UNIVERSITY OF LIVERPOOL

MChem

Chemistry

UCAS code F102

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

Apply by: **14 January 2026**
Starts on: **28 September 2026**

About this course

Do you want to pursue a high-level research career as a professional chemist? This course brings you to the frontiers of chemistry where you will join one of the research teams in the department.

Introduction

Study Chemistry at Liverpool and learn in a culture of research excellence. Chemistry is a great choice for those with a keen interest in materials chemistry, medicinal chemistry and theoretical and computation chemistry. You'll thrive in our award-winning undergraduate laboratories. All our chemistry programmes have a common core in the first two years, this provides a good measure of flexibility and choice for you during the first two years. These first two years progress rapidly, with a mix of theory and practical modules to give you a solid grounding in the subject.

By year three you will be a proficient chemist, and will be able to extend your knowledge in the three traditional branches of chemistry. You will also be offered a choice of optional chemistry and non-chemistry modules, or modules in science education for those interested in pursuing a career in teaching. Practical modules in year three will continue to develop your skills and knowledge learnt in the first two years. This may involve conducting mini-projects, relevant in the modern world, developing your skill set to make you industry-ready.

In your final year, you will take a range of advanced core modules in inorganic, physical and organic chemistry and can tailor your studies to choose high-level modules in areas that interest you and that are related to our research areas. Chemical research is particularly important in year four and involves you conducting a significant project as a member of one of the research groups in the Department.

Since students enter the Department with a wide range of experience in mathematics (which is essential for studying chemistry to a high level) we provide a flexible tiered maths for chemistry course allowing you to develop your skills at your own pace.

The Department of Chemistry is committed to continuous improvement of our curriculum. We are undergoing a curriculum review to further prepare our graduates for the next stage of their career by developing our degree programmes to incorporate knowledge and skills for the future workforce and ensure a positive learning experience for all students. Module and programme structures may change as we further develop an inclusive curriculum with enhanced sustainable, digital, and analytical chemistry elements. These aspects will sit alongside all the expected core chemistry components including organic, inorganic, and physical chemistry and professional skills.

What you'll learn

- Practical application of chemistry
- Material chemistry
- Energy and catalysis
- Functional interfaces
- Medicine and bio-nano chemistry
- Theoretical and computational chemistry
- Renewable and sustainable chemistry
- Numeracy and problem solving
- Working in a research environment

Accreditation

Our MChem programmes have bachelor accreditation from the Royal Society of Chemistry (RSC) ensuring your degree with us will set you on the pathway to a

successful career.

Accreditation in detail

Royal Society of Chemistry

The Royal Society of Chemistry is a learned society for chemists in the United Kingdom.

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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 the first year, you will take modules that cover the fundamentals of Inorganic, Organic and Physical Chemistry, plus necessary key skills. Four Chemistry modules combine theoretical and practical aspects and one Chemistry module develops Quantitative and General Key Skills. You will spend three to six hours per week in the laboratory and so will receive a comprehensive training in practical aspects of the subject.

You will have the choice of 30 credits of subsidiary modules from subjects which could include the chemistry-biology interface and modules from other departments such as Maths/Physics/Open languages. Please note these modules are subject to change each year.

Modules

Compulsory modules	Credits
INTRODUCTORY INORGANIC CHEMISTRY (CHEM111)	15
INTRODUCTORY ORGANIC CHEMISTRY (CHEM130)	30
INTRODUCTORY PHYSICAL CHEMISTRY (CHEM152)	15
INTRODUCTORY SPECTROSCOPY (CHEM170)	15
KEY SKILLS FOR CHEMISTS 1 (CHEM180)	15

Optional modules	Credits
FOUNDATIONS OF MEDICINAL CHEMISTRY (CHEM141)	15

Optional modules	Credits
INTRODUCTORY PHYSIOLOGY AND PHARMACOLOGY FOR CHEMISTS (CHEM142)	15

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

Year two

You will learn more advanced topics within all the main branches of chemistry and continue to develop your quantitative and key skills.

