UNIVERSITY OF LIVERPOOL

BSc (Hons)

Mathematics and Music Technology

UCAS code G1W3

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

This programme combines Mathematics and Music Technology as a Joint Honours programme.

Introduction

The Music and Technology programme allows you to specialise in the vocational areas of recording and production, electronic music, sound design and composition for film and video gaming. In year one, core modules look at the foundations of creative music technology, sound, and production. In your second and final years, you will have a free choice of modules in both subjects, but this will include an independent project in Creative Music Technology.

Year in industry

Undergraduate students in the Department of Music have the opportunity to spend a year in industry, either in their third year, or by adding a 'follow-on year' at the end of their academic studies. These are paid placements within an organisation in industry, broadly defined, and you will receive support from the Department and the School of the Arts to source and apply for opportunities. Find out more about the difference between these options, including how to apply.

What you'll learn

- Advanced understanding of sound and music technology theory
- Practical and vocational skills in sound recording and production
- Academic research skills
- Critical and cultural awareness
- Written and oral communication and presentation
- Creativity

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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 compulsory modules – four in Music Technology, and three in Mathematics – and choose one optional module in Mathematics.

Modules

Compulsory modules	Credits
CALCULUS I (MATH101)	15
CALCULUS II (MATH102)	15
INTRODUCTION TO LINEAR ALGEBRA (MATH103)	15
INTRODUCTION TO DIGITAL AUDIO WORKSTATIONS (MUSI109)	15
INTRODUCTION TO SOUND AND TECHNOLOGY (MUSI171)	15
INTRODUCTION TO SOUND RECORDING AND PRODUCTION (MUSI108)	15
THE HISTORY OF ELECTRONIC MUSIC (MUSI172)	15

Optional modules	Credits
INTRODUCTION TO STATISTICS USING R (MATH163)	15
NEWTONIAN MECHANICS (MATH122)	15

Optional modules	Credits
NUMBERS, GROUPS AND CODES (MATH142)	15

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

Year two

In your second year, you will take entirely optional modules in both Music Technology and Mathematics.

- You must take at least four of the following: **MUSI205**, **MUSI208**, **MUSI209**, **MUSI213**, **MUSI214**, **MUSI243**.
- You must choose two from **MATH225, MATH243, MATH244, MATH253**.
- You must choose two from **MATH122, MATH142, MATH163, MATH221, MATH226, MATH228, MATH242, MATH247, MATH254, MATH260, MATH269**.

Modules

Optional modules	Credits
CLASSICAL MECHANICS (MATH228)	15
COMMUTATIVE ALGEBRA (MATH247)	15
COMPLEX FUNCTIONS (MATH243)	15
COMPOSITION FOR FILM AND TELEVISION (MUSI205)	15
DIFFERENTIAL EQUATIONS (MATH221)	15
FINANCIAL MATHEMATICS (MATH260)	15
INTRODUCTION TO STATISTICS USING R (MATH163)	15

Optional modules	Credits
LINEAR ALGEBRA AND GEOMETRY (MATH244)	15
LIVE SOUND (MUSI214)	15
MAX AND ABLETON LIVE (MUSI209)	15
METRIC SPACES AND CALCULUS (MATH242)	15
MUSIC AND SPORT (MUSI222)	15
NEWTONIAN MECHANICS (MATH122)	15
NUMBERS, GROUPS AND CODES (MATH142)	15
NUMERICAL METHODS FOR APPLIED MATHEMATICS (MATH226)	15
OPERATIONAL RESEARCH (MATH269)	15
PROFESSIONAL AND CAREER DEVELOPMENT (SOTA260)	15
SAMPLING AND REMIXING (MUSI213)	15
FOLEY AND SOUND DESIGN (MUSI208)	15
SOUND RECORDING AND PRODUCTION 2 (MUSI243)	15
STATISTICS AND PROBABILITY I (MATH253)	15
STATISTICS AND PROBABILITY II (MATH254)	15
VECTOR CALCULUS WITH APPLICATIONS IN FLUID MECHANICS (MATH225)	15

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

Final year

Your final year will include an independent project in Creative Music Technology, while your remaining modules will be taken from a selection.

- You must take either **MUSI305** or **MUSI308**.
- You must take two from MATH322, MATH323, MATH324, MATH325, MATH326, MATH343, MATH344, MATH362, MATH363, MATH365, MATH367, MATH399.
- You must take three from **MATH327, MATH331, MATH332, MATH336, MATH342, MATH345, MATH346, MATH349, MATH360, MATH361, MATH364, MATH366, MATH399**.

Modules

Compulsory modules	Credits
INDEPENDENT PROJECT: CREATIVE MUSIC TECHNOLOGY (MUSI396)	30

Optional modules	Credits
APPLIED PROBABILITY (MATH362)	15
APPLIED STOCHASTIC MODELS (MATH360)	15
CARTESIAN TENSORS AND MATHEMATICAL MODELS OF SOLIDS AND VISCOUS FLUIDS (MATH324)	15
CHAOS AND DYNAMICAL SYSTEMS (MATH322)	15
COMPOSITION FOR DIGITAL GAMES (MUSI305)	15
COMBINATORICS (MATH344)	15
DIFFERENTIAL GEOMETRY (MATH349)	15

Optional modules	Credits
FURTHER METHODS OF APPLIED MATHEMATICS (MATH323)	15
GAME THEORY (MATH331)	15
GROUP THEORY (MATH343)	15
LINEAR STATISTICAL MODELS (MATH363)	15
MATHEMATICAL RISK THEORY (MATH366)	15
MEASURE THEORY AND PROBABILITY (MATH365)	15
MEDICAL STATISTICS (MATH364)	15
COMPOSING ELECTRONIC MUSIC (MUSI308)	15
NETWORKS IN THEORY AND PRACTICE (MATH367)	15
NUMBER THEORY (MATH342)	15
NUMERICAL METHODS FOR ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS (MATH336)	15
POPULATION DYNAMICS (MATH332)	15
PROJECTS IN MATHEMATICS (MATH399)	15
QUANTUM MECHANICS (MATH325)	15
RELATIVITY (MATH326)	15
MORE IS DIFFERENT: STATISTICAL MECHANICS, THERMODYNAMICS, AND ALL THAT (MATH327)	15

Optional modules	Credits
THE FILM MUSIC OF JOHN WILLIAMS (MUSI370)	15
THEORY OF STATISTICAL INFERENCE (MATH361)	15
THE MAGIC OF COMPLEX NUMBERS: COMPLEX DYNAMICS, CHAOS AND THE MANDELBROT SET (MATH345)	15
TOPOLOGY (MATH346)	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

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 and A level Music or Music Technology at grade B (or ABRSM Grade 8 in Music Theory at Distinction).

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.

T levels

T levels are not currently accepted.

GCSE

4/C in English and 4/C in Mathematics

Subject requirements

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.

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 each of Higher Level Mathematics and Higher Level Music.

Irish Leaving Certificate

H1, H2, H2, H2, H3, H3 including Mathematics at H1 and Music at H2

Scottish Higher/Advanced Higher

Advanced Highers accepted at grades ABB including grade A in Mathematics and grade B in Music

Welsh Baccalaureate Advanced

Acceptable at grade B alongside AB at A level including grade A in Mathematics and grade B in Music or Music Technology.

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. A Level grade B in Music or Music Technology, or ABRSM Grade 8 in Music Theory at Distinction also required.

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.

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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