

BSc (Hons)

## Mathematics with Languages

**UCAS code** G19R

Entry requirements	Study mode	Duration	Apply by: <b>14 January 2026</b> Starts on: <b>28 September 2026</b>
A level: ABB	Full-time	3/4 years	

### About this course

Studying Mathematics at Liverpool is an excellent foundation for a wide range of careers. And combining Mathematics with another subject widens your options even further. Choose to do a Year Abroad and truly experience what it is like to live in another country, learning the language, gaining fluency and immersing yourself in the culture.

### 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.

By choosing this programme you will study Mathematics (75%) and a language (25%). If you choose to do a year abroad, you will study for two years at Liverpool, then you will be well prepared for the third year spent at a university abroad. There, you will absorb the culture and experience living abroad and gain further fluency in the relevant language. The fourth year is spent back in Liverpool studying Mathematics and communication/translation skills.

At Liverpool, French, Spanish, German, Italian and Chinese may be taken from A level or as a beginner's language where no previous qualifications in the language are necessary. You can also take up Catalan or Portuguese from beginner level only.

In the first year our vibrant language modules at advanced level will both refresh and extend your knowledge of the target language. If you are a beginner, our fast-moving programme will quickly take you to A level standard during the course of your first year.

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## **What you'll learn**

- Problem solving
- Strong communication skills
- Teamwork
- Fluency in a foreign language
- Presentation skills

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## **Accreditation**

This programme is accredited by the 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.

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### **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.

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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'll follow either the 4-year (with Year Abroad) Language minor G19R or 3-year (without Year Abroad) Language minor G19X for Beginners or Advanced (post A-level) Students.

## Modules

Compulsory modules	Credits
<u>CALCULUS I (MATH101)</u>	15
<u>INTRODUCTION TO LINEAR ALGEBRA (MATH103)</u>	15
<u>MATHEMATICAL IT SKILLS (MATH111)</u>	15
<u>CALCULUS II (MATH102)</u>	15
Optional modules	Credits
<u>NEWTONIAN MECHANICS (MATH122)</u>	15
<u>NUMBERS, GROUPS AND CODES (MATH142)</u>	15
<u>INTRODUCTION TO STATISTICS USING R (MATH163)</u>	15
<u>BEGINNERS FRENCH 1+2 (FREN112)</u>	15

Optional modules	Credits
<u>ELEMENTARY FRENCH 3+4, YEAR 1 (FREN134)</u>	15
<u>INTERMEDIATE FRENCH 5, YEAR 1 (FREN105)</u>	15
<u>INTERMEDIATE FRENCH 6, YEAR 1 (FREN106)</u>	15
<u>BEGINNERS SPANISH 1+2 (SPAN112)</u>	15
<u>ELEMENTARY SPANISH 3+4, YEAR 1 (SPAN134)</u>	15
<u>INTERMEDIATE SPANISH 5, YEAR 1 (SPAN105)</u>	15
<u>INTERMEDIATE SPANISH 6, YEAR 1 (SPAN106)</u>	15
<u>BEGINNERS GERMAN 1+2, YEAR 1 (GRMN112)</u>	15
<u>ELEMENTARY GERMAN 3+4, YEAR 1 (GRMN134)</u>	15
<u>INTERMEDIATE GERMAN 5, YEAR 1 (GRMN105)</u>	15
<u>INTERMEDIATE GERMAN 6, YEAR 1 (GRMN106)</u>	15
<u>BEGINNERS CHINESE 1+2 (CHIN112)</u>	15
<u>ELEMENTARY CHINESE 3+4, YEAR 1 (CHIN134)</u>	15
<u>INTERMEDIATE CHINESE 5+6, YEAR 2 (CHIN256)</u>	15
<u>POST-INTERMEDIATE CHINESE 7+8 (CHIN278)</u>	15
<u>BEGINNERS ITALIAN 1+2 (ITAL112)</u>	15
<u>ELEMENTARY ITALIAN 3+4 (ITAL134)</u>	15

Optional modules	Credits
<u>INTERMEDIATE ITALIAN 5 (ITAL105)</u>	15
<u>INTERMEDIATE ITALIAN 6 (ITAL106)</u>	15
<u>BEGINNERS PORTUGUESE 1+2, YEAR 1 (PORT112)</u>	15
<u>ELEMENTARY PORTUGUESE 3+4, YEAR 1 (PORT134)</u>	15
<u>BEGINNERS CATALAN 1+2 (CATL112)</u>	15
<u>ELEMENTARY CATALAN 3+4, YEAR 1 (CATL134)</u>	15

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

## Year two

You will choose three MATH modules and one language module each semester. You can take at most one of MATH122, MATH142 and MATH163 in Year 2 if not already taken in year 1.