Practical skills will be developed through stand-alone practical modules and you will have the opportunity to spend between six and nine hours per week in the laboratory.

Modules

Compulsory modules	Credits
COORDINATION AND ORGANOMETALLIC CHEMISTRY OF THE D-BLOCK METALS (CHEM214)	15
ORGANIC CHEMISTRY II (CHEM231)	15
PREPARATIVE CHEMISTRY: SYNTHESIS AND CHARACTERISATION (CHEM245)	15
MEASUREMENTS IN CHEMISTRY (CHEM246)	15
PHYSICAL CHEMISTRY II (CHEM260)	15
KEY SKILLS FOR CHEMISTS 2 (CHEM280)	15
INORGANIC APPLICATIONS OF GROUP THEORY (CHEM216)	7.5

Optional modules	Credits
AN INTRODUCTION TO MEDICINAL CHEMISTRY (CHEM248)	7.5
APPLIED ANALYTICAL CHEMISTRY (CHEM286)	7.5
CHEMISTRY FOR SUSTAINABLE TECHNOLOGIES (CHEM284)	7.5
FUNCTIONAL ORGANIC MATERIALS (CHEM241)	15
STEM EDUCATION AND COMMUNICATION (CHEM390)	15

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

Year three

The third year will concentrate entirely on chemistry, extending your knowledge in the three traditional branches of the subject and the interdisciplinary subject of catalysis.

Importantly, year three will provide you with the opportunity to learn about the application of chemistry to the modern world, in modules that examine the chemistry and chemical processes that are fundamental to the production of pharmaceuticals, polymers / plastics, pigments and novel materials.

The practical modules in this year will be more challenging than those encountered in previous years, involve up to 15 hours laboratory work per week and in some cases will be organised as mini-projects.

Modules

Compulsory modules	Credits
CATALYSIS (CHEM368)	15
FURTHER ORGANIC CHEMISTRY (CHEM333)	15

Compulsory modules	Credits
FURTHER PHYSICAL CHEMISTRY (CHEM354)	15
INORGANIC MATERIALS CHEMISTRY (CHEM313)	15
PRACTICAL CHEMISTRY YR 3 (CHEM375)	22.5
PRACTICAL CHEMISTRY PROJECT YEAR 3 - AN INTRODUCTION TO RESEARCH METHODS (CHEM366)	15
FINAL YEAR RESEARCH PROJECTS (CHEM370)	22.5

Optional modules	Credits
BIOLOGICAL ENERGY CONVERSION PROCESSES (CHEM382)	7.5
BIORENEWABLE CHEMICALS FROM BIOMASS (CHEM384)	7.5
HETEROCYCLIC CHEMISTRY AND DRUG SYNTHESIS (CHEM338)	7.5
CHEMISTRY RESEARCH INTERNSHIP (CHEM309)	22.5
FURTHER ANALYTICAL CHEMISTRY (CHEM386)	15

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

Year four

The final year of your programme will be dominated by the Chemical research project which accounts for 75 of the 120 credits. You will choose which branch of chemistry you wish to pursue research in (and usually also which research group you wish to be in), and work throughout the year on original research at the

frontiers of chemistry. You select three of the available optional modules each semester that best reflect your interests.

Modules

Compulsory modules	Credits
CHEM480 - CHEMICAL RESEARCH PROJECT (CHEM480)	60

Optional modules	Credits
ADVANCED SYNTHESIS METHODS (CHEM435)	15
CHEMISTRY OF SOLIDS AND THEIR SURFACES (CHEM441)	15
INTERFACIAL ELECTROCHEMISTRY AND SPECTROSCOPY (CHEM455)	15
ADVANCED & FUTURE HEALTHCARE TECHNOLOGIES (CHEM428)	15
ELECTROCHEMICAL SYSTEMS FOR ENERGY APPLICATIONS (CHEM456)	15

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

Teaching and assessment

How you'll learn

Laboratory classes in years one and two prepare you for independent laboratory work in years three. In year three you will carry out mini research projects, applying learning in computational modelling and molecular visualisation that are introduced in year one.

