Biochemistry (Integrated Master's)
MSci Honours

UCAS code C701
4 Years

www.ncl.ac.uk/ug/C701

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If you are interested in a research career in biochemistry, this Integrated Master’s degree equips you with the advanced practical skills and knowledge you’ll need.

This MSci degree is similar in content to our Biochemistry BSc Honours degree, but it includes a fourth year of study at Master’s level. This helps you develop advanced practical and academic skills needed for your future career.

The fourth year comprises an extended laboratory-based research project, to advance your research skills to a professional level. It also includes Master’s-level modules selected from an extensive list offered by our Research Institutes (including Ageing and Health, Biomaterials and Tissue Engineering, and Cancer Studies).

This gives you the opportunity to work alongside our world-leading experts and experience specialist facilities.

Highlights of this degree

Professional accreditation*

This degree has advanced accreditation by the Royal Society of Biology (RSB).

Accreditation by the RSB recognises academic excellence in the biosciences that educates the research and development leaders and innovators of the future.

*All professional accreditations are reviewed regularly by their professional body.

Study at the cutting edge

Scientists working in biomedicine are at the forefront of medical developments that can save lives.

By studying one of our degrees, you’re taking your first step towards a rewarding career in science.

We’ll make sure you get the best start by providing expert teaching at the cutting edge of the subject.

We’re a National Centre of Excellence in biomedical research and our world-leading expert staff teach at all levels on our degree programmes.

This means you graduate with the latest knowledge in human health and disease.

Boost your employability with a professional placement year

Apply to spend 9 to 12 months on an optional work placement between Stages 2 and 3. You can apply to spend your placement year with any organisation and will receive University support to do so.

You’ll gain first-hand experience of working in the sector, putting your learning into practice and developing your professional expertise.

It will extend your degree by a year and is subject to availability, however it isn’t available if you’re spending a year studying abroad.

Find out more about Work Placements.

Get work experience whilst you study

We provide lots of work experience opportunities here at the University, to help you boost your employability alongside your studies.

Options include:

- vacation studentship opportunities in one of the University’s research laboratories
- paid part-time work in one of our research institutes through our Laboratory Assistant scheme
- employability ambassador scheme
- student mentoring scheme

The University has an award-winning Careers Service. They can help you find suitable work, provide interview training and offer advice on your CV and application forms.

Develop advanced research skills

In your third year you complete a research project on a topic that interests you.

This gives you practical experience of planning and conducting research, boosting your CV with desirable research skills.

Most students do their project work in one of our research institutes.

Here, you’re working alongside leading scientists. You’ll develop advanced scientific skills and get an insight into a career as a researcher.

Your project may be:

- a laboratory project in one of our internationally rated research institutes
- a laboratory project in a research laboratory abroad
- a clinical study under the supervision of one of the medically qualified staff working within our Faculty
- a project with a local school or college
- an IT-based project

In your final year, you complete an extended laboratory-based research project. This extends across the whole of your fourth year, giving you sustained and in-depth experience of laboratory research.

Study abroad

If you want to experience life in another country, you can work or study abroad as part of your degree.
A year abroad boosts your CV, your confidence and your communication skills. It shows employers you embrace new experiences and gives you intercultural awareness.

We have partners across Europe and in North America, Australia and Singapore. You can study abroad at a partner university or take a summer placement in a research laboratory overseas.

**Transfer to Medicine or Dentistry**

There is flexibility to [transfer between our degree programmes](#) at the end of the first year if you find your interests change.

You can also apply to [transfer to our Medicine or Dentistry degree](#). This opportunity is open to UK, EU and international students. It is competitive, with a limited number of places available. Students are selected on the basis of academic performance in the first year, a UKCAT score, a personal statement and, if shortlisted, an interview.

**Facilities**

You’ll be based in the School of Biomedical, Nutritional and Sport Sciences. The School is in the Faculty of Medical Sciences, which is also home to Dentistry, Medicine, Psychology and Pharmacy.

Situated next to Newcastle’s RVI hospital, we’re one of the largest integrated teaching/hospital complexes in the country.

Our facilities include:

- a dedicated medical library with a wide range of specialist books and journals
- large teaching laboratories
- hi-tech computer clusters and study spaces

Newcastle’s vibrant city centre is just a few minutes’ walk away.

Visit the School’s website to watch videos by undergraduates who have recorded their experiences working in our labs and find out what former students have done since graduating.

**Support and settling in**

We provide plenty of support to help you successfully move from school to university study. We’ll help you settle in quickly and are here if you have any issues.

