UNIVERSITY OF LIVERPOOL

MBiol (Hons)

Biochemistry

UCAS code C703

Entry requirements	Study mode	Duration	
A level: ABB	Full-time	4 years	Apply by: **13 January 2027** Starts on: **27 September 2027**

About this course

Biochemistry is the study of molecular structures and interactions in living organisms. Biochemists seek to understand living organisms in terms of chemical reactions.

Introduction

The Master of Biochemistry (MBiol) is a four-year programme, in which students first follow the three-year BSc in Biochemistry and then continue into a fourth year, subject to performance.

In the first three years, you'll study a broad range of tailored modules including biochemical techniques, biomolecular structure, metabolism, cell biology and cell signalling, alongside the field of bioinformatics, multi-'omics and molecular systems biology, with the opportunity to specialise and carry out your own research project.

The fourth (Master's) year aims at developing enhanced research and personal skills for students seeking a high-level career in research (e. g. studying for a PhD or working in industry) or those seeking to enhance their qualification. Students will join a research team to undertake a significant research project. Students can also apply for a six-week summer research internship in the UK or overseas or apply to spend time working in industry or in other enterprises in the final year.

What you'll learn

- Analyse biochemical data and apply appropriate statistics
- Apply bioinformatics and computational biology tools to molecules of biochemical interest
- Apply biochemical knowledge in fundamental and clinical research settings
- Understand how biochemistry underpins diverse biology, from bacteria to plants to humans
- Become literate in finding, interpreting, evaluating and managing information
- Communicate ideas effectively to a variety of audiences
- Work independently and collaboratively
- Develop critical thinking and problem-solving skills
- Use lab equipment correctly and safely
- Plan, initiate, and carry out projects

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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

In this first year, you'll gain an understanding of core concepts of biology and biochemistry, as well as the fundamental principles of immunity, infection, and therapy. You will study how organisms develop and function and learn about biological challenges that affect the global environment. You will also develop bioinformatics and practical skills, and you will discover how to utilise quantitative skills.

Modules

Compulsory modules	Credits
BIOLOGY CORE CONCEPTS (BIOS101)	30
ORIGINS, SPECIALISATIONS, CHALLENGES AND THERAPEUTICS (BIOS102)	30
INTRODUCTORY PRACTICAL SKILLS IN BIOSCIENCES I (BIOS103)	15
FROM INDIVIDUALS TO ECOSYSTEM (BIOS104)	15
STUDY AND COMMUNICATION SKILLS TUTORIALS (BIOS105)	15
INTRODUCTORY PRACTICAL SKILLS IN BIOSCIENCES 2 (BIOS106)	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 your second year you'll expand your range of knowledge, building essential research skills in experimental design and analysis. You will also hone professional skills, preparing you for a career within or outside the broad field of biochemistry. You will study biochemical techniques, cell signalling, biochemical pathways, macromolecular structure and genetics. In addition, you will have optional modules enabling up to follow your interest in pharmacology, health and disease, or physiology. You will choose one optional module.

Modules

Compulsory modules	Credits
GENETICS & IMMUNOLOGY FOR BIOSCIENCES (BIOS201)	15
INTERMEDIARY PRACTICAL SKILLS IN BIOSCIENCES (BIOS203)	15
ADVANCED PRACTICAL SKILLS IN BIOMOLECULAR AND DRUG INTERACTIONS (BIOS204)	15
ACADEMIC AND PROFESSIONAL SKILLS TUTORIALS (BIOS205)	15
CELLULAR BASIS OF HEALTH AND DISEASE (BIOS209)	15
METABOLISM (BIOS212)	15
CHEMISTRY FOR BIOSCIENCES (BIOS215)	15

Optional modules	Credits
CELLULAR AND SYSTEMS PHYSIOLOGY (BIOS214)	15

Optional modules	Credits
DRUG DISCOVERY AND DEVELOPMENT (BIOS216)	15
MOLECULAR MICROBIOLOGY AND THERAPEUTICS (BIOS218)	15
FURTHER CHEMISTRY FOR LIFE SCIENCES (CHEM028)	15

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Year three

Year three will provide an unparalleled opportunity for you to learn at the cutting edge of biochemistry research and be taught by world-leading academics in subjects allied to multi-'omics, molecular systems biology, protein structure and function and cell biology in health and disease. You will also develop advanced scientific skills and you will have the opportunity to take a physical or virtual placement. Central to this year is the research project where you will plan and execute your own research, analyse and critically evaluate data and communicate your research findings in your chosen specialisation.