## Modules

Optional modules	Credits
<u>VECTOR CALCULUS WITH APPLICATIONS IN FLUID MECHANICS (MATH225)</u>	15
<u>COMPLEX FUNCTIONS (MATH243)</u>	15
<u>LINEAR ALGEBRA AND GEOMETRY (MATH244)</u>	15
<u>STATISTICS AND PROBABILITY I (MATH253)</u>	15

Optional modules	Credits
<u>NEWTONIAN MECHANICS (MATH122)</u>	15
<u>NUMBERS, GROUPS AND CODES (MATH142)</u>	15
<u>INTRODUCTION TO STATISTICS USING R (MATH163)</u>	15
<u>DIFFERENTIAL EQUATIONS (MATH221)</u>	15
<u>NUMERICAL METHODS (MATH226)</u>	15
<u>CLASSICAL MECHANICS (MATH228)</u>	15
<u>METRIC SPACES AND CALCULUS (MATH242)</u>	15
<u>COMMUTATIVE ALGEBRA (MATH247)</u>	15
<u>STATISTICS AND PROBABILITY II (MATH254)</u>	15
<u>FINANCIAL MATHEMATICS (MATH260)</u>	15
<u>OPERATIONAL RESEARCH: LINEAR AND CONVEX METHODS (MATH269)</u>	15
<u>INTERMEDIATE FRENCH 5+6, YEAR 2 (FREN256)</u>	15
<u>ADVANCED FRENCH 7+8 (FREN278)</u>	15
<u>ADVANCED FRENCH 7, YEAR 2 (FREN207)</u>	15
<u>ADVANCED FRENCH 8 (FREN208)</u>	15
<u>ADVANCED SPANISH 5+6 (SPAN256)</u>	15
<u>ADVANCED SPANISH 7+8 (SPAN278)</u>	15

Optional modules	Credits
<u>ADVANCED SPANISH 7 (SPAN207)</u>	15
<u>ADVANCED SPANISH 8 (SPAN208)</u>	15
<u>INTERMEDIATE GERMAN 5+6, YEAR 2 (GRMN256)</u>	15
<u>ADVANCED GERMAN 7+8, YEAR 2 (GRMN278)</u>	15
<u>ADVANCED GERMAN 7 (GRMN207)</u>	15
<u>ADVANCED GERMAN 8 (GRMN208)</u>	15
<u>INTERMEDIATE CHINESE 5+6, YEAR 2 (CHIN256)</u>	15
<u>POST-INTERMEDIATE CHINESE 7+8 (CHIN278)</u>	15
<u>ADVANCED CHINESE 9, YEAR 3 (CHIN309)</u>	15
<u>POST-ADVANCED CHINESE 10 (CHIN310)</u>	15
<u>INTERMEDIATE ITALIAN 5+6 (ITAL256)</u>	15
<u>ADVANCED ITALIAN 7+8 (ITAL278)</u>	15
<u>ADVANCED ITALIAN 7 (ITAL207)</u>	15
<u>ADVANCED ITALIAN 8 (ITAL208)</u>	15
<u>INTERMEDIATE PORTUGUESE 5+6, YEAR 2 (PORT256)</u>	15
<u>ADVANCED PORTUGUESE 7+8 (PORT278)</u>	15
<u>INTERMEDIATE CATALAN 5+6, YEAR 2 (CATL256)</u>	15

Optional modules	Credits
<u>ADVANCED CATALAN 7+8 (CATL278)</u>	15

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

## Year three

An optional year abroad, you can [find more information here](#).

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

## Year four

This is year three if you choose not to take a year abroad.

You will choose three MATH modules and one language module each semester.

