communications, and emerging technologies.

Alongside problem-solving and theory, you'll develop essential skills in communication, teamwork, and leadership. You'll learn how to present ideas clearly, work with different audiences, and use data responsibly and ethically. Whether you're programming with the latest software, investigating patterns through statistics, or pitching mathematical solutions to real-world issues, you'll be stretching your creativity as much as your logic.

You'll graduate with a solid understanding of mathematics and how to apply your skills in versatile and dynamic ways. You'll have the confidence to step into industries that rely on maths to drive progress, spark innovation, and shape a better future.

Topics you may study include:

- Mathematical computing
- Operational research
- Entrepreneurship
- Big data
- AI and deep learning

> **On top of the essential theoretical foundations in calculus, analysis, algebra, and probability**, you'll also dive into cutting-edge areas like AI assisted proof writing, environmental modelling, cryptography, and big data analytics."
>
> **Dr Xander Pretty, Lecturer, Mathematics for the Modern World (BSc)**

Up to 47% of this course is available through the medium of Welsh. Please contact the Admissions tutor for more information.

View our most up-to-date module information

Shape your future career

Our degrees open doors to a wide range of professional fields

Many of our graduates choose careers in teaching theoretical mathematics, or explore opportunities in sectors like finance, social research, and scientific studies.

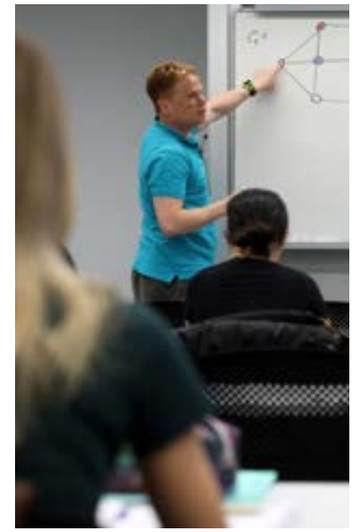
A maths qualification also provides a strong foundation for a career in IT or software development, thanks to the computer-based skills you'll acquire throughout your degree.

Further study

Alternatively, you may choose to use your degree as a stepping stone to further study. Many graduates go on to complete a postgraduate teacher training course, or study for an MSc or PhD.

Our maths students are well-suited for the following job roles:

- Acoustic consultant
- Actuarial analyst
- Actuary
- Chartered accountant
- Data analyst
- Data scientist
- Investment analyst
- Researcher
- Secondary school teacher
- Software developer
- Statistician



Meet Megan North

From studying Mathematics at Cardiff to working as an Operational Researcher for Welsh Government.

“The number of supportive lecturers is great as, without their support, I wouldn’t have walked away with the degree class that I did. Additionally, the opportunities available were crucial in my decision choosing to study at Cardiff University. With placement years, studying abroad, talks from PhD students, presentations from prospective employers and more, I really feel that I was given more than I could have asked for.**”**

Applications

To be considered for entry onto any of the undergraduate courses we offer, you should apply through UCAS: **www.ucas.com**

Entry requirements

These typical requirements are for guidance. Please check our website for the latest information: **www.cardiff.ac.uk/ugcourses**

Most of our offers are conditional on A-level results. The standard A-level offer for single honours mathematics degree programmes is AAB - BBB with one A-level in mathematics. A-levels in general studies and critical thinking are not counted towards this offer.

You are not required to have studied further mathematics, nor does it matter which version of mathematics A-level you have taken, as long as it contains the core material in pure mathematics. A minimum C grade in GCSE English or equivalent is typically required.

