Welcome to the School of Life Sciences

We hope that you enjoy this introduction to the biochemistry courses offered at Nottingham and are delighted that you are considering studying with us. We offer a range of degrees in the molecular life sciences and this brochure has been designed to help you decide which course is right for you.

Modern biochemistry is a rapidly expanding field of study covering a wide range of topics, including biotechnology, molecular cell biology and molecular genetics. It underpins many of the current advances in life and health sciences and as a result there is a strong demand for our graduates. Our aim in all our degrees is to stimulate your interest and understanding, and to help you develop the research skills that will allow you to continue learning throughout your career. Our teachers are actively engaged in research so that they can guide and advise you on the latest developments and technology.

Our courses use a variety of teaching methods, including traditional lectures, practical work and tutorials as well as workshops. Most of our degrees include a final-year research project in which you will gain first-hand experience of research, whether it is laboratory-based, or uses bibliographic or bio-informatic methods of investigation.

Each student is allocated a personal tutor who will oversee your academic progress and give guidance about your general welfare. In addition to knowledge and understanding of molecular and cellular biology, these degree courses will also ensure that you develop the necessary skills in data interpretation, communication, IT and problem solving. We hope that you will consider Nottingham for your degree, and that you will visit us to see University Park Campus and the Queen’s Medical Centre for yourself.

Dr Fergus Doherty
Course Director
Why study biochemistry at Nottingham?

The School of Life Sciences encompasses the full range of biological and biomedical sciences. At the molecular end we offer a range of degrees in the areas of biochemistry and genetics.

About the school
We are largely located in the Medical School at the Queen’s Medical Centre and the University’s largest campus, University Park, which is connected to the Medical School by a footbridge.

The halls of residence on University Park Campus are 10-20 minutes’ walk from the Medical School, while the Jubilee Campus accommodation is 15-20 minutes’ walk away.

Facilities at Nottingham
The teaching facilities at Nottingham are situated on University Park Campus and in the Medical School. The Medical School provides:

- large, well-equipped lecture theatres with modern data and video projection facilities
- newly refurbished practical laboratories containing state-of-the-art equipment
- a large library with numerous computer rooms

Much of the teaching is supported by a Virtual Learning Environment. This allows teaching materials, self-tests and electronic feedback to be delivered directly to you and is accessible whenever and wherever you wish to study.

Having your teaching bases close together is convenient and also means you can take advantage of the excellent recreational facilities on University Park Campus, which include the Students’ Union, a sports centre and swimming pool and numerous catering outlets.

Excellence in teaching and research
Teaching at Nottingham is carried out by staff in the School of Life Sciences, which includes physiologists, pharmacologists and cell biologists, as well as biochemists and geneticists. This gives the school a breadth that may not be present elsewhere and allows staff and students to make those interdisciplinary links which are so important to modern science. In addition, our location in a medical school facilitates our interests in the biochemistry of human health and disease, which in turn, is reflected in our undergraduate final-year teaching.

Our high level of teaching is evident from the results achieved by our graduates. About 67% of our students obtain a first-class or upper-second-class degree, 30% a lower-second-class degree and less than 3% a third-class degree. Very few students fail to complete our degree courses at Nottingham, and we are proud of our excellent retention record.

Research is extremely important at Nottingham. The latest Research Excellence Framework showed that 95% of the research undertaken in the School of Life Sciences is internationally recognised. The school’s research interests allow it to provide high-quality research projects to final-year undergraduate students.

We are committed to supporting equality and diversity in our students and staff, and in April 2014 the School of Life Sciences was awarded the Athena Silver Swan award in recognition of this.

Extracurricular activities
Nottingham’s biochemistry students run the Biochemical Society and organise social events and outside speakers. The society provides a focus for students on the different biochemistry degree courses.

Culturing bone cells for research into arthritic pain.
Biochemistry is the study of life at the molecular level. We investigate the role of macromolecules, such as proteins and DNA, in cell function and the metabolic processes that sustain life. The remarkable advances made in biochemistry in the last few decades have helped us to appreciate that biochemistry lies at the root of all the life sciences. Biochemists research the molecular basis of disease, which now, and in the future, will lead to new treatments for human illness. Because biochemistry underpins so much of modern life science, biochemists work in the pharmaceutical, food and agricultural industries, as well as in hospitals, universities and research institutes.

### Degree courses

<table>
<thead>
<tr>
<th>Degree title</th>
<th>UCAS code</th>
<th>Duration</th>
<th>A levels</th>
<th>IB</th>
<th>Places</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSc Biochemistry</td>
<td>C700</td>
<td>3 years</td>
<td>AAB^</td>
<td>34*</td>
<td>100**</td>
</tr>
<tr>
<td>BSc Biochemistry and Molecular Medicine</td>
<td>C741</td>
<td>3 years</td>
<td>AAB^</td>
<td>34*</td>
<td>100**</td>
</tr>
<tr>
<td>BSc Biochemistry and Biological Chemistry</td>
<td>C720</td>
<td>3 years</td>
<td>AAB^</td>
<td>34*</td>
<td>100**</td>
</tr>
<tr>
<td>MSci Biochemistry and Biological Chemistry</td>
<td>C721</td>
<td>4 years</td>
<td>AAB^</td>
<td>34*</td>
<td>100**</td>
</tr>
<tr>
<td>BSc Biochemistry and Genetics</td>
<td>CC47</td>
<td>3 years</td>
<td>AAB^</td>
<td>34*</td>
<td>100**</td>
</tr>
<tr>
<td>MSci Biochemistry and Genetics</td>
<td>CC4R</td>
<td>4 years</td>
<td>AAB^</td>
<td>34*</td>
<td>100**</td>
</tr>
</tbody>
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^ Please see page 26 for detailed information regarding required/preferred subjects.
* 5/6 in chemistry and another science, in either order, at Higher Level.
** 100 places across all biochemistry degrees.

