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

Passionate about chemistry? Our MChem Chemistry programme offers advanced modules, research projects, and the chance to contribute to published work. Explore broad topics or specialise. This is ideal preparation for a PhD, research career, or expanding your scientific curiosity.

Introduction

Study Chemistry at Liverpool and learn in a culture of research excellence. Chemistry is an excellent choice for those with a keen interest in materials chemistry, digital chemistry, analytical chemistry and sustainability, alongside the traditional core areas of organic, inorganic, physical and theoretical chemistry.

The MChem degree in Chemistry equips graduates for a wide range of careers in academic or industrial research, the pharmaceutical and chemical industries, and other fields requiring strong scientific and numerate skills. It also provides a solid foundation for further study in specialised or interdisciplinary areas of chemistry. The programme offers a mix of interactive teaching, and practical work in our award-winning undergraduate laboratories, ensuring students develop advanced research skills, professional competencies, and a broad understanding of chemistry's real-world applications.

In Year 3, you'll work closely with academic staff to explore the research literature, an essential skill for all research chemists. You may also take part in broader research experiences through summer internships or local industry placements.

In your final year, you'll complete a major research project, making up three-quarters of the year, working with leading academics and contributing to cutting-edge chemical research.

The assessment strategy blends formative learning in workshops and lectures with summative methods such as exams, group projects, professional skills development, and laboratory-based tasks. Since students enter the programme with different levels of experience in maths, physics and biology, we offer supportive sessions to help you build confidence and tailor your academic development.

This degree is designed to help you graduate with deep scientific knowledge, practical research experience, and the skills needed for success in advanced study or professional scientific careers.

Please note, course information has been updated for entry 2026.

What you'll learn

- Practical application of chemistry
- Working in a research environment
- Digital, analytical and sustainable skills
- Applications of chemistry in the wider world
- A range of advanced topics linked to our research themes of Materials Chemistry, Chemistry of World Health, Chemistry at the Interface, Synthesis and Sustainable Catalysis and Chemical Models, AI and Automation
- Highly developed mathematical and problem-solving skills
- Digital fluency and expertise in chemistry specific and general computer systems
- Lifelong learning skills that are flexible and adaptable
- Communication and interpersonal skills.

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.

Back to top

Course content

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

Year one

In Year 1, you'll study core chemistry topics and explore its broader context. You'll engage in up to 6 hours weekly of practical chemistry across synthetic, measurement, and digital areas. A flexible foundations module supports varying levels in maths, physics, and biology whilst building professional skills.

In Semester 2, choose 15 credits of subsidiary modules from chemistry or other disciplines (pre-requisites may apply), or introductory open languages. Module availability, especially subsidiaries, may vary yearly.

Please note some listed modules are currently awaiting approval and may be subject to change.

Compulsory modules

- CHEM100: Shaping Future Chemists: Laboratory, Analytical and Digital skills 1
- CHEM101: Core Chemistry 1A: Structure, Bonding & Change
- CHEM 102: Core Chemistry 1B: Reactions, Mechanisms and Sustainability Principles
- CHEM103: Foundations of Chemistry: Mathematics, Physics and Biology relevant for the Chemical Sciences.

Optional modules

- CHEM104: Introductory Medicinal Chemistry and Physiology
- CHEM106: Modern applications in Chemistry.

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

Year two

In Year 2, your journey of core chemistry continues, including aspects of analytical, sustainable, spectroscopy, symmetry, quantum and synthetic strategy/design. Practical skills build on year 1 themes, operating in alternating weeks of up to 12 hours supplemented by supported analysis/report sessions.

Development of quantitative, professional and commercial skills are continued during semester 1 with semester 2 allowing 15 credits of subsidiary modules like year 1. Module availability, especially subsidiaries, may vary yearly.

Please note some listed modules are currently awaiting approval and may be subject to change.

Compulsory modules

- CHEM200: Shaping Future Chemists: Laboratory, Analytical and Digital skills 1
- CHEM201: Core Chemistry 2A: Thermodynamics, Transition Metals and Synthetic Methods
- CHEM202: Core Chemistry 2B: Spectroscopy and Strategies for Sustainable Synthesis
- CHEM203: Further Foundations for the Future of Chemistry: Quantitative Skills and Industry Awareness.

Optional modules

- CHEM204: Polymer Chemistry and Materials
- CHEM206: STEM Communication and Education
- ULMS254: Becoming Entrepreneurial.

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

Year three

In year 3, you'll study advanced core topics with clear links to our research themes. Semester 2 can be tailored through the choice of two research-connected optional modules. Module availability may vary yearly as we develop/adapt to sector demands.

You'll work with academics to delve into the research literature or spend time on a wider project such summer internships or local industry. You'll complete modelling, industrially linked activities and up to three mini-research rotations, in preparation for year 4.

Please note some listed modules are currently awaiting approval and may be subject to change.

Compulsory modules

- CHEM301: Core Chemistry 3: Current Topics in Synthetic Design and Advanced Materials

- CHEM300B: Shaping Future Chemists: Literature review and advanced practical skills
- CHEM300C: Shaping Future Chemists: Industry, modelling and advanced practical skills.

Optional modules

- CHEM302: Further Analytical Chemistry
- CHEM304: Catalysis
- CHEM306: Further Medicinal Chemistry
- CHEM308: Chemistry for the Environment and Renewable Carbon: Integrating Sustainability and Technology
- CHEM312: Advanced & Future Healthcare Technologies.

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 90 of the 120 credits. You'll choose which branch of chemistry you wish to pursue research in, and work throughout the year on original research at the frontiers of chemistry. You select an optional theory modules in each semester that best reflect your interests. Module availability may vary yearly as we develop/adapt to sector demands.