Modules

Compulsory modules	Credits
RESEARCH PROJECT (BIOS301)	30
INTRODUCTION TO THE WORLD OF WORK (BIOS302)	15

Compulsory modules	Credits
RESEARCH METHODS (BIOS303)	15
APPLIED BIOCHEMISTRY (BIOS306)	15
MOLECULAR SYSTEMS BIOLOGY (BIOS309)	15
STRUCTURAL BIOLOGY (BIOS311)	15
INFORMATION PROCESSING BY CELL SIGNALLING NETWORKS IN HEALTH AND DISEASE (BIOS331)	15

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Year four

The fourth year of study offers great flexibility – students may spend it entirely on campus at Liverpool, but more commonly they take up opportunities to broaden their experiences, for example a six-week research internship in the UK (in hospitals, industry or research institutes) or abroad (in our partner universities in Thailand or China). Others may elect to spend the entire fourth year on placement, in similar host institutions. Students will take core modules in research methods and statistics or informatics, together with a 60-credit research project. Students may replace the optional internship with other optional modules that cover advanced topics of global importance including bioinformatics and computational biology, cancer clinical trials, immunology, proteomics and metabolomics, and biotechnology related topics.

Optional module selection in Year 4 must include one of the following combinations:

- LIFE707 Biological Data Skills and LIFE607 Biological Data Skills (Off-Campus)

- LIFE721 Informatics for Life Sciences and LIFE621 Informatics for Life Sciences (Off-Campus).

Modules

Compulsory modules	Credits
GLOBAL PERSPECTIVES (BIOS776)	15
RESEARCH PROJECT (LIFE700)	60

Optional modules	Credits
BIOLOGICAL DATA SKILLS (LIFE707)	15
BIOLOGICAL DATA SKILLS (OFF-CAMPUS) (LIFE607)	15
INFORMATICS FOR LIFE SCIENCES (LIFE721)	15
INFORMATICS FOR LIFE SCIENCES (OFF-CAMPUS) (LIFE621)	15
RESEARCH INTERNSHIP (LIFE701)	30
CELLULAR BIOTECHNOLOGY AND BIOLOGICAL IMAGING (LIFE749)	15
EMERGING INFECTIONS AND PANDEMICS (LIFE751)	15
FRONTIERS IN CANCER RESEARCH AND TREATMENT (LIFE724)	15
CANCER CLINICAL TRIALS (LIFE726)	15
IMMUNOLOGY (LIFE728)	15

Optional modules	Credits
DIAGNOSTICS, THERAPEUTICS AND VACCINES (LIFE732)	15
COMPUTATIONAL BIOLOGY (LIFE752)	15
PROTEOMICS METABOLOMICS AND DATA ANALYSIS (LIFE754)	15
SYNTHETIC BIOLOGY AND BIOTECHNOLOGY (LIFE756)	15
UNDERSTANDING MODELS AND DATA (IVES724)	15
EXPERIMENTAL MEDICINE AND CLINICAL PHARMACOLOGY (LIFE764)	15
PHARMACEUTICAL TOXICOLOGY (LIFE765)	15
FRONTIERS IN DRUG DELIVERY AND ADVANCED THERAPEUTICS (LIFE766)	15

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Teaching and assessment

How you'll learn

You will experience a range of learning environments during your studies at Liverpool. These will include student-centred activities as well as lectures, tutorials, laboratory practicals, dissection classes, fieldwork, data handling sessions and computer workshops. Some of these activities will be performed individually, such as personal research projects, and others in small tutorial or project groups, in addition to formal lectures and workshops. You

will have research staff as well as your own academic adviser for individual tuition on our acclaimed tutorial programme.

How you're assessed

As well as factual knowledge and understanding, biologists need practical and organisational skills, and an ability to work both alone and with other people. We record the development of these abilities through continuous assessment during each semester and by final examination.