### Modular degrees

Almost all undergraduate degree programmes at the University are modular, which means you undertake modules of study with assessment at the end of each semester. Under the modular system, you will normally be required to take modules totalling 60 credits in each semester.

To graduate with a degree from The University of Nottingham you must take 360 credits of modules – 120 in each year of study. Each module is usually worth 10 or 20 credits – the higher the number of credits, the greater the amount of work on the module. The first year is a qualifying year, which means your degree classification will be determined by the work completed in the remaining years of your degree.

### Single honours

In your three or four years at Nottingham you will take a combination of compulsory and optional modules, mainly in subjects related to biochemistry, but also with a choice of subsidiary modules from outside the department, particularly in your first and second years.
BSc Biochemistry
BSc Biochemistry will provide you with a thorough understanding of modern biochemistry, including molecular cell biology, molecular genetics, biotechnology, metabolism and nutrition. This course is run by the Biochemistry Teaching Group (School of Life Sciences) using lectures, laboratory classes, seminars and tutorials. As a graduate, you will find a broad range of career opportunities open to you in medicine, biological research, pharmaceutical, agricultural and biotechnology industries.

Year one
During this introductory year, you will study the fundamental aspects of cell biology, biochemistry, physiology, genetics and cellular control together with essential chemistry and core skills in biochemistry. Practical classes are run in basic biochemistry, molecular genetics and physiology. The first year includes 20 credits of optional modules (20 credits) which can include biology, chemical calculations, chemistry and neuroscience or other modules including languages (timetable permitting).

Year one of this course is similar to that of C741, CC47/CC4R, therefore, transfer to one of those courses at the end of year one is possible.

Year two
Your studies will continue in greater depth and look in detail at the structure and function of both protein and genes. In addition, aspects of cell signaling (between and within cells) and regulation of metabolism will be covered. More detailed modules on the chemical aspects of biochemistry will be taken and transferable skills developed. More advanced laboratory classes will be taken in handling and analysing proteins as well as in basic molecular biology, including gene cloning. Optional modules are also available including chemistry, medical molecular genetics and pharmacology modules.

Year three
A major feature of the final year is an individual project which may be laboratory, bioinformatics or literature-based. You will take modules in advanced gene cloning, cancer and other diseases, protein folding and life cycles. Optional modules in cancer genetics, developmental biology, immunology and signal transduction will also be available.

Typical modules for C700

<table>
<thead>
<tr>
<th>Year one</th>
<th>Year two</th>
<th>Year three</th>
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<tbody>
<tr>
<td>• Core Skills in Biochemistry</td>
<td>• Genomic Detectives: A Virtual Molecular Analysis of Human Disease Intermediate Organic Chemistry</td>
<td>• Advanced Biochemistry</td>
</tr>
<tr>
<td>• Essential Chemistry (organic and inorganic)</td>
<td>• Intracellular and Transmembrane Transport</td>
<td>• Advanced Biochemistry of Cancer</td>
</tr>
<tr>
<td>• Essential Molecules, Genes and Cells (including laboratory classes)</td>
<td>• Introductory Signals and Metabolic Regulation</td>
<td>• Biochemistry of Disease</td>
</tr>
<tr>
<td>• Physiology (including laboratory classes)</td>
<td>• Laboratory Analysis of Proteins and Enzymes</td>
<td>• Biochemistry Research Project</td>
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<tr>
<td></td>
<td>• Lipid Metabolism and Oxidative Phosphorylation</td>
<td>• Cancer Genetics</td>
</tr>
<tr>
<td></td>
<td>• Principles and Analysis of Gene Function</td>
<td>• Chemical Biology and Enzymes</td>
</tr>
<tr>
<td></td>
<td>• Proteins: Structure and Function</td>
<td>• Molecular Microbiology and Infection</td>
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<tr>
<td></td>
<td>• Structure and Function of Macromolecules</td>
<td>• Signal Transduction</td>
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For more detailed module information, please visit the individual course listings at www.nottingham.ac.uk/ugstudy
School of Life Sciences
www.nottingham.ac.uk/life-sciences

BSc Biochemistry and Molecular Medicine
This course allows you to specialise in the medically related aspects of biochemistry while still gaining a good foundation in biochemistry. Biochemistry is important in nearly all aspects of medicine, from basic life processes to understanding changes occurring in disease and the development of new therapies. If the medical applications of biochemistry interest you then this degree course would be highly suitable.

Year one
Year one of this course is very similar to C700, CC47/CC4R, therefore, transfer to one of those courses at the end of year one is possible.