## Modules

Optional modules	Credits
<u>FURTHER METHODS OF APPLIED MATHEMATICS (MATH323)</u>	15
<u>CARTESIAN TENSORS AND MATHEMATICAL MODELS OF SOLIDS AND VISCOUS FLUIDS (MATH324)</u>	15
<u>QUANTUM MECHANICS (MATH325)</u>	15
<u>RELATIVITY (MATH326)</u>	15
<u>NUMBER THEORY (MATH342)</u>	15

Optional modules	Credits
<u>GROUP THEORY (MATH343)</u>	15
<u>DIFFERENTIAL GEOMETRY (MATH349)</u>	15
<u>APPLIED PROBABILITY (MATH362)</u>	15
<u>LINEAR STATISTICAL MODELS (MATH363)</u>	15
<u>MORE IS DIFFERENT: STATISTICAL MECHANICS, THERMODYNAMICS, AND ALL THAT (MATH327)</u>	15
<u>GAME THEORY (MATH331)</u>	15
<u>NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS (MATH336)</u>	15
<u>COMBINATORICS (MATH344)</u>	15
<u>THE MAGIC OF COMPLEX NUMBERS: COMPLEX DYNAMICS, CHAOS AND THE MANDELBROT SET (MATH345)</u>	15
<u>TOPOLOGY (MATH346)</u>	15
<u>APPLIED STOCHASTIC MODELS (MATH360)</u>	15
<u>THEORY OF STATISTICAL INFERENCE (MATH361)</u>	15
<u>MEDICAL STATISTICS (MATH364)</u>	15
<u>MEASURE THEORY AND PROBABILITY (MATH365)</u>	15
<u>MATHEMATICAL RISK THEORY (MATH366)</u>	15
<u>NETWORKS IN THEORY AND PRACTICE (MATH367)</u>	15

Optional modules	Credits
<u>PROFICIENT FRENCH 11 (FREN311)</u>	15
<u>PROFICIENT FRENCH 12 (FREN312)</u>	15
<u>PROFICIENT SPANISH 11 (SPAN311)</u>	15
<u>PROFICIENT SPANISH 12 (SPAN312)</u>	15
<u>PROFICIENT GERMAN 11 (GRMN311)</u>	15
<u>PROFICIENT GERMAN 12 (GRMN312)</u>	15
<u>ADVANCED CHINESE 9, YEAR 3 (CHIN309)</u>	15
<u>POST-ADVANCED CHINESE 10 (CHIN310)</u>	15
<u>PROFICIENT CHINESE 11 (CHIN311)</u>	15
<u>PROFICIENT CHINESE 12 (CHIN312)</u>	15
<u>PROFICIENT ITALIAN 11 (ITAL311)</u>	15
<u>PROFICIENT ITALIAN 12 (ITAL312)</u>	15
<u>PROFICIENT PORTUGUESE 11, YEAR 3 (PORT311)</u>	15
<u>PROFICIENT PORTUGUESE 12, YEAR 3 (PORT312)</u>	15
<u>PROFICIENT CATALAN 11 (CATL311)</u>	15
<u>PROFICIENT CATALAN 12 (CATL312)</u>	15
<u>MATHEMATICAL BIOLOGY (MATH335)</u>	15

Optional modules	Credits
<u>MATHEMATICS OF NETWORKS AND EPIDEMICS (MATH338)</u>	15
<u>PROFESSIONAL PROJECTS AND EMPLOYABILITY IN MATHEMATICS (MATH390)</u>	15

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

## Teaching and assessment

### How you'll learn

You'll be taught through a diverse blend of engaging teaching methods, including lectures, tutorials, practical classes, video content, interactive learning sessions, independent study, and supervised project work.

The Department of Mathematical Sciences offers a vibrant, stimulating, and supportive learning environment with highly motivated and exceptionally qualified staff, renowned for their world-leading research and teaching.

In year 1, lectures are supplemented by a thorough system of small-group tutorials; computing work is carried out in supervised practical classes. Key study skills, presentation skills and group work start in the first year and are developed later in the programme. The emphasis in most modules is on the development of problem-solving and critical thinking skills, which are regarded very highly by employers.

### How you're assessed

Each module has an assessment scheme tailored to fit its syllabus. This might include traditional written exams, class tests, assignments, projects, group work, or online exercises with automatic marking and immediate feedback.