We support you through:

- a personal tutor – a member of academic staff who can help with academic and personal issues
- a peer mentor – a fellow student who can help you settle in and answer any questions you have
- specialised course advisers and tutors - who operate an open door policy for all students
- our student-run society – to help you make friends with your course mates through social events

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**Course Details**

**Modules for 2019 entry**

**Please note**

The module and/or programme information below is for **2019 entry**. Our teaching is informed by research and modules change periodically to reflect developments in the discipline, the requirements of external bodies and partners, student feedback, or insufficient numbers of students interested (in an optional module). To find out more read our terms and conditions.

Module/programme information for **2020 entry** will be published here as soon as it is available (**end of May 2020**).

Our degrees are divided into Stages. Each Stage lasts for an academic year and you need to complete modules totalling 120 credits by the end of each Stage. Further information, including the credit value of the module, is available in each of the module descriptions below.

**What you will study**

**Flexible degree structure**

All of our Biomedical and Biomolecular Sciences degrees are divided into two phases. Phase 1 is shared by all of our degrees and provides a broad introduction to biomolecular sciences, while Phase 2 provides specialist topics relating to your individual degree choice.

This flexible structure gives you the chance to try a broad range of topics, helping you to see where your interests in biomedical sciences lie before you specialise.

You can change between our degrees at the end of Year 1 if you wish.

**Phase 1**

All of your first year, and the first half of your second year.

We introduce you to biomolecular sciences through a series of modules covering:

- cell biology
- biochemistry
- microbiology and immunology
- genetics
- pharmacology
- physiology
- practical skills in biomedical and biomolecular science

**Phase 2**

The second half of your second year and the remainder of your degree.

This phase is specific to the individual degree that you choose. On our Biochemistry MSci degree, you study topics such as:

- DNA replication, recombination and repair
- genetics of signalling and the cell cycle
proteins and enzymes
protein analysis
protein trafficking and biological membranes
biochemistry of cancer and chronic diseases
biochemistry of gene expression
applied and integrated biochemistry

You also complete a research project in an area linked to your degree that interests you.

In third year, you’ll select one of the following modules, designed to boost your professional skills in an employment area that we know many of our graduates progress to:

- Business Enterprise for the Bioscientist
- Healthcare Organisation and Practice
- Science Communication
- Research in Biochemistry and Genetics
- Bioethics
- Bioinformatics

Final year

You complete a fourth year of advanced study at Master’s level.

This is designed to give students interested in a career in research more in-depth experience in the laboratory environment.

You will complete a year-long research project in an area linked to your degree that interests you. You will also choose 40 credits available from a range of Master’s level modules.

Although you’re studying modules at Master’s level, undergraduate fees and funding still apply for this final year.

Modules

Stage 1

Compulsory modules
- BGM1002 Biochemistry
- BGM1004 Genetics
- CMB1003 Microbiology and Immunology
- CMB1004 Cell Biology
- CMB1005 Practical Skills in Biomedical and Biomolecular Sciences 1
- CMB1006 Practical Skills in Biomedical and Biomolecular Sciences 2
- PED1003 Pharmacology
- PSC1002 Physiology

Stage 2

Compulsory modules
- BGM2002 Biochemistry and Genetics of Signalling and the Cell Cycle
- BGM2056 DNA Replication, Recombination and Repair
- BGM2062 Advanced Protein Analysis
- BGM2060 Proteins and Enzymes
- BGM2061 Protein Trafficking and Biological Membranes
- CMB2000 Essential Biomedical Research Skills
- CMB2001 Control of Eukaryotic Gene Expression
- CMB2004 Cell and Molecular Biology of the Immune System

Work Placement (optional)

You can apply to spend 9 to 12 months on an optional work placement between Stages 2 and 3. You can apply to spend your placement year with any organisation and will receive University support to do so. It will extend your degree by a year and is subject to availability. It isn’t available if you’re spending a year studying abroad. Find out more on about Work Placements.

You take NCL3000 Careers Service Placement Year Module or BMS3030 Professional Placement Year.

Stage 3

Compulsory modules

You take one of the following compulsory project modules:
- CMB3001 Research Design Project
- CMB3002 Research Project for Exchange Students
- CMB3004 Research Project for Stage 3 MSci Students

You take the following compulsory modules:
- BGM3057 Integrated Biochemistry
- BGM3063 Biochemistry of Gene Expression
- BGM3064 Applied Biochemistry
- BGM3065 Biochemistry of Cancer and Chronic Diseases

Optional modules

You select one module from:
- BGM3046 Research in Biochemistry and Genetics
- BMS3003 Business Enterprise for the Bioscientist
- BMS3015 Healthcare Organisation and Practice
- BMS3016 Science Communication
- BMS3022 Bioethics
- BMS3025 Bioinformatics

Stage 4

Compulsory modules
- CMB4099 Research Project

Optional modules

You choose your remaining 40 credits from a range of Master’s-level modules.