Year two
In this year, your studies will continue in greater depth and look in detail at the structure and function of both proteins and genes. In addition, you will cover aspects of molecular pharmacology, cell signalling and regulation of metabolism. Optional modules in immunobiology, medical molecular genetics and neuroscience will be available. You will develop your transferable skills and take advanced biochemistry laboratory classes.

Year three
A major feature of the third year is a medically linked individual project which may be laboratory, bioinformatics or literature-based. You will take modules in advanced gene cloning, cancer, neurodegenerative and other common diseases (for example, diabetes and heart disease), protein life cycles, and molecular diagnostics and therapeutics. Optional modules in cancer genetics, development and its disorders, immunology, medicinal chemistry, molecular microbiology and infections and signal transduction will be available.

Typical modules for C741

<table>
<thead>
<tr>
<th>Year one</th>
<th>Year two</th>
<th>Year three</th>
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</thead>
<tbody>
<tr>
<td>• Core Skills in Biochemistry</td>
<td>• Basic Molecular Pharmacology</td>
<td>• Advanced Biochemistry</td>
</tr>
<tr>
<td>• Essential Chemistry (organic and inorganic)</td>
<td>• Genomic Detectives: A Virtual Molecular Analysis of Human Disease</td>
<td>• Advanced Biochemistry of Cancer</td>
</tr>
<tr>
<td>• Essential Molecules, Genes and Cells (including laboratory classes)</td>
<td>• Intracellular and Transmembrane Transport</td>
<td>• Biochemistry of Disease</td>
</tr>
<tr>
<td>• Physiology (including laboratory classes)</td>
<td>• Introductory Signals and Metabolic Regulation</td>
<td>• Biochemistry Research Project</td>
</tr>
<tr>
<td></td>
<td>• Laboratory Analysis of Proteins and Enzymes</td>
<td>• Cellular and Molecular Immunology</td>
</tr>
<tr>
<td></td>
<td>• Medical Molecular Genetics</td>
<td>• Molecular Biology of Medicine</td>
</tr>
<tr>
<td></td>
<td>• Medical Pharmacology</td>
<td>• Molecular Diagnostics and Therapeutics</td>
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For more detailed module information, please visit the individual course listings at www.nottingham.ac.uk/ugstudy

“I'm a first-year PhD student, and my undergraduate project was excellent preparation for PhD study. The fourth year enabled me to tailor the course to my individual interests.”

Isobel Woodman
MSci Biochemistry and Biological Chemistry graduate

Students prepare and analyse samples of Alzheimer’s diseased brains.
BSc/MSci Biochemistry and Biological Chemistry

The teaching of these courses is split between the School of Life Sciences and the School of Chemistry. Both courses focus on the chemistry of biological molecules (for example, proteins and DNA) in order to understand how they function and is equally split between chemistry and biochemistry. The BSc course offers a broad range of career opportunities in the chemical, pharmaceutical and biotechnology industries. Both courses are accredited by the Royal Society of Chemistry and the MSci includes a year-long research project in year four. It is ideally suited for anyone considering a career in biochemistry or chemistry research.

Year one
You will study fundamental aspects of cell biology, biochemistry, genetics and cellular control together with essential chemistry, including organic, inorganic and physical chemistry. This will be supported by practical studies. Students with mathematics below A level grade B must take modules on chemical calculations. Students with grade B or above in A level grade B must take modules in chemistry or mathematics.

Year two
Your studies will continue in greater depth, covering structures of amino acids and carbohydrates, protein and gene structure, cell signalling and biological inorganic chemistry. You will take advanced laboratory classes in chemistry as well as in protein analysis and basic gene cloning.

Year three
You will study advanced gene cloning, nucleic acids and medicinal chemistry. In addition, you will develop transferable skills such as presenting, interpreting and critiquing scientific data. Your studies will be supported by advanced laboratory work and literature investigations.

Year four (MSci students only)
A substantial feature of the MSci fourth year will be an extended individual project in biochemistry or chemistry, which may be either laboratory, bioinformatics or literature-based and assessed by dissertation, viva and oral presentation.

Typical modules for CC47 and CC4R

<table>
<thead>
<tr>
<th>Year one</th>
<th>Year two</th>
<th>Year three</th>
<th>Year four (MSci only)</th>
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</thead>
<tbody>
<tr>
<td>• Chemical Calculations</td>
<td>• Intermediate Organic Chemistry</td>
<td>• Advanced Biochemistry Lab Work</td>
<td>• Cellular and Molecular Immunology</td>
</tr>
<tr>
<td>• Essential Molecules, Genes and Cells (including laboratory classes)</td>
<td>• Intermediate Organic Spectroscopy and Stereochemistry</td>
<td>• Advanced Lab Techniques (Chemistry)</td>
<td>• Enterprise for Chemists</td>
</tr>
<tr>
<td>• Fundamentals of Inorganic Chemistry</td>
<td>• Intermediate Physical Chemistry</td>
<td>• Biochemistry of Disease</td>
<td>• Research Project</td>
</tr>
<tr>
<td>• Fundamentals of Organic Chemistry</td>
<td>• Introductory Signals and Metabolic Regulation</td>
<td>• Chemical Biology and Enzymes</td>
<td>• Signal Transduction</td>
</tr>
<tr>
<td>• Fundamentals of Physical Chemistry</td>
<td>• Laboratory Analysis of Proteins and Enzymes</td>
<td>• Data Analysis</td>
<td></td>
</tr>
<tr>
<td>• Introductory Chemistry Lab Work</td>
<td>• Principles and Analysis of Gene Function</td>
<td>• Molecular Microbiology and Infections</td>
<td></td>
</tr>
<tr>
<td>• Physiology (including laboratory classes)</td>
<td>• Protein Structure and Function</td>
<td>• Protein Folding and Biospectroscopy</td>
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</tbody>
</table>

For more detailed module information, please visit the individual course listings at www.nottingham.ac.uk/ugstudy
How will I study?

