“The subject doesn’t get narrower, it broadens.

It is radically different from an A-level course.

People will help you and you will help other people.

The department is friendly and treats students as adults”

‘My Mathematics at Warwick’
Tim O’Leary, MMath graduate
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For more information go to the online version [warwick.ac.uk/mathsadmissions/](http://warwick.ac.uk/mathsadmissions/) and follow the links.

This booklet is only a brief guide to Maths at Warwick.
Why study mathematics?

Power
Much of modern life runs on hi-octane mathematics. Take the Internet, space travel, medical imaging, and the human genome project: none of these would be possible without mathematics.

Money
Mathematics graduates have excellent career prospects. They work in computing, education, finance, for the government... They research into financial products, climate change, medical imaging... From IT to insurance, good mathematicians are always in demand.

Brains
Mathematics stimulates your neuronal networks... reaching parts of your cerebral cortex that other subjects can’t touch. Everyone admires mature intelligence in a human being. Mathematical talent is valuable. Don’t waste it!

Pleasure
Mathematics is exciting, intellectually challenging and aesthetically satisfying; what’s more, it’s often just plain fun.

Our graduates have become:
- Academics
- Actuaries
- Accountants
- Biological Researchers
- Financial Advisers
- Investment Analysts
- Journalists
- School Teachers
- Software Professionals

“Knowledge is power... and in the 21st century it will be the mathematicians that inherit the earth.”

warwick.ac.uk/mathsskills
Why study mathematics at Warwick?

**Choice and Flexibility**
- Choose between the 3-year BSc or 4-year MMath programmes or one of our joint degrees
- Take up to 40% of the Mathematics BSc in optional courses in other departments
- Take advantage of a flexible work load

**Strong Support for Teaching and Learning**
Lectures and small classes are supported by supervisions (with postgraduate students) and tutorials (with staff).

**Caring Staff at Cutting-Edge of Research**
The personal tutor system gives a human face to a student’s university experience. Your tutor monitors your academic progress and looks out for your personal well-being.

**Intellectually Stimulating Atmosphere**
Warwick’s international reputation as a centre of excellence attracts research mathematicians from all over the world to attend meetings and workshops.

**Widely respected Degrees**
Warwick has not compromised its standards. Its curriculum is broad, modern, and rigorous; its degrees are internationally recognised.

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Recent developments

- Maths & Statistics
  - Doctoral Training Centre
- Centre for Complexity Science
- Centre for Scientific Computing
- Financial Mathematics MSc
- Joint Ventures in Maths and Biology
- Focus on Interdisciplinary Research
- Centre for Discrete Mathematics

Warwick professor Martin Hairer won 2014 Fields Medal
The way in... with A-Level qualifications

For October 2016 entry most applicants will receive our standard offer.

Either A* (M) A* (FM) A 2
or A*(M) A (FM) A 1
or A* (M) A* (FM) A*
or A* (M) A* (FM) A A

(M) (FM) denote Mathematics and Further Maths.
1 and 2 denote grades in a Maths STEP paper.

Distinction in AEA is accepted in place of grade 2 in STEP.

Note: General Studies and Critical Thinking do not count towards the A Level requirements.

Why we make a Standard Offer:

► All who achieve it have the potential to get the best from our degrees
► It is a completely transparent policy

We do not normally hold interviews, but suggest you attend an Open Day.
STEP and AEA

STEP and AEA are based on the same syllabus as A-level Maths (STEP Papers 1 and 2, and AEA) and Further Maths (STEP Paper 3), but offer more challenging problems than at A-level.

Their questions demand more independent thinking - often you have to decide for yourself what techniques you need to use. This is very good preparation for a university degree in mathematics, so we do recommend, though we do not insist, that anyone wishing to apply to Warwick should take either AEA or at least one STEP paper. To benefit, you need plenty of practice with past papers.

