



UNIVERSITY OF
LIVERPOOL

BA (Hons)

Mathematics and Philosophy

UCAS code GV15

Entry requirements

A level: ABB

Study mode

Full-time

Duration

3 years

Apply by: **29 January 2025**

Starts on: **22 September 2025**

About this course

What are numbers? Do they exist? How can we know about them if they are not to be found in the familiar world of space and time that we inhabit? These are just some of the philosophical questions raised by the study of Mathematics.

Introduction

The relationship between philosophy and mathematics runs both ways: mathematics has helped formalise the study of logical argument that lies at the base of all good philosophy. So, it is no surprise that some of the greatest philosophers (eg Descartes, Leibniz, Frege, and Russell) have been mathematicians too.

This programme allows you to study Mathematics and Philosophy in equal amounts over three years. The Philosophy component of the degree course includes modules in logic and the formal study of reasoning, in which you will learn how to assess arguments and construct proofs. You will learn how to understand complex and demanding texts, and to recognise good and bad arguments. In Mathematics, the core first-year modules introduce fundamental ideas, and are designed to bridge the gap between previous study and university. In subsequent years, you will generally take four modules in mathematics each year, choosing either to specialise or to continue to study a broad range of topics.

By the end of the programme, you will be able to understand complex and demanding texts, reason intelligently and imaginatively about ethical, metaphysical, and epistemological issues, and have a grasp of the advantages and problems of a wide range of metaphysical and ethical views. In addition, you will have mastered a wide range of mathematical disciplines, and have extended your numerical, logical, and quantitative skills.

Year in Industry

This programme is available with a Year in Industry. Year Three is spent on a paid placement within an organisation in industry, broadly defined. You will be supported by the School of the Arts and the Department of Philosophy throughout, and your reflective written account of the experience will contribute towards your final degree result. If you wish to study this programme with a Year in Industry, please put the option code 'YI' in the 'Further Choices' section of your UCAS application form.

What you'll learn

- A broad knowledge of Mathematics and of Philosophy
- Advanced numerical, logical, and quantitative skills
- Techniques for solving problems in several areas, and the ability to apply those techniques with confidence
- Competence in using a variety of educational resources
- Confidence in presenting technical material and previously unfamiliar ideas to small audiences
- Analytical, argumentative, communications and problem-solving skills
- Understanding of complex and demanding texts
- The ability to reason intelligently and imaginatively about ethical, metaphysical, and epistemological issues

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Course content

Discover what you'll learn, what you'll study, and how you'll be taught and assessed.

Year one

You will take seven required modules: four from Philosophy, and three core foundation modules from Mathematics; and choose one optional module from Mathematics.

Please note: not all mathematics modules are listed and you will be required to take mathematics modules in each year.

Modules

Compulsory modules	Credits
<u>CALCULUS I (MATH101)</u>	15
<u>CALCULUS II (MATH102)</u>	15
<u>INTRODUCTION TO LINEAR ALGEBRA (MATH103)</u>	15
<u>INTRODUCTION TO LOGIC (PHIL127)</u>	15
<u>MIND, KNOWLEDGE AND REALITY (PHIL103)</u>	15
<u>PHILOSOPHICAL INSIGHTS (PHIL106)</u>	15
<u>PHILOSOPHY TOOLKIT (PHIL105)</u>	15
Optional modules	Credits
<u>NUMBERS, GROUPS AND CODES (MATH142)</u>	15

Programme details and modules listed are illustrative only and subject to change.

Year two

In each semester, you will take 30 credits from Mathematics and 30 credits from Philosophy (**SOTA260** counts towards Philosophy credits).

- **SOTA260** is compulsory if you choose to study this programme with a Year in Industry.
- **MATH142** may be taken in year two only by students that did not take it in year one.