Teaching methods
Your teaching will take place in a variety of different formats. Lectures are an important part of the biochemistry and genetics courses and are held in modern, well-designed lecture theatres equipped with audiovisual aids. In addition, there are small-group workshops and seminars, plus computer-aided learning, and a dedicated internet-based resource.

Tutorials
All students are allocated a personal tutor for the whole of the degree programme. They will regularly meet you as part of a small group to develop presentation and writing skills, as well as discuss any problems with the course content. In addition, you will have individual meetings with your tutors to monitor your progress and wellbeing.

Laboratory experience
Biochemistry is a practical, laboratory-based subject, and all our courses include a strong practical element consisting of laboratory classes in biochemistry (and chemistry for biochemistry and biological chemistry students). Our laboratories are safe and modern and we make considerable investments in our laboratory equipment.

Projects
All students will carry out an individual research project in their final year of study, except for BSc Biochemistry and Biological Chemistry students, who will undertake advanced laboratory work in their final year. Most projects are laboratory-based but non-laboratory-based projects are also available.

Research projects that we offer cover a wide variety of fascinating topics which reflect the research interests of our staff and include cancer, neurodegenerative disease (Alzheimer’s and Parkinson’s diseases), obesity and heart disease.

Key Information Sets
Key Information Sets (KIS) are comparable sets of information about full or part-time undergraduate courses and are designed to meet the information needs of prospective students. All KIS data is published on the Unistats website: www.unistats.com

For Nottingham’s KIS data, please see individual course entries at: www.nottingham.ac.uk/ugstudy

School of Life Sciences
www.nottingham.ac.uk/life-sciences
How will I be assessed?

How will I be assessed?
Our degree programmes are modular, which means you undertake modules of study with assessment at the end of each semester.

The teaching year
The teaching year is divided into two semesters. The first semester lasts for 14 weeks, with 12 weeks for teaching and revision and two weeks for assessment. The second semester follows the same pattern, but there is an additional two weeks at the end to complete the assessment process and to enable returning students to discuss their results with tutors and begin to plan the next session’s work.

Although the teaching year is divided into two semesters for organisational purposes, this is fitted into the traditional pattern of three terms: one before Christmas, one between Christmas and Easter, and one after Easter.

Assessment methods
Assessment is by a combination of end-of-semester examinations (so twice a year), coursework (for example, laboratory reports and project reports) and presentations. You must pass the first (qualifying) year to progress to the second year, but only second and subsequent years contribute to your final degree.

Where a module lasts for one semester, assessment is undertaken at the end of that semester. Where a module fills two semesters, assessment is at the end of the second semester, although your progress will be measured throughout the year.

Your final degree classification
Your second and third-year results respectively count for 30% and 70% of your final, overall grade. The first year is a qualifying year, which means you must pass this year to progress to the second year, but your mark will not contribute to your degree classification. On the four-year MSci degrees, marks are weighted at 20% for the second year and 40% for the third and fourth years. MSci students are required to achieve a mark of at least 50% for year three in order to progress into year four of the MSci course.

“The course is a combination of lectures and practicals, so you will be learning by doing, which makes understanding easier on the theory side. Lecturers also regularly update their notes to make sure we catch up on the trends of latest research.”

Amy Chen
BSc Biochemistry and Genetics
Career and employment prospects

As a biochemistry graduate, you will find a wide variety of career opportunities open to you, from working in a research laboratory or selling specialised medical/biochemical equipment, to becoming an accountant.

Graduate career destinations

Many of our graduates enter the pharmaceutical, biotechnology and food industries as laboratory scientists in research and development and in non-laboratory positions. Some of our graduates train to be clinical scientists with the NHS or in forensics or public health. Others enter scientific publishing or teaching, and graduate entry medical courses are also popular.

In 2014, 88% of first-degree graduates in the school who were available for employment had secured work or further study within six months of graduation. The average starting salary was £18,649 with the highest being £30,000.*

* Known destinations of full-time home and EU first-degree graduates, 2013/14.

Postgraduate degrees

Approximately 55% of our graduates carry on their training to complete a higher degree by research (a Doctor of Philosophy, known as a PhD) or a year-long taught masters degree. These may be completed at Nottingham or at another university. The fact that many of our graduates are able to find PhD studentships elsewhere indicates how well other universities regard our courses.

After completing their PhD studies, many of these students will carry on with a research career in universities, research institutes and industry.