Download them free from admissionstests.cambridgeassessment.org.uk/adt/step edexcel.com/quals/gce/aea/9801/Pages/default.aspx

Online tuition in Further Maths, STEP and AEA, and one-day problem solving training, are available from the Further Mathematics Support Programme, furthermaths.org.uk

More information about STEP and AEA is available from warwick.ac.uk/fac/sci/maths/admissions/ug/aeastep

“STEP and AEA are a first rate preparation for university mathematics, and so play an important role in our selection process”
The way in... with other qualifications

We encourage applications from students with diverse qualifications; for instance, we accept the following:

- International Baccalaureate (39 points with 6,6,6 in Higher Level subjects, including Higher Level Maths, plus grade 2 in a STEP paper or Distinction in AEA.)
  Or (39 points with 7,6,6 in Higher Level subjects, including Higher Level Maths)

For more details, go to warwick.ac.uk/maths/admissions/ug/otherquals or email us at mathsadmissions@warwick.ac.uk

“We welcome applications from students with the potential to succeed whatever their background”
The way in... for overseas students

 Overseas Applicants
 We welcome applications from overseas, whether or not you fulfill the requirements on pages 4-6. Whatever your background, you must show you have the potential to succeed in the degree course you apply for. If in doubt, email us at mathsadmissions@warwick.ac.uk

 Typical offers are listed at warwick.ac.uk/maths/admissions/ug/overseas

 Our International Office also offers help and advice at www2.warwick.ac.uk/services/international/

 English language:
 All candidates must also satisfy the University's Admissions Requirement, including a minimum level of competence in the English language.

 warwick.ac.uk/study/undergraduate/apply/language/
Mathematics Departments degrees

There are two single-subject Mathematics Degrees:

- **Single-Honours BSc (G100)**
  Our 3-year degree in Mathematics has a broad scope and allows transfer to three joint degrees.

- **Single-Honours MMath (G103)**
  This 4-year degree is the natural route for those contemplating a mathematical career.

In addition three joint degrees:

- **Mathematics and Business Studies BSc (G1NC)**
  Years 1 and 2 are spent on the Mathematics BSc degree. Year 3 is in the Warwick Business School.

- **Mathematics and Economics BSc (GL11)**
  Year 1 is the same as Mathematics (G100) plus the module Economics 1; Year 2 is 50-50 Maths/Economics; Year 3 is 100% Economics.

- **Mathematics and Philosophy BSc**
  (3-year GV15 with the possibility to transfer to a 4-year BSc, subject to meeting academic requirements)

**Three or four years Maths?**
The three year MathsBSc offers more flexibility; students on the four year MMath concentrate more on mathematics and go more deeply into the subject.

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At Warwick there are 12 degrees whose titles include ‘Mathematics’:

- 5 are administered by Mathematics
- 4 by Statistics
- 2 by Physics
- 1 by Computer Science

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The 5 Mathematics courses at Warwick:

- have different UCAS codes
- take the same first year maths modules
- are usually easy to transfer between during the first year

Other transfers are more difficult but not completely ruled out.
Mathematical degrees in other departments

In the Statistics Department:

- **Mathematics and Statistics** is a degree designed for mathematically able students with an interest in solving practical problems in modern science, business, government etc. It is offered as a 3-year BSc (GG13) or a 4-year MMathStat (GGC3).

- **MORSE BSc (GLN0)** (Mathematics, Operations Research, Statistics and Economics) is offered as a 3-year BSc (GLN0) or a 4-year MMorse (G0L0).

In the Physics Department:

- **Mathematics and Physics** is available as a 3-year BSc (GF13) and a 4-year MMPhys (FG31), both aimed at students with strengths in both subjects.

In the Computer Science Department:

- **Discrete Mathematics BSc (G190)**, a 3-year BSc (G190), focuses on discrete (as opposed to continuous) structures such as graphs, networks and algorithms.

Jointly by Statistics and Computer Science

- **Data Science (7G73)**. A 3-year BSc in a combination of Mathematical Statistics and Computer Science.
Open days

Undergraduate Open Days
This year the University organises four undergraduate open days for students wishing to visit the University and see the departments offering degrees they are interested in.

Students and their accompanying guests are offered a guided tour and can visit the academic departments of their choice.

For more details, see warwick.ac.uk/opendays

Mathematics Department Applicant Days
If you receive an offer for a Mathematics Department degree course, you will be invited to one of our Maths open days between January and March 2016.