You will be able to perform your own calculations to underpin final year research projects.

How you're assessed

You are assessed by examination at the end of each semester (January and May/June) and by continuous assessment of laboratory practicals, class tests, workshops, tutorials and assignments.

You have to pass each year of study before you are allowed to progress to the following year. Re-sit opportunities are available in September at the end of years one and two. If you take an industrial placement, a minimum standard of academic performance is required before you are allowed to embark on your placements. All years of study (with the exception of Year One) contribute to the final degree classification.

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

Our graduates develop a wide range of skills including numeracy, problem solving and IT in addition to scientific skills. Visits to the Department by leading companies such as GlaxoSmithKline and Unilever ensure that you make contact with prospective employers at key stages in your final year.

Typical careers of our graduates include

- assistant analyst
- development chemist
- research assistant
- site chemist.

Recent employers:

- GlaxoSmithKline
- Unilever
- IOTA Nanosolutions Ltd
- Perstorp Caprolactones
- Shell
- Towers Watson
- United Utilities.

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Fees and funding

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

Tuition fees

UK fees (applies to Channel Islands, Isle of Man and Republic of Ireland)

Full-time place, per year - £9,535
Year in industry fee - £1,850
Year abroad fee - £1,385 (applies to year in China)

International fees

Full-time place, per year - £29,100
Year in industry fee - £1,850
Year abroad fee - £14,550 (applies to year in China)

Fees are for academic year 2025/26.

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

Lab coats and safety goggles are provided free of charge.

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
for ABB two science A levels including Chemistry or AAB one science A level including A in Chemistry.

Applicants with the Extended Project Qualification (EPQ) are eligible for a reduction in grade requirements. For this course, the offer is **BBB** 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 considered in a relevant subject and specialism. Additional test required

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

Two science A levels including Chemistry and a second science.

Accepted science subjects:
Applied ICT
Biology (and Human Biology)
Chemistry
Computer Science
Economics

Electronics
Environmental Science
Further Mathematics
Geography
Geology
ICT
Life and Health Sciences
Mathematics
Psychology
Physics
Statistics.

For applicants studying A levels with English exam boards: Where a science has been taken at A level (Chemistry, Biology, Geology 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. Students will be invited to take an assessment.

Applicants must be completing the BTEC National Extended Diploma in Applied Science and be studying the following optional modules:
• Applications of Inorganic Chemistry
• Applications of Organic Chemistry
• Practical Chemical Analysis.

For previous BTEC (QCF) qualification:

The Applied Science pathway is acceptable and the following optional modules must be studied:

• Chemical Periodicity and its Applications
• Industrial Applications of Organic Chemistry and/or Industrial Chemical Reactions
• Mathematical Calculations for Science and/or Using Statistics in Science
• Chemical Laboratory Techniques and/or Chemistry for Biology Technicians.

International Baccalaureate

32 points overall and no score less than 4 and including 5 in HL Chemistry and 5 in one other HL science subject (or 6 in HL Chemistry if no other science being taken), or pass the IB Diploma with 6,5,5 in 3 Higher Level subjects, including 5 in HL

Chemistry and 5 in one other HL science subject (or 6 in HL Chemistry if no other science being taken).

Irish Leaving Certificate

H1, H2, H2, H2, H3, H3 (including Chemistry and one other Science)

Scottish Higher/Advanced Higher

Not accepted without Advanced Highers

Welsh Baccalaureate Advanced

B in the Welsh Baccalaureate, plus grades AB at A level including Chemistry and a second science (or Chemistry at grade A if no second science).

Access

Pass Access to HE Diploma in a relevant subject with 45 Level 3 credits with 33 at Distinction (including 15 in Chemistry and 15 in a second science) and 12 at Merit. Applicants will be invited to take an assessment.

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.

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

International Baccalaureate English A: Literature or Language & Literature

Grade 4 at Standard Level or grade 4 at Higher Level

International Baccalaureate English B

Grade 6 at Standard Level or grade 5 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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