The University's Careers and Employability Service

Our Careers and Employability Service, which is based on University Park Campus, offers an extensive range of careers-oriented services, including CV-writing sessions, interview advice, presentations by major employers and general career advice. As a University of Nottingham graduate, you will receive lifelong support from the service. This means that you can ask a careers adviser to look over your job application by email or Skype, or in person, and you can also access a database of graduate vacancies. For more information see www.nottingham.ac.uk/careers

The Nottingham Advantage Award

The University's Advantage Award is a programme of activities developed to recognise and reward extracurricular responsibilities. It allows you to gain recognition for participating in a wide range of activities accredited by the University and delivered by top graduate employers, professional services and members of staff of the University. It also shows employers that you have gone above and beyond your degree and gained valuable transferable skills. For further information, please visit www.nottingham.ac.uk/careers/advantage

Placement opportunities

We encourage you to gain work experience during your studies, whether it be a six to eight-week placement in a university laboratory during the summer vacation or a year out of your studies to work in an industrial setting. A place on any of these schemes is not guaranteed as they are competitive and run on a national basis; however, Nottingham biochemistry students have secured a number of these opportunities.

Summer vacation placements

Students at Nottingham can apply for funding from various bodies to undertake a research project in the summer vacation. These projects can be based at Nottingham, at other universities or at research institutes. The funding (from the Wellcome Trust, Nuffield Foundation and the Biochemical Society) is highly competitive but Nottingham life sciences students are awarded a number of these scholarships every year.

We also have a Biotechnology and Biological Sciences Research Council bursary for students to carry out a summer research project in the school. In addition, tutors at Nottingham offer projects every year on a variety of different topics.

Students' experiences

Biochemical Society Summer Scholarship at the University of Sussex

“I had been interested by the second-year biochemistry lectures on translation initiation and so my tutor at Nottingham put me in touch with a group at Sussex University who work in this area. After looking over my CV and conducting a telephone interview, they agreed to take me on for eight weeks over the summer, providing they could obtain sponsorship for my project. The head of the lab at Sussex applied to various organisations and eventually managed to get sponsorship from the Biochemical Society.

I really enjoyed the placement – it gave me a feel for what working in a lab is really like, and allowed me to become confident with a variety of techniques. Not only was it useful in terms of helping me to make career choices, but it also prepared me well for the third-year lab project.”

Biochemistry and genetics student

Summer Studentship in the School of Chemistry at The University of Nottingham

“During my third year, the idea of a summer project in the chemistry department came up in discussion with my personal tutor. He suggested that it would give me invaluable experience and also a head start over the other students when it came to final-year projects. I worked for 10 weeks over the summer and was paid £125 a week. Not much, but it did cover my living expenses. The chemistry department funded my work.

I had to sort out my own accommodation; however, that was simple as I had already rented a house for my fourth year so I stayed there over the summer. The work I was doing was very interesting to me, though it was very difficult at first. I was left to decide where I wanted the research to go, but I could always ask for ideas from anyone in the lab. The learning curve was very steep, but I did learn a lot, both about practical techniques and how to plan research. Overall my experience over the summer has proved enjoyable and invaluable to me, as it has given me a lot to talk about at PhD interviews. It also meant that I knew a lot of practical techniques when it came to the start of my final-year research project, which has been useful.”

Biochemistry and biological chemistry student

The University of Nottingham is consistently named as one of the most targeted universities by Britain’s leading graduate employers.

The Graduate Market in 2013, 2014 and 2015, High Fliers Research
“Picking a dissertation module this year was absolutely fabulous because it enabled me to look into something that scientists themselves are unsure of – the implications of a certain drug.”

Yanis Skerstins/BSc Biochemistry and Molecular Medicine

Nottingham is a very research-active university. Staff from the Schools of Life Sciences and Chemistry are involved in exciting research that draws in extensive funding from research councils, charities (supporting biomedical research) and industry. As an undergraduate student, you will have the opportunity to be involved in the research activities of these schools when you work on your final-year project.

Below are some of the research interests of the staff in the School of Life Sciences, which should give you an idea of the kind of research projects available to final-year students.

**Cell signalling**
This is how cells signal to one another and how that signal is ‘transduced’ in the cell to alter gene expression and cell proliferation. In particular, it considers how growth is regulated through the action of kinase cascades, how ‘programmed cell death’ (apoptosis) is controlled, how cells signal through the cytoskeleton/extracellular matrix and how these signals are disrupted in cancer.

**Lipid (fat) metabolism, transport and disease**
This area considers how lipids are transported around the body and metabolised and how this is affected by diet, including the regulation of expression of genes involved in lipid metabolism. Human diseases involving lipid transport and metabolism, such as atherosclerosis and diabetes, are also investigated here.

**Intracellular proteolysis and neurodegenerative disease**
Research focuses on the degradation of proteins in the cell by the ubiquitin-proteasome pathway, a complex pathway that controls the concentration of many key proteins in cells. It also looks at the involvement of the ubiquitin-proteasome pathway in neurodegenerative diseases such as Parkinson’s and Alzheimer’s.

**Mechanisms of DNA replication, repair and mobilisation**
The transactions that DNA performs during replication, when repair of DNA damage is required and when DNA sequences are moved around and into/out of genomes (transposition), are very complex. Some of the proteins involved are being studied in bacteria, archaea and humans to elucidate the mechanisms involved.