Modules

Compulsory modules	Credits
<u>DIFFERENTIAL EQUATIONS (MATH221)</u>	15
<u>LOGIC (PHIL207)</u>	15

Optional modules	Credits
<u>BUSINESS ETHICS (PHIL272)</u>	15
<u>CLASSICAL MECHANICS (MATH228)</u>	15
<u>COMMUTATIVE ALGEBRA (MATH247)</u>	15
<u>COMPLEX FUNCTIONS (MATH243)</u>	15
<u>FINANCIAL MATHEMATICS (MATH260)</u>	15
<u>KNOWLEDGE AND EPISTEMIC JUSTICE (PHIL212)</u>	15

Optional modules	Credits
<u>LINEAR ALGEBRA AND GEOMETRY (MATH244)</u>	15
<u>METAPHYSICS (PHIL228)</u>	15
<u>METRIC SPACES AND CALCULUS (MATH242)</u>	15
<u>NUMBERS, GROUPS AND CODES (MATH142)</u>	15
<u>NUMERICAL METHODS FOR APPLIED MATHEMATICS (MATH226)</u>	15
<u>OPERATIONAL RESEARCH (MATH269)</u>	15
<u>PHILOSOPHY OF RELIGION (PHIL215)</u>	15
<u>PROFESSIONAL AND CAREER DEVELOPMENT (SOTA260)</u>	15
<u>STATISTICS AND PROBABILITY I (MATH253)</u>	15
<u>USES, MISUSES AND ABUSES OF LANGUAGE (PHIL276)</u>	15
<u>VECTOR CALCULUS WITH APPLICATIONS IN FLUID MECHANICS (MATH225)</u>	15

Programme details and modules listed are illustrative only and subject to change.

Final year

In each semester, you will take 30 credits of Mathematics and 30 credits of Philosophy. Modules weighted at 30 credits are whole-year modules and count as 15 credits per semester. **SOTA300** counts as a Philosophy module.

- In each Semester, students must take 30 credits of Mathematics and 30 credits of Philosophy. Whole Year modules weighted at 30 credits count as 15 credits per semester. SOTA300 counts as a Philosophy module.

- Students must take at least one of PHIL306, SOTA300, PHIL311, PHIL365, but may not take both PHIL306 & PHIL311. Students must consult with their academic advisor before taking both PHIL306 & SOTA300.
- Students who have taken SOTA600 (Year in Industry) are not allowed to take SOTA300.
- PHIL306 normally requires a minimum average of 60% in Year 2.

Modules

Optional modules	Credits
<u>APPLIED STOCHASTIC MODELS (MATH360)</u>	15
<u>CARTESIAN TENSORS AND MATHEMATICAL MODELS OF SOLIDS AND VISCOUS FLUIDS (MATH324)</u>	15
<u>CLASSICAL CHINESE PHILOSOPHY (PHIL367)</u>	15
<u>DIGITAL INQUIRY PROJECT (PHIL311)</u>	15
<u>EXISTENTIALISM (PHIL332)</u>	15
<u>FRONTIERS OF ETHICS (PHIL302)</u>	15
<u>FURTHER METHODS OF APPLIED MATHEMATICS (MATH323)</u>	15
<u>HELLENISTIC AND NEOPLATONIC PHILOSOPHY (PHIL368)</u>	15
<u>LINEAR STATISTICAL MODELS (MATH363)</u>	15
<u>MATHEMATICAL RISK THEORY (MATH366)</u>	15
<u>MEDICAL STATISTICS (MATH364)</u>	15
<u>MIND, BRAIN AND CONSCIOUSNESS (PHIL309)</u>	15

Optional modules	Credits
<u>NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS (MATH336)</u>	15
<u>PHILOSOPHICAL APPROACHES TO CONFLICT (PHIL365)</u>	15
<u>PHILOSOPHY AND LITERATURE (PHIL327)</u>	15
<u>PHILOSOPHY DISSERTATION (PHIL306)</u>	30
<u>PHILOSOPHY OF PLAY AND THE VIRTUAL (PHIL343)</u>	15
<u>PHILOSOPHY OF THE FUTURE (PHIL312)</u>	15
<u>QUANTUM MECHANICS (MATH325)</u>	15
<u>RELATIVITY (MATH326)</u>	15
<u>SCHOOL OF THE ARTS WORK PLACEMENTS MODULE (SOTA300)</u>	30
<u>MORE IS DIFFERENT: STATISTICAL MECHANICS, THERMODYNAMICS, AND ALL THAT (MATH327)</u>	15
<u>MATHEMATICAL BIOLOGY (MATH335)</u>	15
<u>MATHEMATICS OF NETWORKS AND EPIDEMICS (MATH338)</u>	15
<u>INDIAN PHILOSOPHY (PHIL326)</u>	15

Programme details and modules listed are illustrative only and subject to change.