A visit to the Mathematics Institute will give you a good idea of the atmosphere of the University and the style of the mathematics we teach. Our applicant days are informal and there are no interviews. They give you an opportunity to meet members of staff, to ask questions about courses and campus life, and to talk to students who are already here.
Fees and Widening Access

Academic Fees
Academic fees for Home/EU full-time undergraduate students in 2016-17 will be £9,000 per annum. This covers tuition, examination registration and some student amenities, but not accommodation, meals or other personal items. Fees for subsequent years will depend on government decisions.

For further details about fees for home/EU and Overseas students, see warwick.ac.uk/ugfees

Removing Barriers
Some financial support for home students from families on lower incomes will be provided through Warwick National Scholarships and Warwick Bursaries. More information can be found at warwick.ac.uk/services/academicoffice/funding

The Annual tuition fees for non-EU residents are £20,180 in 2015-16
A warm welcome to students from abroad

Warwick Mathematics degrees have an outstanding international reputation. The Mathematics staff are recruited world-wide and contribute to the Institute’s cosmopolitan outlook.

Location
The Warwick campus is on the southern edge of Coventry surrounded by Warwickshire countryside, close to the ancient towns of Warwick and Kenilworth with their majestic castles, and not far from Shakespeare’s birthplace, Stratford-upon-Avon.

Cultural Life
On Campus: Warwick Arts Centre is one of the largest arts centres in the UK, attracting around 300,000 visitors a year to over 2,000 individual events. It boasts three outstanding performance venues, plus cinema and gallery. An exciting new creative block was completed in autumn 2009. Based in the Arts Centre, the Music Centre is home to all students with a desire to make music.

And Beyond: The Royal Shakespeare Company performs in its Stratford theatres, the new Ricoh arena in Coventry presents major musical and sporting events, while Birmingham and London are within easy reach by train.
Living at Warwick – Accommodation

On or Off Campus?
► Students joining the University for the first year are given priority for a room on campus. See Frequently Asked Questions on the Accommodation website, warwick.ac.uk/accommodation
► Second and most final-year students live off campus, many in group houses in nearby towns

Campus Rooms – Warwick offers
► Over 6,400 rooms of all types: en-suite single or shared rooms; study bedrooms with or without basins; flats for small groups
► A choice of 30-week or 39-week lets, the latter allowing you to stay for the two shorter vacations
► Prices ranging from £81 to £167 per week in 2015-16

Off-Campus Accommodation
Most students rent from Warwick Accommodation:
► It has hundreds of properties in Coventry, Kenilworth and Leamington Spa
► They are well maintained and furnished. There are no hidden costs
► They are close to convenient bus routes to the University

See warwick.ac.uk/accommodation for more details.
Special features of our programme

**Challenge**
The programme is fast paced. Many modules are offered at an earlier stage than in other universities. But meeting our offer ensures you are well prepared mathematically to cope with this.

**Teaching, Learning and Support**
We provide particularly strong teaching support, especially in Year 1, but encourage students gradually to develop the habit of independent learning. Our modes of teaching are varied, but traditional 50-minute lectures to large classes are still the norm. Your individual difficulties are sorted out at supervisions, meeting in groups of five twice a week in Year 1. Your supervisor (a graduate or fourth year) will mark your work and give you feedback. In later years, when modules have fewer students, support is offered through examples classes led by a research student. Your Tutor (a member of staff) will also meet you regularly and take an interest in your academic progress and personal welfare.

See [warwick.ac.uk/mathsadvice](http://warwick.ac.uk/mathsadvice) for more general advice for first year students.

Your Tutor will:
- offer advice on your studies
- help you with Maths
- give the broad picture
- take an interest in your welfare
- write job references

“Your tutor is a friend within the system who always has your interests at heart”
Special features... (continued)

Choice and flexibility are our watchwords.

The Normal Load is 120 CATS a year. Since a 30 hour lecture course is typically worth 12 CATS, this comes to 300 contact hours a year. With tutorials, supervisions, and 2–3 hours of further study for each lecture, you should expect to work a 40 hour week.