**Membrane biochemistry and macromolecular interactions**
Research focuses on the interactions of molecules (proteins, nucleic acids) with each other and with biological structures such as membranes. A variety of physical and biochemical techniques are used including solid state nuclear magnetic resonance, which enable us, for example, to gain a better understanding of how antibiotics inhibit cell wall biosynthesis. We also look at the structure and mechanisms of ATP-dependent membrane transporters, which are important in many aspects of drug resistance.

Scan the code to watch this video on your smartphone.
You’ve read lots about the degree programme you’re interested in, now it’s time to explore life outside the lecture theatre. There’s so much for you to get involved in and explore at the University and around the city. We are proud to be one of the leading universities for student experience in the UK*, which will ensure that you have a university experience you’ll never forget.

Your University of Nottingham – at home and around the world

We are proud of our stunning campuses and are continually investing in our grounds, buildings and amenities to ensure that you only have the best surroundings in which to live and study. Our main UK campuses have a mix of state-of-the-art facilities, including sports centres, places to eat and excellent learning facilities on every campus. We’ve made getting from campus to campus as easy as possible and students can benefit from our free inter-campus Hopper Bus, so you’re never far away from the striking architecture and innovative technology of Jubilee Campus, the rolling parkland and period buildings at University Park, or the cutting-edge features of Sutton Bonington.

The University of Nottingham is Britain’s global university with campuses in the UK, China and Malaysia. We also have links with more than 300 universities in over 40 countries, adding a truly global flavour to your degree and giving you the chance to explore the world. Find out more: www.nottingham.ac.uk/about/campuses

Your new home from home

At Nottingham we offer a range of different accommodation options, rooms are available as single or shared, en suite or shared bathroom, all the way through to studio flats, and vary from self-catered to fully catered (19 meals per week). We also offer a guarantee of University accommodation for one year to all new full-time undergraduate students, subject to the following conditions: you firmly accept your course place at Nottingham, accept your offer of accommodation by the deadline given in your offer letter, and have an unconditional status no later than 31 August in the year you intend to begin your studies. If you are a new, full-time undergraduate student who is classified as international for fee purposes, this guarantee applies for three years**. For more information, including a breakdown of pricing, see www.nottingham.ac.uk/accommodation

Your opportunity to study abroad

As a University of Nottingham student, you will be able to apply for a variety of study abroad options. Whether studying at a partner institution or undertaking a work experience placement, spending time abroad is a fantastic opportunity to broaden your horizons, experience different cultures, meet new people and develop skills that will prove invaluable in the future and look good on your CV.

If you do decide to apply to study abroad, the University will offer support from the application stage right through to your return to the UK, with advice on everything from immigration to possible sources of financial support. Find out more: www.nottingham.ac.uk/studyabroad

Your support network

Throughout your university journey there will be numerous people on hand to support you, including tutors and dedicated staff who will be able to advise you on various aspects of life as a student. We have Student Services Centres on all three of our UK campuses, which provide a range of support, information and specialist services to enhance your student experience. This support includes:

• Academic Support – can provide practical advice on areas of academic study; the service also provides specialist academic support for students with dyslexia, dyspraxia and other specific learning difficulties
• Disability Support – coordinates support and access arrangements for students with a disability or long-term medical condition
• Financial Support – provides information on the sources of finance available from government agencies and the University itself, and gives advice about financial matters
• Student Services – also advise on issues ranging from childcare, counselling and health to international student support, chaplaincy and faith support, as well as offering advice on paying your tuition and accommodation fees

Whatever you may need support with, they will either be able to help or point you in the direction of someone who can. Find out more: www.nottingham.ac.uk/studentservices

** Providing you submit your returners’ application in line with the requirements of accommodation providers.
Getting involved in your Students’ Union
As soon as you start at The University of Nottingham, you are automatically enrolled as a member of our Students’ Union, which is considered to be one of the best in the country. There are hundreds of activities that you could be part of, providing you with the perfect opportunity to take up a new hobby or pursue existing interests. Choose from over 200 student-run societies, covering all interests and abilities, as well as local and national volunteering projects, to which you can commit as much or as little time as you wish.

Our Students’ Union is home to a number of award-winning student-run media groups, which give you the chance to gain practical work experience both behind the scenes or centre stage as a presenter, actor or journalist. The Nottingham New Theatre, Impact magazine, Nottingham Student Television (NSTV) and University Radio Nottingham (URN) have all been recognised as the best in their field, winning a clutch of awards for outstanding achievements.

However you decide to become involved in the Union, you can be sure you will make new friends and learn new skills, all while having a lot of fun! Find out more: www.su.nottingham.ac.uk

Sports
We offer sport at all levels and an excellent all-inclusive student membership offer, so whether you enjoy sport as a hobby or are an elite athlete we will have just what you need. We have over 70 sports clubs, which means we have the 2nd highest number of sports clubs of any UK university. If you’re not interested in joining a team but want to stay fit, we have sports centres on all of our main UK campuses. Find out more: www.nottingham.ac.uk/sport

Exploring your new city
With Nottingham city centre just a 10-minute bus ride away from University Park Campus, our students are always close to the action. Buses run through campus regularly and many run late-night services too, which is handy if you’re a night owl.

For music lovers, you can take your pick from the world-famous Rock City, Capital FM Arena or one of the smaller gig venues for a more intimate live show. Nottingham is rich in performance venues, with comedy clubs and theatres catering for lovers of drama, musicals, ballet and panto. We are very proud of our sporting heritage, and with football clubs Nottingham Forest and Notts County in the city, as well as Trent Bridge cricket ground and the National Ice Centre on your doorstep, you might just become a sports fan if you’re not one already.