Teaching and assessment

How you'll learn

In studying Philosophy you will learn how to defend your views with reasoned arguments, and to assess the arguments of others. Argumentative skills are learned through attending lectures and reading philosophical texts, developed by group seminar discussions, and formally assessed through essays and exams. You will complete modules to the value of 120 credits per year, from a wide range of options available. Most modules employ a blend of lectures, seminars and online support materials. You will learn by reading and studying outside class time, by attending and participating in classes, by doing coursework and, for dissertations, via one-to-one meetings with a supervisor. There is also scope, both formally in the placement module and informally, for you to develop practical skills by volunteering.

In Mathematics, your learning activities will consist of lectures, tutorials, practical classes, problem classes, private study and supervised project work. In year one, lectures are supplemented by a thorough system of group tutorials and computing work is carried out in supervised practical classes. Key study skills, presentation skills and group work start in first-year tutorials and are developed later in the programme. The emphasis in most modules is on the development of problem solving skills, which are regarded very highly by employers. Project supervision is on a one-to-one basis, apart from group projects in year two.

How you're assessed

Philosophy employs a mixture of modes of assessment: exams and coursework in many different varieties including essays, oral presentations, dissertations, exercises, and supported independent work (eg in the placement module).

In Mathematics, most modules are assessed by a two and a half hour examination in January or May, but many have an element of coursework assessment. This might be through homework, class tests, mini-project work or key skills exercises.

Liverpool Hallmarks

We have a distinctive approach to education, the Liverpool Curriculum Framework, which focuses on research-connected teaching, active learning, and authentic assessment to ensure our students graduate as digitally fluent and confident global citizens.

The Liverpool Curriculum framework sets out our distinctive approach to education. Our teaching staff support our students to develop academic knowledge, skills, and understanding alongside our **graduate attributes**:

- Digital fluency

- Confidence
- Global citizenship

Our curriculum is characterised by the three **Liverpool Hallmarks**:

- Research-connected teaching
- Active learning
- Authentic assessment

All this is underpinned by our core value of **inclusivity** and commitment to providing a curriculum that is accessible to all students.

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Careers and employability

A mathematically-based degree opens up a wide range of career opportunities, including some of the most lucrative professions.

Recent employers of our graduates are:

- Barclays Bank plc
- Deloitte
- Forrest Recruitment
- Marks and Spencer
- Mercer Human Resource Consulting Ltd.
- Venture Marketing Group.
- BAE Systems
- BT
- Guardian Media Group
- Royal Bank of Scotland
- Siemens
- Unilever.

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Fees and funding

Your tuition fees, funding your studies, and other costs to consider.

Tuition fees

UK fees (applies to Channel Islands, Isle of Man and Republic of Ireland)

Full-time place, per year - £9,535

Year abroad fee - £1,430 (applies to year in China)

International fees

Full-time place, per year - £26,600

Year abroad fee - £13,300 (applies to year in China)

The tuition fees shown are correct for 2025/26 entry. Please note that the year abroad fee also applies to the year in China.

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support. [Learn more about paying for your studies.](#)

Additional costs

We understand that budgeting for your time at university is important, and we want to make sure you understand any course-related costs that are not covered by your tuition fee. This could include buying a laptop, books, or stationery.

Find out more about the [additional study costs](#) that may apply to this course.

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Entry requirements

The qualifications and exam results you'll need to apply for this course.

A levels

ABB including A level Mathematics at grade A.

Applicants with the Extended Project Qualification (EPQ) are eligible for a reduction in grade requirements. For this course, the offer is **ABC** with **A** in the EPQ.

You may automatically qualify for reduced entry requirements through our contextual offers scheme. Based on your personal circumstances, you may automatically qualify for up to a two-grade reduction in the entry requirements needed for this course. When you apply, we consider a range of factors – such as where you live – to assess if you're eligible for a grade reduction. You don't have to make an application for a grade reduction – we'll do all the work.

Find out more about [how we make reduced grade offers](#).

If you don't meet the entry requirements, you may be able to complete a foundation year which would allow you to progress to this course.

Available foundation years:

- [Mathematical Sciences BSc \(Hons\) \(Foundation, 4 year route with Carmel College\) BSc \(Hons\)](#)

T levels

T levels are not currently accepted.

