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Why study Mathematics?

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

Our graduates have become:

- Academics
- Accountants
- Actuaries
- Bankers
- Biologists
- Card-sharps
- Computer Scientists
- Journalists

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 education, finance, government. They research into how the ant ambles, how the zebra got its stripes. From IT to insurance, good mathematicians are always in demand.

Brains

Mathematics stimulates your neuronal networks; it reaches 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.

<http://go.warwick.ac.uk/mathsskills>

Why do it at Warwick?

Choice and Flexibility

- Choose between the 3-year BSc or 4-year MMath programmes or one of our joint degrees
- Supplement the mathematics core with any other subject taught in the University
- 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.

Recent new 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



The way in... with A-Level qualifications

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.

For October 2012 entry most applicants will receive our standard offer.

Offer: A*(M) A*(FM) A2 or A*(M) A(FM) A1

(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.

Further Maths, STEP and AEA

Learning Further Maths, and solving STEP problems will prepare you better for a mathematics course at university.

Further Maths: You should take as many Further Pure and Mechanics units as possible.

Online tuition is available from the Further Mathematics Support Programme: <http://www.furthermaths.org.uk>

STEP and AEA: The questions on these papers are closer to the style of mathematical thinking you will meet at university than those on A-Level papers. We therefore require you to sit at least one of these papers, even if your school is not able to help. You will not need to learn any material beyond A-Level, but you must practise working on problems from past papers. These require you to put together techniques from different parts of the A-Level syllabus. Online help and past papers, are available from:

<http://www.furthermaths.org.uk/aeastep.php>

<http://www2.warwick.ac.uk/fac/sci/math/admissions/ug/aeastep/>

<http://www.edexcel.com/quals/gce/aea/9801/Pages/default.aspx>

<http://www.admissionstests.cambridgeassessment.org.uk/act/step>

“STEP and the
Advanced Extension
Award (AEA)
are highly
valued”



The way in... with other qualifications

“We welcome applications from students with the potential to succeed whatever their background,”



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

- **International Baccalaureate** (39 points with 6 in Maths and two other Higher Level subjects, plus grade 2 in a STEP paper or Distinction in AEA.)
- Many other types of qualification are also considered, for example: **Irish Highers**, the **European and French Baccalaureates**, the **German Abitur**, the **Brandos Atestatas** and so on. These applicants will additionally be required to take a STEP or AEA paper.

For more details, go to <http://go.warwick.ac.uk/mathsadmissions/otherquals> or email us at mathsadmissions@warwick.ac.uk

The way in... for overseas and mature 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 go.warwick.ac.uk/math/admissions/ug/overseas

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

Returning to Study

Candidates returning to study are encouraged to apply, but they will need a recent qualification equivalent to an A grade in A-Level Mathematics, or an Open University course. Offers, based on interviews, are tailored to individual circumstances.

English Language:

All candidates must also satisfy the **University's Admissions Requirement** for admission, including a minimum level of competence in the English Language.

<http://www2.warwick.ac.uk/services/international/prospective/englishlanguage/>

The University's
International Office:
University of Warwick,
Coventry CV4 8UW

Tel:
+44 (0)24 7652 3706

Email:
int.office@warwick.ac.uk

Mathematics Departments degrees

At Warwick there are 9 degrees whose titles include 'Mathematics':

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

The 5 Mathematics courses at Warwick:

- have different UCAS codes
- share a large common core of their first years
- are usually easy to transfer between during the first year
- other transfers are more difficult but not completely ruled out

There are two **single-subject** Mathematics Degrees:

- **Mathematics Single-Honours BSc (G100)**
Our 3-year degree in Mathematics has a broad scope and allows transfer to three joint degrees.
- **Mathematics Single-Honours MMath (G103)**
This 4-year degree is the natural route for those contemplating a mathematical career.

In addition **three joint degrees**, all lasting 3 years:

- **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 (GV15)**
Year 1 is in the Mathematics Department. In Year 2 or 3 students transfer to the Philosophy Dept.

Three Years or Four?

If you are contemplating G100 or G103, we advise you to register for G103 on your UCAS application. Changing later to the three year course G100 is very easy.

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.

Mathematics and Statistics and MORSE

For further details:
<http://www2.warwick.ac.uk/fac/sci/statistics/courses/>

Mathematics and Physics:

go.warwick.ac.uk/fac/sci/physics/undergraduate_study/

Discrete Mathematics:

<http://www2.warwick.ac.uk/fac/sci/dcs/admissions/dmats>

Open days

University of Warwick
Open Days are held
on Saturdays in
early May and late
September.