History and culture can be found in all corners of the city, with Nottingham Castle, Nottingham Contemporary arts centre, the Galleries of Justice Museum, Nottingham Lakeside Arts – the University’s public arts centre located on our University Park Campus, arthouse cinemas and three of the world’s oldest pubs all providing points of interest. If you enjoy shopping, Nottingham is perfect for you; independent boutiques and vintage shops in the bohemian area of Hockley mix with high street names in our large shopping centres to make Nottingham a veritable shopping haven.

Find out more: www.nottingham.ac.uk/nottinghamlife

Download our city guide: www.nottingham.ac.uk/go/cityguide
Applying for a place

**We are looking for students who have the ability and motivation to benefit from our courses, and who will make a valued contribution to the department and the University. Candidates for full-time admission are considered on the basis of their Universities and Colleges Admissions Service (UCAS) form. For more information on how to make your application stand out, have a look at our online prospectus: www.nottingham.ac.uk/ugstudy/applying**

**Application process**
All applications for an undergraduate place to study at The University of Nottingham (including applications by overseas students) must be made through UCAS. Applications should be made online at www.ucas.com. Candidates will be notified of decisions through UCAS Track at www.ucas.com.

**Applying with achieved A level grades**
If you apply to us having already completed your A levels, your application will be considered in the early stage will help us provide the right support and advice. If you have a disability, we advise you to offer you.

- **Our minimum academic requirements**
  - GCSEs (or equivalent): all biochemistry courses require mathematics at grade C or above (if not taken at A or AS level).
  - A levels (or equivalent): all biochemistry courses require three A levels including chemistry and one other science subject (biology preferred for BSc Biochemistry, BSc Biochemistry and Molecular Medicine and BSc/MSci Biochemistry and Genetics). We do not accept general studies or critical thinking.
  - Typical A level grades AAB – for details, please see www.nottingham.ac.uk/ugstudy/courses and use the A-Z search facility.

**Alternative qualifications**
In this brochure you will find our A level entry requirements but we accept a much broader range of qualifications.

- These include:
  - Access to HE Diploma
  - Advanced Diploma
  - Cambridge Pre-U
  - International Baccalaureate
  - Irish Leaving Certificate
  - Scottish Advanced Highers
  - Welsh Baccalaureate Advanced Diploma

This list is not exhaustive; we will consider applicants with other qualifications on an individual basis. The entry requirements for alternative qualifications can be quite specific; for example you may need to take certain modules and achieve a specified grade in those modules. Please contact us to discuss the transferability of your qualification.

**English language requirements**
Our English language requirements are IELTS 6.5 (no less than 6.0 in any element).

- For more information and a list of the alternative English language requirements we accept, please see www.nottingham.ac.uk/go/alternaterequirements

**Science Foundation Programme**
This programme provides an alternative entry route onto our degree programmes for those whose school-leaving qualifications do not meet our current admission requirements. Applications from mature students or students holding ‘non-standard’ qualifications and/or relevant experience are encouraged.

Students can automatically progress from the foundation stage to year one of one of our biochemistry degrees (except C720/C721) providing they have taken the relevant pathway modules and passed them to the required standard. All foundation programme teaching is carried out on University Park Campus by academic staff from the Faculty of Science. For more information, see www.nottingham.ac.uk/foundationcourses

**Flexible admissions policy**
In recognition of our applicants’ varied experience and educational pathways, we employ a flexible admissions policy. If we judge that your situation has adversely affected your achievement, then we will consider this when assessing your academic potential. If you wish to mention information about your experiences in your personal statement, then you should ask the teacher or tutor writing your reference to confirm what you have written. We may ask for further evidence and may consider a range of factors. For more information, please see www.nottingham.ac.uk/go/admissionspolicies

**Disability**
The Disability Liaison Officer (DLO) for the School of Life Sciences is Mrs Gail Gomez. She has experience in helping many students with dyslexia, physical or psychological conditions to find university support that allows them to continue with their academic studies and university life.

You are encouraged to make the University aware of your individual requirements as early as possible. You can do this by specifying a disability code on your UCAS application. You will then be sent a letter in confidence by the school’s DLO offering any assistance or information that you may need. Letting us know what you might need at an early stage will help us provide the right support for you. If you have a disability, we advise you to visit the University before applying.

The University’s Disability Statement, which lists services, facilities and opportunities available throughout the University, can be viewed at www.nottingham.ac.uk/disability

**Mature applicants**
We encourage applications from mature students (which means all those aged 21 or over when the course begins). You should apply through UCAS and while we accept a range of qualifications, you should check our specific requirements on UCAS course entry profiles. If in doubt, please contact the admissions tutor, who will be happy to answer any specific queries you have. Please email your questions to life-sciences-ug@nottingham.ac.uk

For more information please see www.nottingham.ac.uk/mature
International students
We welcome applications from international students and have students from many parts of the world studying with us at undergraduate and postgraduate level. All international candidates for undergraduate courses should apply through UCAS.

We will accept European qualifications such as a baccalaureate, including the European or International Baccalaureate.

