Course Summary: May 24, 2025

Chemistry with Medicinal Chemistry MChem Honours

- UCAS code: **F123**
- Full time
- 4 years

This professionally accredited MChem degree equips you with a thorough understanding of all the main areas of chemistry and includes a year of advanced study at master's level. It also provides a good basis for a PhD or career in research.

You are currently viewing course information for entry year: **2025**

Next start date:

- September 2025

Tuition fees (Year 1)

- Home: **£9,535**
- International: **£30600**

Entry requirements and offers

- A-Level: **AAB**
- IB: **33 points**

View contextual offers

UCAS Institution name and code:

- NEWC / N21

Course overview

Chemistry touches every part of our lives. From food and medicine to biotechnology and renewable energy, its influence is endless. As a Chemist, you can have a great career and make a difference in the world.

Medicinal Chemistry is the discovery, design and synthesis of new clinical drugs.

Our MChem degree follows the normal BSc curriculum, plus a further year of advanced study. The MChem programme is perfect for those pursuing a career within scientific research.

This course includes the option to spend a year **studying abroad** or **working in industry**.

This exciting degree allows you to broaden your interests as you discover the subject. You'll explore the role of chemistry in:

- drug design
- cancer chemotherapy
- enzymology
- toxicology

You'll study organic, inorganic, physical and structural chemistry. You'll investigate modern analytical techniques and computational chemistry. You can create your own distinct learning experience at Newcastle. You'll explore your

interests as you discover the subject.

BSc or MChem?

The MChem programme is perfect for those pursuing a career within scientific research.

Our MChem degree follows the normal BSc curriculum, plus a further year of advanced study. You'll undertake a research project in the fourth year. You'll gain valuable experience of working in a research environment.

Your course and study experience - disclaimers and terms and conditions
Please rest assured we make all reasonable efforts to provide you with the programmes, services and facilities described. However, it may be necessary to make changes due to significant disruption, for example in response to Covid-19.

View our Academic experience page, which gives information about your Newcastle University study experience for the academic year 2024-25.

See our terms and conditions and student complaints information, which gives details of circumstances that may lead to changes to programmes, modules or University services.

Additional information

Flexible degree structure

Our chemistry degrees share a common first year. This ensures that you develop a solid foundation in chemistry and its many forms.

Quality and ranking

Professional accreditation and recognition

All professional accreditations are reviewed regularly by their professional body.

Modules and learning

Modules

The information below is intended to provide an example of what you will study.

Most degrees are divided into stages. Each stage lasts for one academic year, and you'll complete modules totalling 120 credits by the end of each stage.

Our teaching is informed by research. Course content may change periodically to reflect developments in the discipline, the requirements of external bodies and partners, and student feedback.

Optional module availability
Student demand for optional modules may affect availability.

Full details of the modules on offer will be published through the Programme Regulations and Specifications ahead of each academic year. This usually happens in May.

To find out more please see our terms and conditions

Our chemistry degrees share a common first year. This ensures that you develop a solid foundation in chemistry and its many forms. You'll explore the fundamentals of organic, inorganic and physical chemistry.

Modules

Compulsory Modules	Credits
Chemical Laboratory Skills 1	20
Chemical Skills and Professionalism	10
Fundamentals of Organic Chemistry	20
Fundamentals of Inorganic Chemistry	20
Fundamentals of Physical Chemistry	20
General Chemistry	10
Fundamentals of Biological Chemistry	10

Additional compulsory module information

If you have A Level Maths grade C or below you take the following compulsory module:
Mathematical Skills for Chemists (10 credits)

Optional Modules	Credits
Mathematical Skills for Science	10
Introduction to Scientific Computing for Chemists	10
Introductory Astrophysics	10

You'll explore concepts in medicinal chemistry including pharmacokinetics, pharmacodynamics, enzymes and drug design. You'll be introduced to structure-based drug design using CCP4 Molecular Graphics software.

You'll take an employability module that includes a Professional Awareness Event. You'll have the opportunity to interact with a range of companies.

Modules

Compulsory Modules	Credits
Sustainable Solutions	10

Chemical Laboratory Skills 2	20
Structural Chemistry	10
Organic Chemistry	20
Inorganic Chemistry	20
Physical Chemistry	20
Medicinal Chemistry	10
Optional Modules	**Credits**
Applied Computational Medicinal Chemistry	10
Chemistry of the Atmosphere	10

You'll discover more advanced concepts in medicinal chemistry including toxicology, enzymology, cancer chemotherapy and chemotherapy of infectious diseases.

You'll also study advanced organic and inorganic chemistry, exploring topics including chemical nanoscience, synthesis and bioinorganic chemistry.

You'll also complete an independent research literature project. This will help to develop your skills in reviewing, critiquing and presenting research material.

Modules

Compulsory Modules	**Credits**
Professional Development and Employability Skills for Chemists	10
Advanced Organic Chemistry	20
Advanced Inorganic Chemistry	20
Advanced Medicinal Chemistry	20
Advanced Structural Chemistry	10
Chemical Laboratory Skills 3M	20
Analytical Chemistry in Practice	20

In your final year, you'll complete an investigative project. This involves creating original, unpublished work in a modern area of chemistry. As part of the project, you'll generate a researcher development record. This record highlights the specialist skills you've acquired from your research project.

You will also choose from a range of optional modules on specialist topics. These include catalysis and synthesis of organic compounds.

