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Mathematics Course Information Sheet for entry in 2023

Mathematicians have always been fascinated by numbers. One of the most famous problems is Fermat's Last Theorem: if $n \geq 3$, the equation $x^n + y^n = z^n$ has no solutions with x, y, z all nonzero integers. An older problem is to show that one cannot construct a line of length $3\sqrt{2}$ with ruler and compass, starting with a unit length.

Often the solution to a problem will require you to think outside its original framing. This is true here, and while you will see the second problem solved in your course, the first is far too deep and was famously solved by Andrew Wiles.

In applied mathematics we use mathematics to explain phenomena that occur in the real world. You can learn how a leopard gets its spots, explore quantum theory and relativity, or study the mathematics of stock markets.

We will encourage you to ask questions and find solutions for yourself. We will begin by teaching you careful definitions so that you can construct theorems and proofs. Above all, mathematics is a logical subject, and you will need to think mathematically, arguing clearly and concisely as you solve problems. For some of you, this way of thinking or solving problems will be your goal. Others will want to see what else can be discovered. Either way, it is a subject to be enjoyed.

There are two Mathematics degrees, the three-year BA and the four-year MMath. Decisions regarding continuation to the fourth year do not have to be made until the third year. The first year consists of core courses in pure and applied mathematics (including statistics). Options start in the second year, with the third and fourth years offering a large variety of courses, including options from outside mathematics.

A typical week (Years 1 and 2)

- Around ten lectures and two-three tutorials or classes a week
- Additional practicals in computational mathematics (first year) and numerical analysis (if taken)

A typical week (Years 3 and 4)

- Six-ten lectures and two-four classes each week, depending on options taken
- Compulsory dissertation in the fourth year

Tutorials are usually 2-4 students and a tutor. Class sizes may vary depending on the options you choose. There would usually be around 8-12 students though classes for some of the more popular papers may be larger. Most tutorials, classes, and lectures are delivered by staff who are tutors in their subject. Many are world-leading experts with years of experience in teaching and research. Some teaching may also be delivered by postgraduate students who are usually studying at doctorate level. To find out more about how our teaching year is structured, visit our [Academic Year](#) page.

Course structure

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YEAR 1	
COURSES Compulsory Year 1 includes: <ul style="list-style-type: none">• Algebra• Analysis• Probability and statistics• Geometry• Dynamics• Multivariable calculus	ASSESSMENT First University examinations: five compulsory papers; Computational mathematics projects

YEAR 2	
COURSES <ul style="list-style-type: none">• Compulsory core:<ul style="list-style-type: none">○ Algebra○ Complex analysis○ Metric spaces○ Differential equations• Selection from topics including: Algebra; Number theory; Analysis; Applied analysis; Geometry; Topology; Fluid dynamics; Probability; Statistics; Numerical analysis; Graph theory; Special relativity; Quantum theory	ASSESSMENT Final University examinations, Part A: three core papers and six or seven optional papers

YEARS 3 AND 4

COURSES

- Large variety, ranging across: Algebra; Applied and numerical analysis; Algebraic and differential geometry; Algebraic and analytic topology; Logic and set theory; Number theory; Applied probability; Statistics; Theoretical and statistical mechanics; Mathematical physics; Mathematical biology; Mathematical geoscience; Networks; Combinatorics; Information theory; Deep learning; Mathematical philosophy; Computer Science options; History of mathematics
- A dissertation in Year 4 is compulsory

The options listed above are illustrative and may change. A [full list of current options](#) is available on the Mathematics website.

ASSSSMENT

Year 3: Final University examinations, Part B: eight papers or equivalent

Year 4: Final University examinations, Part C: eight, nine or ten papers or equivalent, including a dissertation

Classification on Parts A and B: currently a 2:1 over Parts A and B, as well as a 2:1 in Part B alone, is required to progress to Part C.

MMathPhys Year 4

The Physics and Mathematics Departments jointly offer an [integrated master's level course in Mathematical and Theoretical Physics](#). Mathematics students are able to apply for transfer to a fourth year studying entirely mathematical and theoretical physics, completing their degree with an MMathPhys. The course offers research-level training in: Particle physics, Condensed matter physics, Astrophysics, Plasma physics and Continuous media.

The University will seek to deliver this course in accordance with the description set out above. However, there may be situations in which it is desirable or necessary for the University to make changes in course provision, either before or after registration. For further information, please see the University's [Terms and Conditions](#).

Fees

These annual fees are for full-time students who begin this undergraduate course here in 2023.

Information about how much fees and other costs may increase is set out in the University's Terms and Conditions.

Please note that while the University sets out its annual fees as a single figure, this is a combined figure for both your University and college fees. More information is provided in your [Terms and Conditions](#).

UNDERGRADUATE ADMISSIONS AND OUTREACH

University Offices, Wellington Square, Oxford OX1 2JD



Fee status	Annual Course fees
Home (UK, Republic of Ireland, Channel Islands & Isle of Man)	£9,250
Overseas (including most EU students– see Note below)	£37,380

Note: Irish nationals living in the UK or Ireland, EU, other EEA, and Swiss nationals who have been granted settled or pre-settled status in the UK under the EU settlement scheme are eligible for 'Home fee' status and student loan support, subject to meeting residency requirements. We will contact you directly if we need further information from you to determine your fee status. Please refer to the [Undergraduate fee status](#) pages for more information.

Living costs

Living costs for the academic year starting in 2023 are estimated to be between £1,290 and £1,840 for each month you are in Oxford. Our academic year is made up of three eight-week terms, so you would not usually need to be in Oxford for much more than six months of the year but may wish to budget over a nine-month period to ensure you also have sufficient funds during the holidays to meet essential costs.

Living costs breakdown

	Per month		Total for 9 months	
	Lower range	Upper range	Lower range	Upper range
Food	£300	£470	£2,700	£4,230
Accommodation (including utilities)	£715	£860	£6,435	£7,740
Personal items	£180	£305	£1,620	£2,745
Social activities	£40	£90	£360	£810
Study costs	£35	£80	£315	£720
Other	£20	£35	£180	£315
Total	£1,290	£1,840	£11,610	£16,560

In order to provide these likely living costs (which are rounded to the nearest £5), the University and the Oxford SU conducted a living costs survey to complement existing student expenditure data from a variety of sources, including the UK government's Student Income and Expenditure Survey and the National Union of Students (NUS).

The current economic climate and high national rate of inflation make it very hard to estimate potential changes to the cost of living over the next few years. When planning your finances for any future years of study in Oxford beyond 2023-24, it is suggested that you allow for potential increases in living expenses of 5% or more each year – although this rate may vary significantly depending on how the national economic situation develops. UK inflationary increases will be kept under review and the [Living costs webpage](#) updated.

Additional Fees and Charges Information for Mathematics

There are no compulsory costs for this course beyond the fees shown above and your living costs.