University of Birmingham

Natural Sciences MSci (Hons)

The Natural Sciences programme is designed for students who like to explore different ways of thinking, who prefer to take a broader view on science, and who aim to become graduates with interdisciplinary skills, an asset that employers increasingly value. You will follow two Major subjects throughout the course, complemented by a Minor that may vary from year to year. Capping the course is a Masters year that focuses on research training.

Study here and find out why the University of Birmingham was awarded The Times and The Sunday Times University of the Year 2013-14 (http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx)

Course fact file

UCAS code: CF13

Duration: 4 years

Places Available: 25

Applications in 2012: 209

Typical Offer: A*AA (**More detailed entry requirements and the international qualifications accepted can be found in the course details (?OpenSection=EntryRequirements)**)

Start date: September

Contact

Admissions Tutor: Dr Klaus Fütterer
Telephone enquiries: +44 (0)121 414 6162
Email: **naturalsciences-admissions@bham.ac.uk (mailto:naturalsciences-admissions@bham.ac.uk)**

Details

More than ever, science today transcends the traditional boundaries between physics, chemistry, the biological sciences and mathematics. Employers are looking for graduates with a broad experience and expertise in complementary disciplines, along with excellent transferable skills in communication, IT and teamwork. The Natural Sciences MSci programme is for students whose interests encompass more than one discipline of science.

The Natural Sciences programme is led by the School of Biosciences, but draws on the academic expertise of several other Schools in the Colleges of Life and Environmental Sciences and of Engineering and Physical Sciences. In combining two Major subjects, you can choose from the following disciplines:

- Biochemistry
- Biology
- Chemistry
- Earth Sciences
- Geography
- Mathematics
- Physics
- Psychology
- Sport and Exercise Science

Because Natural Science students study in many different parts of the campus, they enjoy the benefit of a Base Room in the central Aston Webb Building. Here they meet up with their peers studying different major combinations and with Natural Sciences students from other year groups.

The course

You will study two Major subjects throughout the course, and complement these with Minor subjects. In the second year, the minor subjects are not compulsory, and, if you wish, the corresponding credits can be allocated to studying additional modules in the Major subjects. Both Majors are studied to degree level in that all modules of corresponding single honours courses are available to Natural Sciences students, limited only by timetable compatibility. The programme encourages you to pursue topics at the interface between those subjects. In the third year, the Natural Sciences MSci programme provides the flexibility to retain breadth or to opt for more specialised study in one of the two Major subjects. You are also supported by a tutor for each of the Major subjects.

The Major subjects

Major subject combinations offered

- **Biology** can be taken with Biochemistry, Earth Sciences, Geography, Mathematics, Physics or Psychology
- **Biochemistry** can be taken with Biology, Chemistry, Earth Sciences, Mathematics or Sport and Exercise Sciences
- **Chemistry** can be taken with Biochemistry, Earth Sciences, Geography, Mathematics, Physics or Psychology
- **Earth Sciences** can be taken with Biochemistry, Biology, Chemistry, Geography, Physics, Psychology or Sport and Exercise Sciences
- **Geography** can be taken with Biology, Chemistry, Earth Sciences, Mathematics or Sport and Exercise Sciences
- **Mathematics** can be taken with Biochemistry, Biology, Chemistry, Geography, Psychology or Sport and Exercise Sciences
- **Physics** can be taken with Biology, Chemistry, Earth Sciences or Sport and Exercise Sciences
- **Psychology** can be taken with Biology, Chemistry, Earth Sciences, Mathematics or Sport and Exercise Sciences
- **Sport and Exercise Sciences** can be taken with Biochemistry, Earth Sciences, Geography, Mathematics, Physics or Psychology

Due to incompatible timetabling, the following combinations of Major subjects are not available:

- Biochemistry/with Geography or Physics or Psychology
- Biology/with Chemistry or Sport and Exercise Sciences
- Physics/Geography
- Psychology/Physics
- Earth Sciences/Mathematics
- Geography/Psychology
- Physics/Mathematics
- Chemistry/Sports and Exercise Sciences

We have a variety of Minor subjects available. Popular selections in recent years have included Psychology, Pharmacology, or Sports Sciences. You may also choose a module from one of the other Majors as a Minor subject or a modern language (e.g. French, German, Spanish and others).