Please note some listed modules are currently awaiting approval and may be subject to change.

Compulsory modules

- CHEM400: Chemical Research Project
- CHEM401: Chemical Research Project: Preparation and skills development.

Optional modules

- CHEM403: Advanced Synthesis Methods
- CHEM405: Interfacial Electrochemistry and Spectroscopy
- CHEM402: Chemistry of Solids and their Surfaces
- CHEM404: Electrochemical systems for Energy Applications.

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

Teaching and assessment

How you'll learn

A knowledge of core chemistry is fundamental to any chemistry degree. For all years of study, core chemistry material is delivered in a series of interactive lectures, with the interdisciplinary nature of chemistry showcased appropriately. Core concepts are contextualised with publications of recent scientific research whilst encouraging students to be critical of such material, building digital fluency alongside engaging with traditional and modern digital platforms. This is supported by plentiful workshops run by academics to help practice application of material in a supportive and constructive way.

We embrace the diverse nature of our students, whether through their background or pre-university qualification, by offering foundation modules to ensure students have reached a particular competency to progress in wider subjects such as maths, physics and molecular biology. Practical work follows three main themes of synthetic, measurements and digital chemistry across years 1 to 3 with supported assessment preparation time offered to students. We make use of portfolios throughout all lab courses to give students space to fail, reflect and improve to develop lifelong learning. Numerous collaborative group work activities across core modules allow students to consider and discuss major societal and environmental challenges such as UN SDGs and green chemistry principles. Additionally, group work based around applications of industrial research allow further understanding of how industrial processes relate to planetary boundaries and global systems.

We believe the development of the person is core to success, through enhancing professional, employability and entrepreneurial skills via embedded activities throughout all years of our core curriculum including reflective activities, group work, presentations, posters and peer-to-peer activities. Confidence building is developed continuously through discursive and interactive sessions, with learners contributing ideas and analysis in a ‘safe space’ for sharing of ideas and expertise. Additional support is available via our academic advisors to encourage personal development planning for the students.

In the final year students join an existing research group and complete a major research project under the supervision of an expert in their field. These research projects usually are of high quality and can result in publications in respected journals.

How you're assessed

All years of study (with the exception of year 1) contribute to the final degree classification. Traditional examinations test learning and problem solving and make and range from 2-4 exams accounting for ~40-50% of our programmes. We supplement this with a range of assessments which are designed to mimic the formats used in employment and postgraduate environments, supporting student preparedness for future careers including:

- Authentic tasks are linked to research-connected teaching, such as mini-project lab rotations and research projects aligned with departmental research clusters
- Report writing, problem-solving tasks, reflective portfolios, and elevator pitches
- Communication-style outputs such as recorded videos, posters, journal-style science communication, and presentations
- Students engage in reflective activities, enabling them to evaluate and articulate how their developed skills contribute to employability and lifelong learning
- Group-based tasks are structured to promote inclusive collaboration, encouraging all students to contribute and learn from diverse perspectives while working towards shared goals.

Feedback is designed to be timely and developmental, helping students self-assess and progress in a structured, supportive environment. Examples include:

- Students receive formative feedback both verbally and in writing through formative workshops and coursework
- Feedback from a range of sources including staff, demonstrators, and peers, supporting iterative learning and reflection
- Scaffolded support such as write-up sessions, catch-up opportunities, and resilience-building practices allow students to respond to feedback and improve
- Group-based activities include peer feedback opportunities, enabling students to give and receive constructive input within their teams, helping them improve both content and collaboration skills.

Inclusive and accessible practices are embedded throughout our course material design and deployment, such as templates using accessible fonts and colour schemes and prompt release onto our virtual learning environment. Our assessments and feedback are supported in numerous ways:

- Prelab resources and virtual tours allow students to prepare independently and build confidence before engaging in practical work and assessment

- Students will prepare presentations and related materials using modern inclusive practices
- Students are encouraged to reflect on inclusivity, accessibility, and sustainability in numerous assessments throughout the programme, eg elevator pitches aimed at diverse audiences.

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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^ Back to top

Careers and employability

The rigorous nature of a Chemistry degree is well recognised by employers meaning our graduates are well qualified to take up employment in a variety of fields in addition to chemistry across the chemical sciences, related industries and the general graduate market.

Skills developed include high numeracy and problem-solving abilities, enhanced communication skills, building resilience and confidence to tackle complex, open-ended challenges. Embedded professional skills development, and industry aligned visits and activities (including pharmaceutical industry, fast-moving consumer goods, energy sector, nuclear industry, forensics, patent law), ensure that you make contacts with prospective employers at key stages in your programme.

Typical careers of our graduates beyond moving onto postgraduate studies include:

- Analytical scientist
- Research scientist
- Formulation scientist
- Graduate future leader
- Data engineer
- Nuclear graduate
- Development chemist
- Teaching
- Patent law.

Our graduates are employed by a vast range of employers, over 160 spanning the last 5 years. Some recent employers include:

- AstraZeneca
- GlaxoSmithKline
- Unilever
- Ineos
- Alfred H Knight
- Becker Industrial Coatings
- Reckitt
- PwC
- BAE Systems.

Back to top

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 - £1,905
Year abroad fee - £1,430 (applies to year in China)

International fees

Full-time place, per year - £29,100
Year in industry fee - £1,905
Year abroad fee - £14,550 (applies to year in China)

Fees are for academic year 2025/26. Tuition fees for the academic year 2026/27 will be announced soon.

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. Free access to online core textbooks and a range of other online resources.

Find out more about the additional study costs that may apply to this course.

Back to top

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.

Back to top

Generated: 17 Sep 2025, 16:38