UNIVERSITY OF LIVERPOOL

BSc (Hons)

Actuarial Mathematics with a Year Abroad

UCAS code NG30

Entry requirements	**Study mode**	**Duration**
A level: AAB	Full-time	4 years

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

About this course

Studying Actuarial Mathematics at Liverpool will allow you to take your career in any number of directions. Choose this programme and you will become an expert, using mathematical models to solve financial problems.

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 enabling you to take your career in any number of directions.

Actuarial mathematics prepares students to be professionals who use mathematical models to analyse and solve financial problems under uncertainty. Actuaries are experts in the design, financing and operation of insurance plans, annuities, and pension or other employee benefit plans.

This programme is aimed at students who want to work in the world of insurance, financial or governmental services, where actuarial mathematics plays a key role. You

will graduate prepared for a career as an actuary, combining financial and actuarial mathematics with statistical techniques and business topics.

You will cover specialised work in advanced actuarial and financial mathematics. You will then study more advanced ideas in both life and non-life insurance mathematics as well as stochastic modelling, econometrics and finance.

We have accreditation from the Institute and Faculty of Actuaries, the professional body for actuaries in the UK.

What you'll learn

- Core aspects of Mathematics such as finance, algebra, calculus and statistics.
- Teamwork
- Problem solving
- How to present and communicate clearly
- How to analyse and solve financial problems.

Accreditation

Institute and Faculty of Actuaries

We have accreditation from the Institute and Faculty of Actuaries. Currently our students can receive exemptions for CS1, CS2, CM1, CM2, CB1 and CB2 of the professional actuarial exams conducted by the Institute and Faculty of Actuaries, the professional body for actuaries in the UK.

Accreditation in detail

Institute and Faculty of Actuaries

With close industry links, excellent teaching and quality content, this course is accredited by the professional Actuarial body The Institute and Faculty of Actuaries.

Course content

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

Year one

In year one you will study compulsory modules covering economic principles, algebra, calculus, statistics, mathematical IT skills, finance.

Modules

Compulsory modules	Credits
ECONOMIC PRINCIPLES FOR BUSINESS AND MARKETS (ECON127)	15
CALCULUS I (MATH101)	15
INTRODUCTION TO LINEAR ALGEBRA (MATH103)	15
MATHEMATICAL IT SKILLS (MATH111)	15
INTRODUCTION TO FINANCE (ACFI103)	15
CALCULUS II (MATH102)	15
INTRODUCTION TO STATISTICS USING R (MATH163)	15
THEORY OF INTEREST (MATH167)	15

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

Year two

In the second and subsequent years of study, there is a wide range of modules. Each year you will choose the equivalent of eight modules. We regularly review our teaching so the choice of modules may change.

In addition to the compulsory modules below, you will choose two optional modules.

Modules

Compulsory modules	Credits
FINANCIAL REPORTING AND FINANCE (NON-SPECIALIST) (ACFI290)	15
PRINCIPLES OF ECONOMICS 2 (ECON210)	15
STATISTICS AND PROBABILITY I (MATH253)	15
LIFE INSURANCE MATHEMATICS I (MATH273)	15
FINANCIAL MATHEMATICS (MATH262)	15
STATISTICS AND PROBABILITY II (MATH254)	15

Optional modules	Credits
DIFFERENTIAL EQUATIONS (MATH221)	15
METRIC SPACES AND CALCULUS (MATH242)	15
NUMERICAL METHODS (MATH256)	15
OPERATIONAL RESEARCH (MATH269)	15
BECOMING ENTREPRENEURIAL (ULMS254)	15

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

Year abroad (year three)

You are required to spend the year abroad on an approved placement at a European or overseas partner institution.

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

Year four

In addition to the compulsory modules, you can choose one module from the optional module list below.

Modules

Compulsory modules	Credits
APPLIED PROBABILITY (MATH362)	15
LIFE INSURANCE MATHEMATICS II (MATH373)	15
STOCHASTIC MODELLING IN INSURANCE AND FINANCE (MATH375)	15
MATHEMATICAL RISK THEORY (MATH366)	15
STATISTICAL METHODS IN INSURANCE AND FINANCE (MATH374)	15
ACTUARIAL MODELS (MATH376)	15
FINANCIAL AND ACTUARIAL MODELLING IN R (MATH377)	15

Optional modules	Credits
MATHS SUMMER INDUSTRIAL RESEARCH PROJECT (MATH391)	15

Optional modules	Credits
APPLIED STOCHASTIC MODELS (MATH360)	15
FURTHER METHODS OF APPLIED MATHEMATICS (MATH323)	15

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

Teaching and assessment

How you'll learn

You will be taught through a mixture of lectures, tutorials, practical classes, problem classes, private study and supervised project work. In year one, lectures are supplemented by 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 too. 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.

∧ Back to top

Careers and employability

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

Typical types of work our graduates have gone onto include:

- An actuarial trainee analyst
- A graduate management trainee risk analyst
- A trainee chartered accountant.

Recent employers of our graduates are:

- Barclays Bank plc
- Deloitte
- Forrest Recruitment
- Marks and Spencer
- Mercer Human Resource Consulting Ltd
- Venture Marketing Group.

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.

Entry requirements

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

A levels

AAB

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

T levels

T levels are not currently accepted.

GCSE

4/C in English and 4/C in Mathematics

Subject requirements

Mathematics A level grade A.

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

Applications considered when combined with A level Maths grade A

International Baccalaureate

35 including 6 in Higher Mathematics

Irish Leaving Certificate

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

Scottish Higher/Advanced Higher

Advanced Highers accepted at grades AAB including grade A in Mathematics.

Welsh Baccalaureate Advanced

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

Access

Considered

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.

Generated: 29 Mar 2025, 12:47