### 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 degree in mathematics provides access to an almost limitless range of rewarding career paths. As a graduate with a mathematics degree from the University of Liverpool, you'll have an extremely valuable set of analytical and critical thinking skills that employers value, enabling you to pursue careers in almost any field.

Graduates with a mathematics-based degree are in high demand across a broad spectrum of industries, thanks to their expertise in quantitative analysis, problem-solving, and mathematical modelling. Some of the key career paths include:

- **Data Science and Analytics:** Mathematics graduates are well-equipped to work as data scientists, data analysts, or business analysts. Their skills in statistical modelling, machine learning, and data interpretation are highly sought after in sectors like finance, healthcare, and tech
- **Engineering and Technology:** Mathematics graduates can work in engineering roles, including systems engineering, computational modelling, and simulation. They may also contribute to software development, particularly in fields that require complex algorithms, like AI and cybersecurity
- **Operations Research and Logistics:** Companies in manufacturing, transportation, and supply chain management often hire mathematics graduates to optimize processes, improve efficiency, and reduce costs. Roles include operations research analyst, supply chain planner, and logistics coordinator
- **Healthcare and Biostatistics:** Mathematics is increasingly used in medical research, epidemiology, and healthcare analytics. Careers may include biostatistician, health data analyst, or mathematical modeller in disease forecasting.

The versatility of a mathematics-based degree allows graduates to enter nearly any sector that requires mathematical modelling, statistical analysis, and algorithmic problem-solving. The growing demand for data-driven decision making in today's world ensures that career prospects remain strong, with opportunities for advancement and specialization across fields.

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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 – £14,750 (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.

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## A levels

ABB

including A level Mathematics grade A.

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 \(Hons\)](#)

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## T levels

T levels are not currently accepted.

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## GCSE

4/C in English and 4/C in Mathematics

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## Subject requirements

A level in relevant language required for advanced level, no language required for beginners level.

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

For applicants from England: Where a science has been taken at A level (Chemistry, Biology or Physics), a pass in the Science practical of each subject will be required.

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## **BTEC Level 3 National Extended Diploma**

Applications considered. Relevant when combined with A level Mathematics grade A. A level in relevant language required for advanced level

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## **International Baccalaureate**

32 points overall with no score less than 4 including 6 in HL Mathematics and 5 in relevant HL language (for advanced level), or pass the IB Diploma plus 6,5,5 in three HL subjects (including 6 in HL Mathematics and 5 in relevant HL language for advanced level).

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## **Irish Leaving Certificate**

H1, H2, H2, H2, H3, H3 including Mathematics at H1 and relevant language at H2 for advanced level.

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## **Scottish Higher/Advanced Higher**

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

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## **Welsh Baccalaureate Advanced**

B in the Welsh Baccalaureate, plus AB at A level, including grade A in Mathematics and grade B in relevant language (for advanced level).

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## **Access**

Pass Access to HE Diploma in a relevant subject with 45 Level 3 credits with 33 at Distinction (including 15 credits in Mathematics) and 12 at Merit. (A level grade B in a relevant language required for advanced level.)

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## **International qualifications**

Select your country or region to view specific entry requirements.

Many countries have a different education system to that of the UK, meaning your qualifications may not meet our direct entry requirements. Although there is no direct Foundation Certificate route to this course, completing a Foundation Certificate, such as that offered by the University of Liverpool International College, can guarantee you a place on a number of similar courses which may interest you.

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## 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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## 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.

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### IELTS

6.0 overall, with no component below 5.5

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### 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.

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### Duolingo English Test

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

below 100

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### **Pearson PTE Academic**

59 overall, with no component below 59

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### **LanguageCert Academic**

65 overall, with no skill below 60

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### **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.

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### **Cambridge IGCSE First Language English 0990**

Grade 4 overall, with Merit in speaking and listening

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### **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.

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### **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.

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### **Cambridge ESOL Level 2/3 Advanced**

169 overall, with no paper below 162

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### **International Baccalaureate English A: Literature or Language & Literature**

Grade 4 at Standard Level or grade 4 at Higher Level

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### **International Baccalaureate English B**

Grade 6 at Standard Level or grade 5 at Higher Level

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# 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 or online
5.5 overall, with no component below 5.0	10 weeks	On campus or online
5.0 overall, with no component below 5.0	12 weeks	Online
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.

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