Modules

Compulsory Modules	Credits
Research Project	70
Advanced Problem Solving	10
Advanced Methods in Chemical Biology and Drug Discovery	10
Optional Modules	**Credits**
Selectivity and Stereocontrol in Organic Synthesis	10
Pericyclic and radical reactions	10
Chemistry Far From Equilibrium	10
Contemporary Catalysis: Principles and Applications	10
Modern aspects of inorganic chemistry	10
Energy and Materials	10

Information about these graphs

We base these figures and graphs on the most up-to-date information available to us. They are based on the modules chosen by our students in 2024-25.

Teaching time is made up of:

- scheduled learning and teaching activities. These are timetabled activities with a member of staff present.
- structured guided learning. These are activities developed by staff to support engagement with module learning. Students or groups of students undertake these activities without direct staff participation or supervision

Teaching and assessment

Teaching methods

You'll learn through:

- lectures/seminars
- laboratory practicals
- computational practicals
- research project
- small group tutorials

Assessment methods

You'll be assessed through a combination of:

- Assessments
- Assignments – written or fieldwork
- Coursework
- Dissertation or research project
- Essays

Skills and experience

Practical skills

You'll have the opportunity to develop professional laboratory skills through practical experience in our high-spec teaching labs.

You'll also develop strong analytical and problem-solving skills. These will enable you to pursue careers outside of Chemistry, including:

- accountancy
- patent law
- marketing

Business skills

You'll develop professional and employability skills. You'll have the opportunity to interact with alumni and leading companies.

You're able to develop business skills through:

- employability skills modules across all stages
- work placements
- study abroad opportunities
- industrial visits

You'll develop key skills, including:

- writing proposals
- writing scientific reports and papers
- delivering presentations

You'll also network with industry at our Professional Awareness Day, empowering you to make decisions about your career.

Research skills

Research is at the heart of what we do. Our latest research discoveries feed into your curriculum. You'll learn on the cutting-edge of Chemistry. Our discoveries include:

- discovery of new anti-cancer drugs
- development of battery technology
- creation of nanoscale electronics

Opportunities

Study abroad

You'll spend Stage 3 studying chemistry at one of our partner institutions abroad. You'll have the choice to study at a leading international university, including:

- Monash University
- University of Hong Kong
- University of Pittsburgh

If you take an assessed year abroad or industrial placement, you'll study both the Advanced Inorganic and Advanced Organic Chemistry modules via distance learning, alongside an 80 credit project.

You'll be encouraged to embrace fun and challenging experiences, make connections with new communities and graduate as a globally aware professional, ready for your future.

Find out more about study abroad

Industrial training year

In Stage 3, you'll take your year in industry. Gaining work experience is invaluable for your future career. You'll experience the modern workplace and explore commercial projects. If you impress your host company, it could even result in a job offer upon graduation.

Our students have completed paid placements in leading companies including:

- Akzo Nobel
- AstraZeneca
- Corus
- GlaxoSmithKline
- P&G

Facilities and environment

Facilities

The Bedson Building is the home of Chemistry and is located on our city-centre campus. It's based in the School of Natural and Environmental Sciences.

Here you will benefit from well-resourced teaching and research laboratories and facilities including:

- advanced instrumentation for analytical chemistry
- mechanical, glassblowing and electronic workshops
- facilities for the synthesis and characterization of novel materials
- extensive computational resources for molecular modelling and dynamics

We also have analytical research facilities which include:

- mass spectrometry
- nuclear magnetic resonance (NMR) spectroscopy
- ion beams
- X-ray diffraction

These resources offer you invaluable hands-on experience, preparing you for a successful career in Chemistry.

Support

We take your health and wellbeing seriously and are committed to supporting you throughout your studies so you can fulfil your potential at university. This support includes:

- a personal tutor who is an academic member of staff who can help you with academic and personal issues throughout your degree
- a peer mentor scheme which pairs you with a current student from your course to help you navigate your first year at university
- a staff-student committee, to give you an opportunity to have a say in how your degree works
- support, treatment and guidance on mental and physical health from our wellbeing team

Your future

Join a network of successful graduates

Employers hold our graduates in high regard. Our graduates go on to work in a wide variety of sectors, including:

- drug development
- pharmacologist
- data analyst
- laboratory technician

Benefit from strong industry links

You'll also benefit from our well-established links with organisations within the industry, such as:

- Astra Zeneca
- GlaxoSmithKline
- Proctor & Gamble

Enterprising students

Careers support

During your second year, you'll attend our Professional Awareness Day. We invite a broad mix of businesses to the event, carry out mock interviews and hold Q&A sessions with alumni. You're empowered to make decisions about your future career.

In your final year, you will have one-to-one meetings with an academic to discuss your professional future.

Our Careers Service is one of the largest and best in the country, and we have strong links with employers. We provide an extensive range of opportunities to all students through our ncl+ initiative.

Visit our Careers Service website

Recognition of professional qualifications outside of the UK

From 1 January 2021 there is an update to the way professional qualifications are recognised by countries outside of the UK

Check the government's website for more information.

Find out more...

- Go online for information about our full range of degrees: **www.ncl.ac.uk/undergraduate**
- To watch videos about student life in Newcastle, visit **www.ncl.ac.uk/lovenewcastle**
- Visit **www.ncl.ac.uk/tour** to take virtual tours of the campus and city
- Book for an Open Day to come and see us in person **www.ncl.ac.uk/openday**
- Contact us online at **www.ncl.ac.uk/enquiries** or phone +44 (0)191 208 3333

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