

Course Summary: October 4, 2022

## Chemistry with Industrial Training Year

MChem Honours

- UCAS code: **F106**
- Full time
- 4 years
- Next start date: **September 2022**

This professionally accredited MChem degree includes an industrial placement year and a year of advanced study at master's level.

### Fees (per year)

- Home: **£9250**
- International: **£25200**

### 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.

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.

You'll explore the role of chemistry in:

- drug design
- electronic properties of molecules and materials
- renewable energy technology (solar, batteries)
- nanoscience

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.

In Stage 3, you'll take your year in industry. Gaining work experience is invaluable

for your future career.

In your final year, you'll study advanced modules including:

- catalyst application and design
- organic synthesis for drug targets
- exploring d and f block chemistry: applications and structural methods
- pericyclic and radical reactions

## 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 2022-23.

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

We have a long tradition of excellence in teaching, recognised in many external surveys and assessments, but also by our own students.

Our commitment to teaching quality and an excellent student experience is reflected through our results in national and international student satisfaction surveys.

- Top 200 for Chemistry - QS World University Rankings by Subject 2022
- 1st in the UK and 8th in the world for sustainable development – Times Higher Education Impact Rankings 2022
- 65% increase in research power since 2014 – Research Excellence Framework 2021
- 42% of our research is classified as 4\* world-leading research – Research Excellence Framework 2021
- Global Top 125 University - QS World University Rankings 2023

## Professional accreditation

This degree is professionally accredited by the Royal Society of Chemistry. It fully meets the academic criteria for Chartered Chemist (CChem).

Find out more on the [Royal Society of Chemistry's website](#).

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
<a href="#">Chemical Skills and Professionalism</a>	10
<a href="#">Fundamentals of Organic Chemistry</a>	20
<a href="#">General Chemistry</a>	10
<a href="#">Fundamentals of Physical Chemistry</a>	20
<a href="#">Fundamentals of Inorganic Chemistry</a>	20

Chemical Laboratory Skills 1	20
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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
Natural Science Research Impact	10
Diversity of Life: Form and Function	20
Earth System Science	10
Mathematical Skills for Chemists	10
Introduction to Scientific Computing for Chemists	10

You'll explore more advanced concepts in chemistry including polymers, supramolecular and computational chemistry. You'll also investigate bioactive natural products and their role in naturally-derived drugs.

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
Structural Chemistry	10
Organic Chemistry	20
Physical Chemistry	20
Inorganic Chemistry	20
Chemical Laboratory Skills 2	20

Optional Modules	Credits
<a href="#">Global Element Cycling</a>	10
<a href="#">Medicinal Chemistry</a>	10
<a href="#">Scientific Computing for Chemists</a>	10
<a href="#">Chemistry of the Atmosphere</a>	10

You'll complete a paid placement year. We will help you find a company that will give you invaluable work experience. With our links to industry, you'll find a company that matches your interests.

You're supported by visits from academic staff during your placement. You'll also complete a log book demonstrating the skills and learning achieved during your placement. This experience will help you to stand out in a competitive field.

## Modules

Compulsory Modules	Credits
<a href="#">Advanced Organic Chemistry (Distance Learning)</a>	20
<a href="#">Advanced Inorganic Chemistry (Distance Learning)</a>	20
<a href="#">Project in Industry</a>	80

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
Physical and Computational Chemistry	20
Advanced Problem Solving	10
Research Project	70
Optional Modules	Credits
Advanced Structural Chemistry	10
Selectivity and Stereocontrol in Organic Synthesis	10
Advanced Methods in Drug Discovery	10
Pericyclic and radical reactions	10
Chemistry Far From Equilibrium	10
Contemporary Catalysis: Principles and Applications	10
Exploring d and f block chemistry: applications and structural methods	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 combine data on the planned delivery and assessments of our courses in 2021-22 with data on the modules chosen by our students in 2020-21.

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

Teaching is by a combination of lectures, tutorials and lab-based and computational experiments. You will have practical classes for two afternoons each week in Stage 1 and these increase in later years.

## Assessment methods

You'll be assessed through a combination of:

- Assessments
- Dissertation or research project
- Examinations – practical or online
- Practical sessions

## Skills and experience

### Practical skills

During your degree, you'll 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'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

### 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

During your studies, you'll be based in [the School of Natural and Environmental Sciences](#) at our city-centre campus.

You'll have the opportunity to study in well-resourced research laboratories and synthetic chemistry teaching laboratories. Our facilities also include:

- physical chemistry laboratory
- mechanical, glassblowing and electronic workshops, staffed by highly trained technicians
- facilities for the synthesis and characterisation of novel materials
- extensive computational resources for molecular modelling and dynamics
- a centralised NMR facility which includes 200, 300 and 500 MHz spectrometers

## Support

To support you in your studies, all new students entering year 1 or year 2 will receive:

- a tablet so you can download the online learning resources you'll need for your course (helping us to make our campus more sustainable)
- a lab coat for laboratory practicals

You'll have the support of an academic member of staff as a personal tutor throughout your degree to help with any issues.

## Your future

### Join a network of successful graduates

92% of our 2016/17 graduates progressed to employment or further study within six months of graduating\*.

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

- pharmaceuticals
- accountancy
- agrochemicals
- patent law
- petrochemicals
- marketing

\*Destinations of (undergraduate, UK and EU) Leavers from Higher Education Survey 2016/17

### 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
- Johnson Matthey
- Akzo Nobel

## Make a difference

### 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 award-winning 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](http://www.ncl.ac.uk/undergraduate)**
- To watch videos about student life in Newcastle, visit  
**[www.ncl.ac.uk/lovenewcastle](http://www.ncl.ac.uk/lovenewcastle)**
- Visit **[www.ncl.ac.uk/tour](http://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](http://www.ncl.ac.uk/openday)**
- Contact us online at **[www.ncl.ac.uk/enquiries](http://www.ncl.ac.uk/enquiries)** or phone +44 (0)191 208 3333

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**[www.ncl.ac.uk/pre-arrival/regulations](http://www.ncl.ac.uk/pre-arrival/regulations)**

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