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

As a Biosciences graduate from the University of Liverpool, you will have an excellent set of career options ahead of you.

Typical types of roles/routes our graduates have gone on include:

- Postgraduate study: (MBiolSci, MSc, MRes, MPhil or PhD)
- Public sector – research institutes, government departments, the National Health Service, forensic science and the Environment Agency.
- Commercial sectors – pharmaceutical, food, biotechnology, water and agriculture industries.
- Journalists and information/liaison officers – by developments in molecular biology and biotechnology.
- Teaching profession by taking a postgraduate qualification (PGCE).
- Routes to postgraduate Medicine, Dentistry or Veterinary Science.

Recent employers and sectors:

- Pharmaceutical sector: Eli-Lilly, AstraZeneca, Glaxo SmithKline, NHS, Red X Pharma;
- Tourism/Conservation sector: Blue Planet Aquarium, Chester Zoo, RSPCA;
- Government/Legal sector: Crown Prosecution Service, The Environment Agency, Public Health England, Home Affairs, Ministry of Defence, Security and International Development;
- Media/Entertainment Sector: BBC;
- Corporate and Utilities sector: United Utilities, Vodafone, 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 - £10,050
Year in industry fee - £2,010
Year abroad fee - £1,508 (applies to year in China)

International fees

Full-time place, per year - £32,000
Year in industry fee - £1,955
Year abroad fee - £16,000 (applies to year in China)

The UK fees shown are for the academic year 2027/28. The international fees shown are for the academic year 2026/27 and will be subject for change for the academic year 2027/28. 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 includes the costs associated with placements or internships, and the optional field course in Uganda.

Students should expect to cover the following costs.

Costs associated with placements/internships
Students in Biosciences who have chosen international placements/internships will need to pay for their visa (if applicable), travel, accommodation, and meals.

There may also be costs associated with travel to interviews for placements/internships. These will vary, and some other extra costs may also be incurred. If students are spending a full year in industry, their employers may pay transport costs. School and University bursaries may be available to help with the cost of these opportunities.

Students might choose to pay for additional optional vaccinations in addition to the compulsory ones that the School pays for.

Tropical ecology field course
Students who elect to take the optional tropical ecology field course in Uganda are required to make a financial contribution that covers their own costs (travel, meals, visa, accommodation, and entry to national parks). In 2020-21, the student contribution was £1,500. A limited number of funded places are available.

Students might choose to pay for additional optional vaccinations in addition to the compulsory ones that the School pays for.

Find out more about additional study costs.

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Entry requirements

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

A levels

ABB
Biology and Chemistry at A level.

Applicants with the Extended Project Qualification (EPQ) are eligible for a reduction in grade requirements. For this course, the offer is **BBB** from A levels, 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

Health and Science (Science pathway) is accepted with an overall grade of Distinction to include B in the core.

Applicants should contact us by completing the enquiry form on our website to discuss specific requirements in the core components and the occupational specialism.

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 Applied Science with a selection of preferred units in Biology and Chemistry, to include Distinction in Units 1 or 5 (Principles and Applications of Science I and II).

For previous BTEC (QCF) qualification:

D*DD in Applied Science with a selection of preferred units in Biology and Chemistry, with at least 120 Level 3 credits at Distinction.

Please note alternative BTEC subjects are not acceptable for this programme.

International Baccalaureate

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

Irish Leaving Certificate

H1, H2, H2, H2, H3, H3 including grade H2 in both of Higher Level Biology and Higher Level Chemistry.

Scottish Higher/Advanced Higher

Not accepted without Advanced Highers at grades ABB

Welsh Baccalaureate Advanced

B in the Welsh Baccalaureate, plus AB at A level to include Biology at grade A and Chemistry at grade B.

Access

Pass relevant Access to HE Diploma with 45 Level 3 credits with 33 at Distinction and 12 at Merit. 15 Distinctions are required in each of Biology and Chemistry. GCSE Mathematics and English grade C/4 also required.

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

125 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

70 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 5 at Standard Level or grade 5 at Higher Level

International Baccalaureate English B

Grade 7 at Standard Level or grade 6 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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