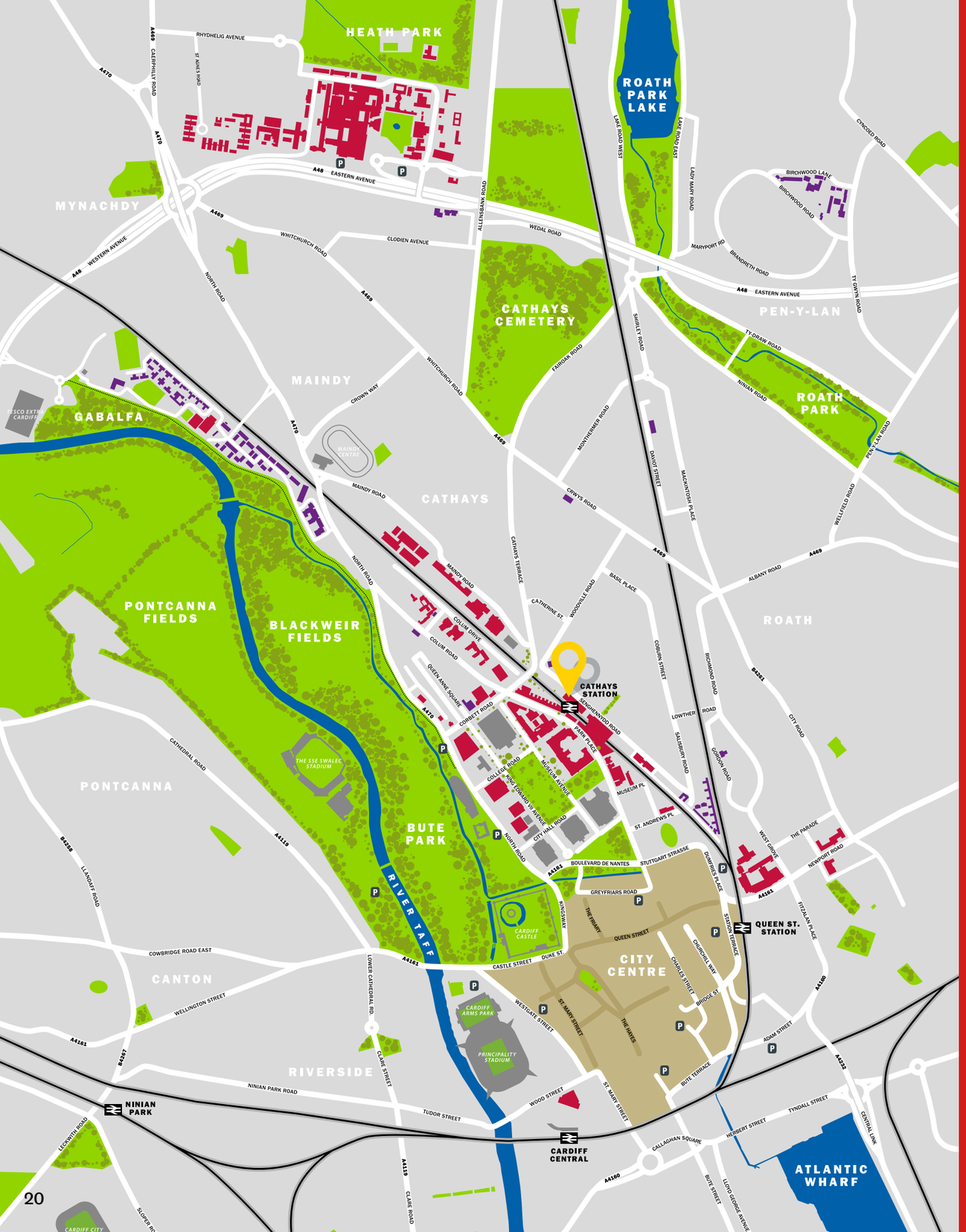
The Welsh Baccalaureate is accepted as one of the three A level grades.

The corresponding IB offer is 34-31 overall, with at least 6 in higher level mathematics or maths analysis and approaches.

Applications from mature students and students who have equivalent qualifications, such as BTEC, GNVQ, ACCESS, are also welcome.

Overseas students are also welcome, and we would consider your qualifications on a case by case basis.

Visit our undergraduate course page to find out more



Mathematics
Cardiff University
Abacws
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Key

- Mathematics
- University and NHS buildings
- Student residences

Important Legal Information

The contents of this brochure relate to the Entry 2027 admissions cycle and are correct at the time of going to press in July 2026. However, there is a lengthy period of time between printing this brochure and applications being made to, and processed by us, so please check our website at: www.cardiff.ac.uk before making an application in case there are any changes to the course you are interested in or to other facilities and services described here. Where there is a difference between the contents of this brochure and our website, the contents of the website take precedence and represent the basis on which we intend to deliver our services to you.

Your degree:
Students admitted to Cardiff University study for a Cardiff University degree.

This brochure is printed on paper obtained from well managed sources using vegetable-based inks. Both the paper used in the production of this prospectus and the manufacturing process are FSC® certified.

The printers are also accredited to ISO14001, the internationally recognised environmental standard.

Mae'r ddogfen hon hefyd ar gael yn Gymraeg.

This document is also available in Welsh.

Cardiff University is a registered charity, no. 1136855

This prospectus can be made available in alternative formats, including large print (text), Braille and on audio tape/CD.

To request an alternative format please contact Laura Roberts:

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Email: **RobertsL9@cardiff.ac.uk**

To find out more about Mathematics

Email: **mathematics@cardiff.ac.uk**

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