Maths-based Modules form a mandatory core of 75% of the normal load in Year 1 but only 50% in Years 2 and 3 of the BSc. The rest can be chosen from courses across the University (with Business Studies, Physics, Languages, Economics, Computer Science, Statistics, and more Mathematics currently the most popular). The online Undergraduate Handbook contains detailed information about all mathematics modules and optional modules in other subjects often taken by maths students. [warwick.ac.uk/fac/sci/maths/undergrad/ughandbook/](http://warwick.ac.uk/fac/sci/maths/undergrad/ughandbook/)

In each year of the MMath at least 75% of the normal load is chosen from Mathematics and the choice grows as the student progresses.

Varying the Load

Students can choose how many modules they study and offer for examination - up to 150 CATS, or 25% more than the normal load - great scope for those with broad interests and lots of intellectual energy.

First-year modules set the scene:

- Foundations (Infinite sets, number systems, logic and proof)
- Analysis
- Differential Equations
- Geometry and Motion
- Abstract Algebra
- Linear Algebra
- Probability
- Introduction to Geometry
- Mathematics by Computer (Learn to use the symbolic package Matlab)

See [warwick.ac.uk/fac/sci/maths/undergrad/ughandbook/](http://warwick.ac.uk/fac/sci/maths/undergrad/ughandbook/) on how to plan your degree course.
Life on Campus

Warwick Campus is like a miniature city, with restaurants, cafés, bars, shops, theatres and cinemas, set in beautiful parkland. Sporting facilities include a swimming pool, fitness complex, aerobics studio, weights room, climbing wall, athletics track, sports pitches and tennis courts, including an indoor tennis centre.

Campus Quarters: Most first-year students live on campus. Nearly all second-year and most final-year students live off campus – see page 13.

Entertainment: The recently renovated Students’ Union, the hub of Campus social life, caters for all tastes, with regular nightclub events and live bands. The Union runs 250+ societies and clubs from Accounting and Bridge to Drama (WUDS), Music Appreciation and Students in Free Enterprise (SIFE). There is also a very active undergraduate Mathematics Society (WMS) that organises weekly Maths Café drop-in help sessions and produces revision notes at exam time.

While at Warwick you could...

- Join the Maths Society
- Help edit the Mathemagician (a termly magazine) or the Warwick Boar
- Become part of the local and regional community in the West Midlands
- Join Warwick Volunteers and take on the role of Project Leader
- Do a short work placement or a summer internship
- Teach schoolchildren in South Africa (Warwick in Africa)

warwicksu.com/
warwickmaths.org/
warwicksport.warwick.ac.uk/
warwick.ac.uk/about/community/volunteers
warwick.ac.uk/giving/priority/responsibility/wina
Value added (at the frontiers of knowledge)

Mathematics is constantly evolving. The Warwick Mathematics Institute is home to a number of world-leading research groups in pure and applied mathematics. The Mathematics Research Centre runs the many workshops and conferences that keep our department at the forefront. Recent initiatives involving mathematics include:

- MASDOC, which is the Centre for Doctoral Training in Mathematics and Statistics
- Discrete Mathematics and its Applications and Complexity Science, which involve Computer Scientists and Physicists
- The Centre for Systems Biology, doing research in Cellular Mechanics and Molecular Organisation
- The Centre for Scientific Computing, driving high-performance, interdisciplinary computational research
- MIR@W (Mathematical Interdisciplinary Research at Warwick), which fosters mathematical research and training across 11 academic disciplines
- Financial Mathematics, a concentrated one-year MSc

“These cutting-edge activities contribute to our... atmosphere of intellectual excitement”

Active research areas include:

- Algebraic and Differential Geometry
- Number Theory
- Probability Theory
- Data Assimilation
- Mathematical Biology
- Complexity Science
Examinations

The Academic Year has 3 terms of 10 weeks. It starts on the Monday nearest to 1st October and ends around 30th June. Most modules are taught in Terms 1 and 2 with a few short courses in Term 3.