Online booking opens
4 weeks beforehand,
but fills up quickly.

Mathematics
Department Open
Days:

- By invitation
between January
and March 2012

University Open Days

Each year the University organises 2 open days for students wishing to visit the University and see the departments offering degrees they are interested in applying for. The students will get a guided tour and can visit the academic departments of their choice.

For more details, see <http://go.warwick.ac.uk/opensdays>

Mathematics Department Open Days

If you receive an offer for a Mathematics Department degree course, you will be invited to one of our open days between January and March 2012.

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 open 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

Starting in 2012-13

The full academic fee for home/EU full-time undergraduate students will be £9,000. This fee covers tuition, examination, registration and some student amenities, but not accommodation, meals and other personal items. Fees for subsequent years will depend on government decisions.

For further details about fees for home/EU and Overseas students, see <http://www2.warwick.ac.uk/study/next/finance/> and go.warwick.ac.uk/ugfees

Removing Barriers

The University of Warwick offers a world class education to any home full-time undergraduate student with the ability to benefit, regardless of their economic circumstances. Significant 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 www.warwick.ac.uk/go/ugfunding

Annual tuition fees for non-EU residents were £12,325 in 2011-12.

- Fees for 2012-13 will be set early in 2012.

A warm welcome to students from abroad



Did you know?

- For an overseas student, tuition for a 3-year Bachelor of Science degree at Warwick costs around US\$58,000

Compare, for instance, with...

- A Bachelor degree at Stanford in California. This takes 4 years and tuition costs US\$154,800

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, go.warwick.ac.uk/accommodation
- Second and most final-year students live off campus, many in group houses in nearby towns

Campus Rooms – Warwick offers

- Around 6,000 rooms of all types: en-suite single or shared rooms; study bedrooms with or w/out 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 £76 - £145 per week in 2012-13

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 <http://go.warwick.ac.uk/accommodation> for more details.

“ in your **second** year, share a house off campus with friends you made in your first year ”

Leamington Spa:

- Is a centre of the computer games industry
- Has an elegant Georgian town centre
- Has a sizable student population

Special features of our programme

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”

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 <http://go.warwick.ac.uk/mathsadvice> for more general advice for first year students.

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).

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.

See <http://go.warwick.ac.uk/mathsguide> on how to Plan Your Degree Course.

First-year courses set the scene:

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

Life on Campus



While at Warwick you could...

- Join the Maths Society
- Help edit the Warwick Boar (the student newspaper)
- Make your first parachute jump
- Run a charity event
- Strut upon the stage
- Front a programme on the campus radio station

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. 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 discos and live bands. The Union runs 250+ societies and clubs from Real Ale and Paintball to Photography and Salsa. There is even an active undergraduate Mathematics Society.

<http://www.warwicksu.com/societies>

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 new **Centre for Doctoral Training in Mathematics and Statistics**
- Two new centres, for **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 Geometry
- Dynamical Systems
- Financial Maths
- Mathematical Biology
- Complexity Science

Judgement day (examinations)

A good First...

is usually required to do a higher degree.



In July 2011...

77% of MMaths finalists got a First.

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 at the end of each year of study in weeks 6–9 of Term 3. 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

$$\text{3-Year BSc:} \quad F = (10Y_1 + 30Y_2 + 60Y_3)/100$$

$$\text{4-Year MMath:} \quad F = (10Y_1 + 20Y_2 + 30Y_3 + 40Y_4)/100$$

The afterlife (jobs)

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.

Why is this?

In today's work place, the ability to adapt to change and to learn new things is more important than 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
- Enhanced Personal Qualities

Percentage of recent maths graduates entering employment:

28% Actuarial/
Accountancy

21% Banking/Other
Finance

11% IT

8% Education

28% Other

while 24% were (also)
doing further study.

6 months

after graduating
around 89% of the
graduates were in work
or in further study.

Taking a year out

Maths has Erasmus agreements with 23 universities in:

- Belgium
- France
- Germany
- Italy
- Malta
- Portugal
- Spain
- Switzerland
- The Netherlands

“Erasmus applicants...

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

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’. Whilst abroad, your LEA and Erasmus offer a level of financial support and you do not pay academic fees.
<http://go.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).