Why study this course

The structure of the Natural Sciences course at Birmingham is unique in combining two major subjects in the natural sciences with a high level of built-in flexibility to compose an individual programme of study. In many ways, the course becomes what you want it to be. In this course in particular, learning is a conversation, not simply a lecture. We welcome students who are keen to be challenged and encourage them to think independently. We nurture natural curiosity and enable original ideas to flourish through dialogue between different disciplines.

Research and teaching

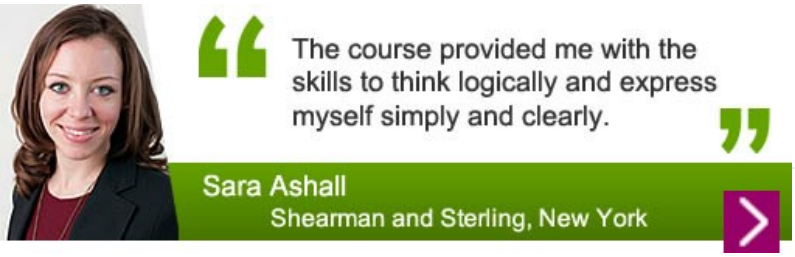
Natural Sciences students benefit from world-leading research at Birmingham in a wide range of disciplines. Research inspires teaching, in particular in the final year, and impacts on the spectrum of choices for projects in the final year. Most academic staff work concurrently as teachers and researchers. The passion that drives our research keeps our programmes up-to-date, stimulating and relevant for tomorrow's graduates. From world-class cancer research to the development of a new generation of fuels, our academic expertise continues to address today's key national and global challenges. Natural Sciences students have the dual opportunity of witnessing these exciting developments from up-close as well as leaving their own mark, in particular in the 4-year MSci course, where the Masters year includes an extended laboratory-based research project.

Dr Dirk Hermans, School of Mathematics

"Combining Mathematics with other Natural Science disciplines makes a lot of sense because maths underpins all areas of science. Research has shown that 'thinking mathematically' promotes success in a wide range of careers."

Modules

Transcend the traditional boundaries of science



(/schools/biosciences/our-students/ashall-sara.aspx)

Do you have an interest in science but are keen on more than one favourite scientific discipline? Perhaps you don't want to specialise too soon, or you want to give yourself time for your interests to mature.

Alastair Strain, Professor of Biochemistry, Natural Sciences Programme Director

"In the modern world, the chance to combine more than one of the Natural Sciences is a golden opportunity to exploit the exciting developments at the interface between scientific disciplines."

Our **Natural Sciences honours course** is carefully designed to give you the flexibility to choose a programme, which matches your interests, while at the same time allowing you to study the individual subject matter in degree-level depth.

First year

You take two Major subjects, plus a Minor. An addition, you will take skills modules in IT, Communications and Statistics. Studying two Major subjects to degree level becomes manageable through specifically designed pathways through the subjects, enabling you to focus on core topics of each subject, and studying those to the same depth as single honours students.

Second year

You will develop your Major studies further and can either continue with the same Minor or begin a different one. Alternatively, you can allocate the credits of the Minor subject to studying an additional module of your Major subjects. You also have flexibility in changing the weighting between the two Major subjects.

Third year

In your third year have great flexibility in setting the balance between your Major subjects. You can elect to either focus fully on one subject, or to pursue both with flexible weighting.

Final (Masters) year

A core ingredient of the Masters year is an extended research project that will take 50% of your time. You will elect to do this project in one of your Major subjects, which at present includes Biology, Biochemistry, Earth Sciences, Environmental Science/Geogrpaphy, Chemistry and Physics as possible choices. The training is complemented with a range of modules that include compulsory participation in research seminars, technique-oriented classes and, if appropriate and additional final-year taught module.

James Dacey, Natural Sciences student

"I didn't want to take a conventional degree course where you are committed to one subject throughout the 3 years. I wanted a more open style of degree which would give me the room to develop my interests over time. In this respect Natural Sciences has the advantage over combined honours courses."