Guide to Biomedical and Biomolecular Sciences at Newcastle

Not sure which degree is right for you? Find out a bit more about our different subject areas below.

Remember, all our degrees share the same Phase 1, so you can transfer to a different degree if you find your interests change (up until the end of Phase 1).

Biomedical Sciences

Modern medicine depends on the advances made by scientists working in the biomedical sciences. You’ll study anatomy, biochemistry, genetics, immunology, microbiology, neuroscience, pharmacology and physiology. This multidisciplinary approach helps us understand disease processes and find new treatments for diseases such as cancer, Alzheimer’s disease and TB.

- Biomedical Sciences BSc Honours (B940)
• Biomedical Sciences (Integrated Master's) MSci Honours (B900)

Biochemistry
Biochemistry is the study of life at the molecular level. You’ll study how genes and proteins regulate cells, tissues and whole organisms like you. Have you wondered what causes diseases such as cancer and diabetes? Would you like to help develop new drug treatments? Biochemistry provides the key to understanding how diseases arise and can be treated.

• Biochemistry BSc Honours (C700)
• Biochemistry (Integrated Master’s) MSci Honours (C701)

Biomedical Genetics
DNA is the genetic ‘blueprint’ that ensures the continuity of life from parent to offspring. Genetics is the study of how DNA is transmitted between generations. And how it’s decoded to determine our individual characteristics. We have a strong research and teaching reputation in this field.

• Biomedical Genetics BSc Honours (B901)
• Biomedical Genetics (Integrated Master’s) MSci Honours (B903)

Medical Science
Do you enjoy biology? Are you interested in the biomedical or biomolecular aspects of the subject? Want to study these further at university? If you are not quite sure which area will suit you best, the Medical Science (Deferred Choice) programme could be ideal for you. It allows you to study the common first year before deciding which subject area to specialise in at later stages.

• Medical Science (Deferred Choice) BSc Honours (B902)

Pharmacology
Pharmacology involves the study of the action of drugs on the body and vice-versa. An understanding of drugs and their actions allows us to use them safely and effectively. It is thanks to pharmacologists that you can take an aspirin when you get a headache or have an anaesthetic when the dentist gives you a filling.

• Pharmacology BSc Honours (B210)

Physiological Sciences
Physiology is the study of how the body functions. Physiologists study the processes essential to human life such as breathing, digesting food and sensing the world around us. You’ll focus on human physiology, which underpins our understanding of how the body works in health and disease.

• Physiological Sciences BSc Honours (B100)

Teaching and assessment
You’ll learn through a combination of lectures, practical laboratory classes and small group seminars. You also have the chance to attend optional research talks, aimed especially at first-year students, as part of our biomedicine+ programme.

Assessment is by examinations and coursework assignments. These include:
• practical assessments
• seminar tasks
• written work

Teaching and assessment methods may vary from module to module.

Careers

Careers in Biomedical Science
97% of graduates from the school of Biomedical Science were employed or in further study within 6 months of graduating, with an average salary of £20,124*

There is a great demand for graduates in the biomedical and biomolecular sciences within the health services and industry, particularly leading or working as part of research teams, and many of our students choose this career path.

Engaging with Industry
Throughout your studies there will be many opportunities to engage with industry including:
• Site visits
• Guest lectures
• Employability Fairs
• Industrial placements
• Internships
• Advice from Industry

We develop our students' employability with:
• Access to our award winning careers service
• Year-long industrial placements
• Summer placements
• Internship opportunities
• Opportunities for part time work with JobsOC
• SOLAR - a student led outreach group teaching school children science
• Employability ambassador roles
• Opportunities to volunteer via Go Volunteer
• Opportunities to participate in clinical work shadowing
• Mock interviews
• CV interviews
• Careers clinics
• Assistance with applying to medicine/dentistry

When you graduate
Sectors employing bioscientists include:
• Pharmaceuticals
• Biotechnology
• Universities
• Management
• NHS
• Finance
• Patent Law
• Chemical
In addition, with a biosciences-related degree you could undertake scientific, medical, veterinary and agricultural research in universities and research institutes. Hospital and public health laboratories also employ a large number of bioscientists.

A large proportion of our graduates choose to take a further degree either a Medical, Masters, PhD or teaching qualification, before embarking on permanent employment.