University Examinations are held in January, April, May and June. The marks from all examined modules are combined to produce an overall percentage for the year and this determines your class. The ranges are normally:

First Class Honours  70% or above
Class Two, Division 1  60%–69%

…and so on. Your final degree classification is based on a weighted combination of marks from all your years of study: If Y_n is your total for Year n, your score F for your whole degree is given by the formula

3-Year BSc: \[ F = \frac{10Y_1 + 30Y_2 + 60Y_3}{100} \]
4-Year MMath: \[ F = \frac{10Y_1 + 20Y_2 + 30Y_3 + 40Y_4}{100} \]

A good First... is usually required to do a higher degree.

A Guardian article published on 22 May 2012 ranked Warwick as one of five top performing universities in the UK for students securing job offers while still studying.
Careers

Your future starts here.
The Careers Service works actively with students, providing skills training and careers advice. They can continue to give advice to alumni for up to three years after they have graduated. warwick.ac.uk/careersandskills

As a Warwick graduate with a mathematics degree, you will have excellent prospects in a wide range of careers, the most popular areas being Computing, Education, and the Financial Sector (Accountancy, Actuarial and Investment Banking). The recruitment arms of major employers, like KPMG or IBM, target Warwick.

For Warwick’s Destination of Leavers from Higher Education data: warwick.ac.uk/services/scs/career/gradstats/public_gems

Why is this?
In today’s work place, the ability to adapt to change and to learn new things is as important as having a particular range of knowledge. During a Warwick mathematics degree you will develop many of the qualities of intellect and temperament needed to meet new challenges, including:

- Analytical Skills
- Logical Thought-Processes
- Problem-Solving Ability
- Investigative Skills
- Communication Skills
- Effective Working Habits

Percentages of recent maths graduates entering employment:

- 31% Banking/Other Finance
- 9% IT
- 30% Education
- 40% Other
- 23% Actuarial/Accountancy
- 6% were (also) doing further study.
Taking a year out

Before University
We welcome applicants who wish to take a ‘gap year’ between school and university. Just achieve your admissions offer and your place will be reserved.

During your Degree Course
Students can also take a year out during their course:

- The EU Erasmus Programme
  We encourage students to consider spending Year 3 at a European partner university. Your degree title will feature ‘with Intercalated Year’ or ‘MMath with Study in Europe’. While you are abroad, the Erasmus programme provides financial support of 350 euros per month. warwick.ac.uk/mathserasmus
- Industrial Placements
  After year two, students can take a year’s placement to experience mathematics in action. The job must be deemed to provide learning experiences related to the degree course. A satisfactory placement leads to the award of a ‘BSc with Intercalated Year’ (and often to a potential job offer after graduation).

“Erasmus applicants... must have working knowledge of the relevant language before departing. Suitable courses are available in the Language Centre.

Maths has Erasmus agreements with 23 universities in:

- Belgium
- France
- Germany
- Italy
- Malta
- Portugal
- Spain
- Switzerland
- The Netherlands
“Spending an Erasmus year in Germany has been a fantastic addition to my Warwick degree. Göttingen is a town that revolves around its student population, and one that has played an important role in mathematical history. Studying mathematics in another language is a unique experience. I learnt a new approach to several topics, meaning that at the end of the year I have not only come away with much improved German skills but also a much better understanding of the mathematics from my first two years. I made some life-long Erasmus friends from all over the world, with whom I spent a month travelling around Croatia and the rest of Germany. I am now considering working abroad in the future.

Studying Mathematics at Warwick has also enabled me to get involved in the Warwick in Africa scheme. This is my second summer in Tanzania teaching mathematics to students between the age of 14 to 20 at a local school for six weeks. It has been amazing to be able to pass on some of the enjoyment I have found in studying mathematics at Warwick over the past three years to the Tanzanian students, and teaching my first class to over 80 students will remain a precious memory for years to come!

I am now looking forward to returning to Warwick for my final year and am excited to discover what other opportunities my degree will hold for me in the future.”
Mathematics Institute,
Zeeman Building, Coventry CV4 7AL

+44 (0)24 7652 8983
+44 (0)24 7652 4182
mathsadmissions@warwick.ac.uk

warwick.ac.uk/maths