All biochemistry courses require 5/6 in chemistry and another science, in either order, at Higher Level.

Typical overall IB score 34. Applicants with other qualifications should contact us prior to making an application using the details on page 30.

The University’s International Office offers guidance and advice on matters such as visa and immigration regulations, working and living in the UK, entry requirements and preparing for coming to Nottingham – and arranges a Welcome Programme for new international students each September. If you would like to visit the University and are unable to attend an open day, the International Office will be happy to arrange an individual visit for you. For further information please visit www.nottingham.ac.uk/international

Preparing to study in English – academic English preparation and support
The University of Nottingham Centre for English Language Education (CELE) offers high-quality academic English and study skills (presessional) programmes to prepare you to study your degree in English. Our programmes are designed to give international students excellent preparation for their academic studies and are taught by experienced, professional tutors.

CELE provides a range of programmes throughout the year, including five-week subject-specific courses (in some subjects) and a four-week course in September for students with unconditional offers, with a focus on academic study skills.

You can continue to benefit from academic English support with free classes and one-to-one consultations throughout your study (insessional programmes).

For more information about CELE, please visit www.nottingham.ac.uk/cele

Deferred entry
Applicants who wish to defer their entry by a year will not be at a disadvantage. Please tell us something about your plans for your gap year in your UCAS personal statement.

Equal opportunities policy
The University aims to create the conditions whereby students and staff are treated solely on the basis of their merits, abilities and potential, regardless of gender, race, colour, nationality, ethnic or national origin, age, socio-economic background, disability, religious or political beliefs, trade union membership, family circumstances, sexual orientation or other irrelevant distinction.

For tips and advice at every step of your application journey, visit our undergraduate applicants’ area: www.nottingham.ac.uk/ugapplicants

PhD students working in the lab. The fourth-year research project in the MSci degree is much more intensive, being full-time laboratory research-based for half the year.

What bursaries are available?
Although bursary figures for 2016/17 are yet to be finalised, the University will continue to offer a generous package of bursary support to students from lower income households. These are in addition to any support you may receive from the government. For more information please see www.nottingham.ac.uk/fees

How much are the fees?
Like many universities in England, Nottingham charges full-time UK and EU students an annual tuition fee of £9,000. However, you will not have to pay your fees while studying – the government will lend eligible students the money, which you will start to pay back once you have left university and are earning at least £21,000. For the latest information, please see www.nottingham.ac.uk/fees

Fees for students from outside the EU vary from subject to subject. For more information, please see the ‘New international students’ section on www.nottingham.ac.uk/fees

What is the difference between the BSc and the MSci degrees?
The four-year MSci degree differs from the three-year BSc degree in its specialised training in research skills in the fourth year, particularly the intensive full-time project which occupies half of the year. The BSc degree also includes a project, but this is taken along with lecture modules and would normally involve two days’ work a week.

While the MSci degree is designed for those who intend to start biological research on graduation, many of our BSc students currently go straight into a PhD course by research after their three years, and we expect that this will continue.

How much practical work does the course entail?
You will take some lab-based practical sessions and computer-based informatics practical sessions as part of first and second-year modules. During the final year you will undertake a research project.

Most students choose to undertake a lab-based research project. This involves working in a research lab for two days a week in the autumn, when you will be supervised by the lecturer running your project and receive lab training from...
Open days
If you’re considering applying to The University of Nottingham we recommend that you try to attend one of the University-wide open days, which are held in June and September each year and attract around 30,000 visitors. Find out more: www.nottingham.ac.uk/opendays

Mini open days
Mini open days are much smaller than the main open days but offer the same opportunities to attend various talks and tours as well as speak to current students and academics. Find out more: www.nottingham.ac.uk/go/miniopendays or call +44 (0)115 951 5559.

Virtual open day
If you can’t attend one of our open days in person, or would like to explore our campuses before visiting, take a look at our virtual open day: www.nottingham.ac.uk/virtualnottingham

UCAS visit days
Once you’ve been offered a place at Nottingham, you may be invited to attend a UCAS visit day, which is an opportunity for you to visit the school and to find out more about your chosen course. You will also be given a short tour of the campus by current students.

Other visits
If you wish to make an informal visit to the University prior to applying here, you are welcome to do so, but you should contact us in advance if you wish to visit the school or speak to an admissions tutor, and we will do our best to oblige.

Contact us
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The University of Nottingham
University Park
Nottingham
NG7 2RD

t: +44 (0)115 951 3300
f: +44 (0)115 951 3251
e: life-sciences-ug@nottingham.ac.uk
w: www.nottingham.ac.uk/life-sciences

For international student enquiries, please contact:
The International Office
t: +44 (0)115 951 5247
f: +44 (0)115 951 5155
e: international-office@nottingham.ac.uk
w: www.nottingham.ac.uk/international

You can also connect with fellow applicants and current students on our applicants’ Facebook and Twitter pages:

UoNAplicants

@UoNAplicants

STUDY WHAT YOU LOVE

Your passion can be your success. Study what you love.

#STUDYWHATYOULOVE

Your desire to treat and care is invaluable to society. We’ll help you fulfil your dreams and develop the skills and knowledge you’ll need to change lives across the globe.

Medicine and Health Sciences
www.nottingham.ac.uk/studywhatyoulove