UNIVERSITY OF LIVERPOOL

BSc (Hons)

Mathematics and Statistics

UCAS code GG13

Entry requirements	Study mode	Duration
A level: ABB	Full-time	3 years

Apply by: **29 January 2025**
Starts on: **22 September 2025**

About this course

Statisticians are in great demand and if the subject appeals to you, this is the programme for you.

Introduction

Mathematics is a fascinating, beautiful and diverse subject to study. It underpins a wide range of disciplines; from physical sciences to social science, from biology to business and finance. At Liverpool, our programmes are designed with the needs of employers in mind, to give you a solid foundation from which you may take your career in any number of directions.

A Mathematics degree at the University of Liverpool is an excellent investment in your future. We have a large department with highly qualified staff, a first-class reputation in teaching and research, and a great city in which to live and work. You will see a broad range of degree programmes at Liverpool – Mathematics can be combined with many other subjects to widen your options even further.

This course also has the option to take a year abroad in year three. The year abroad is an incredible new opportunity to spend one academic year at one our partner universities expanding your academic and cultural horizons. You'll spend this time abroad in between your second and third years of study and your degree will extend by one year.

During the year abroad you'll take a variety of modules. Some modules will be related to the culture, history and society of the country you're living and others will be discipline-related modules. This mixture means you have a fantastic opportunity to learn in-depth about your host country as well as learn new and exciting knowledge that will complement your degree studies back in Liverpool.

What you'll learn

- Core fundamentals of mathematics
- Problem solving
- Strong communication skills
- How to communicate and present clearly

Accreditation

Both accreditations can be achieved on a conditional basis. Accreditations depend on your choice and your performance on optional modules.

Accreditation in detail

Institute of Mathematics and its Applications (IMA)

The IMA is the professional learned institute for mathematicians, supporting the advancement of mathematical knowledge and its applications to promote and enhance mathematical practice for the benefit of society.

Royal Statistical Society

The RSS is a professional body for all statisticians and data analysts - www.rss.org.uk.

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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

All modules taken in year one are compulsory.

Modules

Compulsory modules	Credits
CALCULUS I (MATH101)	15
CALCULUS II (MATH102)	15
INTRODUCTION TO LINEAR ALGEBRA (MATH103)	15
INTRODUCTION TO STATISTICS USING R (MATH163)	15
MATHEMATICAL IT SKILLS (MATH111)	15
INTRODUCTION TO STUDY AND RESEARCH IN MATHEMATICS (MATH107)	15
NEWTONIAN MECHANICS (MATH122)	15
NUMBERS, GROUPS AND CODES (MATH142)	15

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

Year two

Modules

Compulsory modules	Credits
VECTOR CALCULUS WITH APPLICATIONS IN FLUID MECHANICS (MATH225)	15
COMPLEX FUNCTIONS (MATH243)	15
LINEAR ALGEBRA AND GEOMETRY (MATH244)	15
DIFFERENTIAL EQUATIONS (MATH221)	15
STATISTICS AND PROBABILITY II (MATH254)	15
STATISTICS AND PROBABILITY I (MATH253)	15

Optional modules	Credits
CLASSICAL MECHANICS (MATH228)	15
METRIC SPACES AND CALCULUS (MATH242)	15
COMMUTATIVE ALGEBRA (MATH247)	15
FINANCIAL MATHEMATICS (MATH260)	15
OPERATIONAL RESEARCH (MATH269)	15
STEM EDUCATION AND COMMUNICATION (MATH291)	15
NUMERICAL METHODS FOR APPLIED MATHEMATICS (MATH226)	15
BECOMING ENTREPRENEURIAL (ULMS254)	15

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

Year three

You will take at least one of the optional modules MATH361, MATH364, MATH365, MATH366, MATH368.

Modules

Compulsory modules	Credits
APPLIED PROBABILITY (MATH362)	15
LINEAR STATISTICAL MODELS (MATH363)	15
APPLIED STOCHASTIC MODELS (MATH360)	15

Optional modules	Credits
MEASURE THEORY AND PROBABILITY (MATH365)	15
THEORY OF STATISTICAL INFERENCE (MATH361)	15
MEDICAL STATISTICS (MATH364)	15
MATHEMATICAL RISK THEORY (MATH366)	15
STOCHASTIC THEORY AND METHODS IN DATA SCIENCE (MATH368)	15
FURTHER METHODS OF APPLIED MATHEMATICS (MATH323)	15
CARTESIAN TENSORS AND MATHEMATICAL MODELS OF SOLIDS AND VISCOUS FLUIDS (MATH324)	15
QUANTUM MECHANICS (MATH325)	15

Optional modules	Credits
RELATIVITY (MATH326)	15
GROUP THEORY (MATH343)	15
COMBINATORICS (MATH344)	15
NETWORKS IN THEORY AND PRACTICE (MATH367)	15
PROFESSIONAL PROJECTS AND EMPLOYABILITY IN MATHEMATICS (MATH390)	15
MORE IS DIFFERENT: STATISTICAL MECHANICS, THERMODYNAMICS, AND ALL THAT (MATH327)	15
GAME THEORY (MATH331)	15
NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS (MATH336)	15
NUMBER THEORY (MATH342)	15
THE MAGIC OF COMPLEX NUMBERS: COMPLEX DYNAMICS, CHAOS AND THE MANDELBROT SET (MATH345)	15
TOPOLOGY (MATH346)	15
DIFFERENTIAL GEOMETRY (MATH349)	15
MATHEMATICAL BIOLOGY (MATH335)	15
MATHEMATICS OF NETWORKS AND EPIDEMICS (MATH338)	15

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

Teaching and assessment

How you'll learn

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

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

Your tuition fee covers almost everything but you may have additional study costs to consider, such as books.

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 Mathematics A level 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.

For applicants from England: For science A levels that include the separately graded practical endorsement, a "Pass" is required.

BTEC Level 3 National Extended Diploma

D*DD in relevant diploma, when combined with A Level Mathematics grade A

International Baccalaureate

33 including 6 in Higher Mathematics.

Irish Leaving Certificate

H1, H2, H2, H2, H3, H3 including Mathematics at H1.

Scottish Higher/Advanced Higher

Acceptable at grade B or above alongside AB at A level including grade A in Mathematics.

Welsh Baccalaureate Advanced

Accepted, including A level Mathematics at grade A and another A level at grade B.

Access

Access - 45 Level 3 credits in graded units in a relevant Diploma, including 39 at Distinction and a further 6 with at least Merit. 15 Distinctions are required 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

6.0 overall, with no component below 5.5

TOEFL iBT

78 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

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

Cambridge IGCSE Second Language English 0993/0991

0993: Grade 5 overall, with a minimum of grade 2 in speaking. Speaking must be separately endorsed on the certificate. 0991: Grade 5 overall.

Cambridge ESOL Level 2/3 Advanced

-169 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
5.5 overall, with no component below 5.5	6 weeks	On campus
5.5 overall, with no component below 5.0	10 weeks	On campus and online options available
5.0 overall, with no component below 5.0	12 weeks	On campus and online options available
5.0 overall, with no component below 4.5	20 weeks	On campus
4.5 overall, with no component below 4.5	30 weeks	On campus
4.0 overall, with 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 6.0 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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Generated: 28 Mar 2025, 08:32