UNIVERSITY OF LIVERPOOL

BA (Hons)

Mathematics and Philosophy

UCAS code GV15

Entry requirements	Study mode	Duration	
A level: ABB	Full-time	3 years	Apply by: **30 June 2026** Starts on: **28 September 2026**

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 philosophical 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, communication 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 in semester two.

Modules

Compulsory modules	Credits
MIND, KNOWLEDGE AND REALITY (PHIL103)	15
PHILOSOPHY TOOLKIT (PHIL105)	15
CALCULUS I (MATH101)	15
INTRODUCTION TO LINEAR ALGEBRA (MATH103)	15
CALCULUS II (MATH102)	15
INTRODUCTION TO LOGIC (PHIL127)	15
PHILOSOPHICAL INSIGHTS (PHIL106)	15

Optional modules	Credits
NEWTONIAN MECHANICS (MATH122)	15

Optional modules	Credits
NUMBERS, GROUPS AND CODES (MATH142)	15
INTRODUCTION TO STATISTICS USING R (MATH163)	15

Programme details and modules listed are illustrative only and subject to change. As part of our commitment to continuous improvement, we are currently reviewing all of our programmes. This may include refining study pathways, strengthening links with employers, integrating generative AI, developing students' research skills, and enhancing alignment with our research strengths. The course content currently shown on this page reflects the programme as it is running in September 2026. This page will be updated for students beginning in September 2027 by 1 September 2026 at the latest.

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.
- You may take up to one of **PHIL271** and **PHIL272**.

Modules

Compulsory modules	Credits
DIFFERENTIAL EQUATIONS (MATH221)	15
LOGIC (PHIL207)	15

Optional modules	Credits
THE POLITICS OF KNOWLEDGE (PHIL212)	15
ANCIENT GREEK PHILOSOPHY: THE EXAMINED LIFE (PHIL237)	15
PHILOSOPHICAL PROBLEM-SOLVING (PHIL241)	15
BUSINESS ETHICS (PHIL271)	15
THE MEANING OF LIFE AND DEATH: EXPLORING THE ULTIMATE QUESTION (PHIL273)	15
PROFESSIONAL AND CAREER DEVELOPMENT (SOTA260)	15
VECTOR CALCULUS WITH APPLICATIONS IN FLUID MECHANICS (MATH225)	15
COMPLEX FUNCTIONS (MATH243)	15
LINEAR ALGEBRA AND GEOMETRY (MATH244)	15
STATISTICS AND PROBABILITY I (MATH253)	15
PHILOSOPHY OF RELIGION (PHIL215)	15
LIBERTY, JUSTICE AND THE GOOD SOCIETY (PHIL219)	15
METAPHYSICS (PHIL228)	15
MORAL PHILOSOPHY: THEORY AND PRACTICE (PHIL239)	15
BUSINESS ETHICS (PHIL272)	15
USES, MISUSES AND ABUSES OF LANGUAGE (PHIL276)	15

Optional modules	Credits
NUMBERS, GROUPS AND CODES (MATH142)	15
NUMERICAL METHODS (MATH226)	15
CLASSICAL MECHANICS (MATH228)	15
METRIC SPACES AND CALCULUS (MATH242)	15
COMMUTATIVE ALGEBRA (MATH247)	15
STATISTICS AND PROBABILITY II (MATH254)	15
FINANCIAL MATHEMATICS (MATH260)	15
OPERATIONAL RESEARCH: LINEAR AND CONVEX METHODS (MATH269)	15

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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.

- You must take at least one of **PHIL306**, **SOTA300**, **PHIL311**, **PHIL365**, but may not take both **PHIL306** and **PHIL311**.

- You must consult with you academic advisor before taking both **PHIL306** and **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
FRONTIERS OF ETHICS (PHIL302)	15
MIND, BRAIN AND CONSCIOUSNESS (PHIL309)	15
AESTHETICS (PHIL316)	15
EXISTENTIALISM (PHIL332)	15
LIFE, LANGUAGE AND ACTION (PHIL340)	15
PHILOSOPHY OF PLAY AND THE VIRTUAL (PHIL343)	15
CLASSICAL CHINESE PHILOSOPHY (PHIL367)	15
FURTHER METHODS OF APPLIED MATHEMATICS (MATH323)	15
CARTESIAN TENSORS AND MATHEMATICAL MODELS OF SOLIDS AND VISCOUS FLUIDS (MATH324)	15
QUANTUM MECHANICS (MATH325)	15
RELATIVITY (MATH326)	15
MATHEMATICAL BIOLOGY (MATH335)	15
NUMBER THEORY (MATH342)	15