**What our Alumni say**

"The opportunities afforded by doing the MSci gave me a fantastic taste of research and helped me realise it was the career path for me." Dr Alex Egan - Research Associate

"My degree allowed me to sample several different scientific areas, providing me with a broad understanding, before I specialised in an area I thoroughly enjoyed. This has lead me down the path of molecular biology and ultimately to my current research and development position working in the pharmaceutical industry." - Dr Lauren Drage - Development Scientist at GSK

"The School of Biomedical Sciences gave me the foundation needed for my PhD. From lab practicals, to the summer placement, to the final year project, I was provided with many opportunities to test first hand if research was the correct path for me." - Siobhan Lister - PhD student

**Companies that our graduates work for include:**

- GlaxoSmithKline Plc
- NHS
- Bupa
- Fujifilm Diosynth
- KPMG
- Universities worldwide
- Small and Large pharma/biotech

Find out more about the career options for **Biomedical and Biomolecular Sciences** from Prospects: The UK’s Official Careers Website.

*Destination of Leavers of Higher Education (DLHE) data 2015/16*

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**Careers and employability at Newcastle**

Newcastle University consistently has one of the best records for graduate employment in the UK.

96% of our 2017 UK-domiciled UG/PG graduates progressed to employment or further study within six months of graduating.

85.5% of our graduates are in graduate level employment or further study within six months of graduating.

We provide an extensive range of opportunities to all students through an initiative called ncl+. This enables you to develop personal, employability and enterprise skills and to give you the edge in the employment market after you graduate.

Our award-winning Careers Service is one of the largest and best in the country, and we have strong links with employers.

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**Fees & Funding**

**Tuition Fees (UK students)**

2020 entry:

£9,250

For programmes where you can spend a year on a work placement or studying abroad, you will receive a **significant fee reduction** for that year.

Some of our degrees involve **additional costs** which are not covered by your tuition fees.

**Please note:**

The maximum fee that we are permitted to charge for UK students is set by the UK government.

As a general principle, you should expect the tuition fee to increase in each subsequent academic year of your course, subject to government regulations on fee increases and in line with inflation.

See more information on all aspects of **student finance** relating to Newcastle University.

**Tuition Fees (EU students)**

2020 entry:

£9,250 You will pay the same tuition fees as UK students for the duration of your course.

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**What our graduates go on to do: employment and further study choices**

See what our recent graduates went on to do and view graduate destinations statistics. These statistics are based on what graduates were doing on a specific date, approximately six months after graduation. Take a look at the most recent data available for our graduates.
Tuition Fees (EU students)

For programmes where you can spend a year on a work placement or studying abroad, you will receive a significant fee reduction for that year.

Some of our degrees involve additional costs which are not covered by your tuition fees.

Please note:
As a general principle, you should expect the tuition fee to increase in each subsequent academic year of your course, subject to government regulations on fee increases and in line with inflation.

See more information on all aspects of student finance relating to Newcastle University.

Tuition Fees (International students)

2020 entry*:
£22,800

*Please note:
You will be charged tuition fees for each year of your degree programme (unless you are on a shorter exchange programme).
The tuition fee amount you will pay may increase slightly year on year as a result of inflation.
If you spend a year on placement or studying abroad as part of your degree you may pay a reduced fee for that year.
See more information on all aspects of student finance relating to Newcastle University.

Scholarships and Financial Support (International students)

Vice-Chancellor’s Excellence Scholarships
Vice-Chancellor’s Global Scholarships

We also offer International Family Discounts which are available for all international students with a close family member who has graduated from or is now studying at Newcastle University.

Newcastle University offers Sanctuary Scholarships for eligible undergraduate students (excludes MBBS and BDS students) from asylum-seeker and refugee backgrounds.

Some of our subject scholarships and sports scholarships are also available for international students.

Apply

Applying to Newcastle University through UCAS

To apply for undergraduate study at Newcastle you must use the online application system managed by the Universities and Colleges Admissions Service (UCAS).

UCAS codes for Newcastle University
• institution name - NEWC
• institution code - N21

UCAS buzzword
Ask your teacher or adviser from your school or college for the UCAS buzzword. You need the buzzword when you register on the Apply system. This makes it clear which school or college you are applying from.

All UK schools and colleges and a small number of EU and international establishments are registered with UCAS.

If you are applying independently, or are applying from a school or college which is not registered to manage applications, you will still use the Apply system. You will not need a buzzword.

Making your application

On the UCAS website you can also find out more about:
• application deadlines and other important dates
• offers and tracking your application

Application decisions and enquiries

Find out more about our admissions process and who to contact if you need help with your application.
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 the 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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Full details of the University’s terms and conditions, including reference to all relevant policies, procedures, regulations and information provision, are available at
www.ncl.ac.uk/pre-arrival/regulations

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