GCSE

4/C in English and 4/C in Mathematics

Subject requirements

Applicants must have studied Mathematics at Level 3 within 2 years of the start date of their course.

BTEC Level 3 National Extended Diploma

Applications encouraged when combined with A Level Mathematics at grade A. BTEC applications are encouraged. We evaluate each BTEC application on

its merits.

International Baccalaureate

33 including 6 in HL Mathematics with no score less than 4

Irish Leaving Certificate

H1, H2, H2, H3, H3 including H1 in Mathematics

Scottish Higher/Advanced Higher

Scottish Highers at AABBB plus Scottish Advanced Highers grade A in Maths or Scottish Advanced Highers at ABB including Maths at grade A, combinations are also welcome.

Welsh Baccalaureate Advanced

Accepted at grade B including A Level Mathematics at grade A and another A Level at grade B

Access

Access to HE Diploma in a relevant subject including Distinctions in units in Mathematics

International qualifications

Select your country or region to view specific entry requirements.

If you hold a bachelor's degree or equivalent, but don't meet our entry requirements, you could be eligible for a Pre-Master's course. This is offered on campus at the University of Liverpool International College, in partnership with Kaplan International Pathways. It's a specialist preparation course for postgraduate study, and when you pass the Pre-Master's at the required level with good attendance, you're guaranteed entry to a University of Liverpool master's degree.

English language requirements

You'll need to demonstrate competence in the use of English language, unless you're from a majority English speaking country.

We accept a variety of international language tests and country-specific qualifications.

International applicants who do not meet the minimum required standard of English language can complete one of our Pre-Sessional English courses to achieve the required level.

IELTS

6.5 overall, with no component below 5.5

TOEFL iBT

88 overall, with minimum scores of listening 17, writing 17, reading 17 and speaking 19. TOEFL Home Edition not accepted.

TOEFL Paper

Grade 6 at Standard Level or grade 5 at Higher Level

Duolingo English Test

115 overall, with speaking, reading and writing not less than 105, and listening not below 100

Pearson PTE Academic

61 overall, with no component below 59

LanguageCert Academic

65 overall, with no skill below 60

Cambridge IGCSE First Language English 0500

Grade C overall, with a minimum of grade 2 in speaking and listening. Speaking and listening must be separately endorsed on the certificate.

Cambridge IGCSE First Language English 0990

Grade 4 overall, with Merit in speaking and listening

Cambridge IGCSE Second Language English 0510/0511

0510: Grade B overall, with a minimum of grade 2 in speaking. Speaking must be separately endorsed on the certificate. 0511: Grade B overall.

Cambridge IGCSE Second Language English 0993/0991

0993: Grade 6 overall, with a minimum of grade 2 in speaking. Speaking must be separately endorsed on the certificate. 0991: Grade 6 overall.

Cambridge ESOL Level 2/3 Advanced

176 overall, with no paper below 162

LanguageCert

Grade 4 at Standard Level or grade 4 at Higher Level

Pre-sessional English

Do you need to complete a Pre-sessional English course to meet the English language requirements for this course?

The length of Pre-sessional English course you'll need to take depends on your current level of English language ability.

Pre-sessional English in detail

If you don't meet our English language requirements, we can use your most recent IELTS score, or [the equivalent score in selected other English language tests](#), to determine the length of Pre-sessional English course you require.

Use the table below to check the course length you're likely to require for your current English language ability and see whether the course is available on campus or online.

Your most recent IELTS score	Pre-sessional English course length	On campus or online
6.0 overall, with no component below 5.5	6 weeks	On campus
5.5 overall, with no component below 5.5	10 weeks	On campus and online options available
5.5 overall, with no more than one component below 5.5, and no component below 5.0	12 weeks	On campus and online options available
5.5 overall, with no component below 4.5	20 weeks	On campus
5.0 overall, with no component below 4.5	30 weeks	On campus
4.5 overall, with no more than one component below 4.5, and no component below 4.0	40 weeks	On campus

If you've completed an alternative English language test to IELTS, we may be able to use this to assess your English language ability and determine the Pre-sessional English course length you require.

Please see our guide to [Pre-sessional English entry requirements](#) for IELTS 6.5 overall, with no component below 5.5, for further details.

Alternative entry requirements

- If your qualification isn't listed here, or you're taking a combination of qualifications, [contact us](#) for advice
- [Applications from mature students](#) are welcome.

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