Optional modules	Credits
GROUP THEORY (MATH343)	15
DIFFERENTIAL GEOMETRY (MATH349)	15
APPLIED STOCHASTIC MODELS (MATH360)	15
APPLIED PROBABILITY (MATH362)	15
LINEAR STATISTICAL MODELS (MATH363)	15
DIGITAL INQUIRY PROJECT (PHIL311)	15
PHILOSOPHY OF THE FUTURE (PHIL312)	15
INDIAN PHILOSOPHY (PHIL326)	15
PHILOSOPHY AND LITERATURE (PHIL327)	15
PHILOSOPHICAL APPROACHES TO CONFLICT (PHIL365)	15
HEALTH CARE, ECONOMICS AND JUSTICE (PHIL366)	15
HELLENISTIC AND NEOPLATONIC PHILOSOPHY (PHIL368)	15
PHILOSOPHY AND PUBLIC POLICY (PHIL375)	15
MORE IS DIFFERENT: STATISTICAL MECHANICS, THERMODYNAMICS, AND ALL THAT (MATH327)	15
GAME THEORY (MATH331)	15
NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS	15

Optional modules	Credits
(MATH336)	
MATHEMATICS OF NETWORKS AND EPIDEMICS (MATH338)	15
COMBINATORICS (MATH344)	15
THE MAGIC OF COMPLEX NUMBERS: COMPLEX DYNAMICS, CHAOS AND THE MANDELBROT SET (MATH345)	15
TOPOLOGY (MATH346)	15
THEORY OF STATISTICAL INFERENCE (MATH361)	15
MEDICAL STATISTICS (MATH364)	15
MEASURE THEORY AND PROBABILITY (MATH365)	15
MATHEMATICAL RISK THEORY (MATH366)	15
NETWORKS IN THEORY AND PRACTICE (MATH367)	15
PHILOSOPHY DISSERTATION (PHIL306)	30
SCHOOL OF THE ARTS WORK PLACEMENTS MODULE (SOTA300)	30

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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 an examination lasting two and a half hours in January or May, but many have an element of coursework assessment. This might be through homework, class tests, mini-project work, or exercises in developing key skills.

Liverpool Learning Framework

At Liverpool, we take a distinctive approach to education through the Liverpool Learning Framework. This means teaching that is engaging, inclusive and designed to help you succeed during your studies and beyond.

You'll develop specialist subject knowledge alongside the skills employers value most, including:

- Digital fluency

- Confidence

- Global citizenship

Our curriculum is characterised by the three Liverpool Hallmarks:

- Research-connected teaching - learning informed by the latest ideas and discoveries

- Active learning - taking part, applying knowledge and learning by doing

- Authentic assessment - assessments designed around real-world tasks and challenges

We also embed key priorities across our curriculum, including AI literacy, employability, and sustainability, helping you prepare for the future and make a positive impact in the world.

We're committed to creating a supportive and inclusive learning environment where every student can thrive.

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 - £9,790
Year in industry fee - £1,955
Year abroad fee - £1,465 (applies to year in China)

International fees

Full-time place, per year - £29,500
Year in industry fee - £1,955
Year abroad fee - £13,300 (applies to year in China)

The fees shown are for the academic year 2026/27. Please be advised that tuition fees may increase each year for both UK and international students. For UK students, this will be subject to the government's regulated fee limits.

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.

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** from A levels, with **A** in the EPQ including A in Maths and A in 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

32 points overall with no score less than 4 and including 6 in Higher Level Mathematics or pass the IB Diploma plus 6,5,5 in 3 HL subjects with 6 in Higher Level Mathematics.

Irish Leaving Certificate

H1, H2, 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

B in the Welsh Baccalaureate, plus AB at A level to include Mathematics at grade A.

Access

Pass relevant Access to HE Diploma with 45 Level 3 credits with 33 at Distinction including Distinctions in units in Mathematics and 12 at Merit.

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.

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.

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

If you took a TOEFL test on or before 20 January 2026, you'll need 88 overall, with minimum scores of listening 17, writing 17, reading 17 and speaking 19. If you took a TOEFL test from 21 January 2026 onwards, when a new scoring system was introduced, you'll need 4.5 overall, with 4 or above in all components. TOEFL Home Edition not accepted.

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

International Baccalaureate English A: Literature or Language & Literature

Grade 4 at Standard Level or grade 4 at Higher Level

International Baccalaureate English B

Grade 6 at Standard Level or grade 5 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 or online
5.5 overall, with no more than one component at 5.0	10 weeks	On campus or online
5.5 overall, with no component below 5.0	12 weeks	Online
5.0 overall, with no component below 5.0	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 at 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.

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