Combinations of subjects that work well...

Majors and Minors may be chosen to complement each other, or you may choose Minor modules to explore areas that are novel to you. Here are some ideas.

- Psychology and Biology is a combination that works particularly well, or Psychology with Mathematics, if you prefer the numbers game.
- Modern molecular science increasingly employs Bioinformatics (eg the Human Genome Project) which makes a combination of Biochemistry or Chemistry, with Maths particularly relevant.
- In the Physical Sciences, a strong combination would be Earth Sciences and Physics or Chemistry Majors, with a Mathematics Minor.
- In the Life Sciences, a combination of Biology with Earth Sciences or Mathematics, plus a Geography or Psychology Minor would be very relevant in the areas of behaviour and ecology.
- We also encourage less obvious combinations of Majors, such as Biochemistry in combination with Maths or Earth Sciences.
- Or consider a language Minor, even if you do not intend to spend a year abroad.

Fees and funding

Standard fees (http://www.birmingham.ac.uk/students/ug/courses/fees/standard) apply
Learn more about **fees and funding (/undergraduate/fees/loans.aspx)**

Scholarships
Learn more about our **scholarships and awards (http://www.birmingham.ac.uk/students/ug/funding)**

Entry requirements

Number of A levels required: 3

Typical offer: A*AA

Required subjects and grades: at least two science subjects from Biology, Chemistry, Physics and Mathematics, but additional requirements apply for certain Major subjects (see Additional Information). Five GCSEs at grade B (minimum) in Double Award/Integrated Science, English and Mathematics.

General Studies: We do not accept General Studies, Critical Thinking, Citizenship Studies, Applied Science, Communication and Culture, Critical Studies, Global Perspectives, Science in Society and World Development.

Additional information:

For the Majors listed below your three A-level subjects need to include:

- Biochemistry – A level Chemistry grade A
- Biology – A level Biology grade A
- Chemistry – A level Chemistry grade A
- Geography – A Level Geography grade A
- Mathematics – A level Mathematics grade A
- Physics - A level Mathematics, Further Mathematics or Physics grade A*

Natural Sciences Undergraduate booklet (PDF 1.15Mb) (/Documents/college-les/biosciences/NaturalSciencesUGLeaflet.pdf)

Other qualifications are considered, except for BTEC and Access to HE,– learn more about **entry requirements (http://www.birmingham.ac.uk/students/ug/requirements)**

International students:

International Baccalaureate Diploma: 36-38 points excluding bonus points from TOK and Extended Essay. 6, 6, 6 at HL to include two science subjects. 5 points in each of SL English and Maths if not offered at GCSE or equivalent.

Standard English language requirements apply
Learn more about **international entry requirements (http://www.birmingham.ac.uk/students/ug/requirements/international)**

Depending on your chosen course of study, you may also be interested in the Birmingham Foundation Academy, a specially structured programme for international students whose qualifications are not accepted for direct entry to UK universities. Further details can be found on the **foundation academy web pages (http://www.birmingham.ac.uk/students/foundation-academy/Pathways/index.aspx)** .

How to apply

Apply through UCAS at **www.ucas.com (http://www.ucas.com/)**
Learn more about **applying (http://www.birmingham.ac.uk/students/ug/courses/apply)**

Key Information Set (KIS)

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 information has been published on the Unistats website and can also be accessed via the small advert, or 'widget', below. On the **Unistats website (http://unistats.direct.gov.uk)** you are able to compare all the KIS data for each course with data for other courses.

The development of Key Information Sets (KIS) formed part of HEFCE's work to enhance the information that is available about higher education. They give you access to reliable and comparable information in order to help you make informed decisions about what and where to study.

The KIS contains information which prospective students have identified as useful, such as student satisfaction, graduate outcomes, learning and teaching activities, assessment methods, tuition fees and student finance, accommodation and professional accreditation.

Related links

Natural Sciences BSc (Hons) (/undergraduate/courses/biosciences/natural-sciences.aspx)

Undergraduate courses - School of Biosciences - Study here for your Bsc degree (/schools/biosciences/courses/undergraduate/index.aspx)

Natural Sciences Undergraduate Leaflet (/Documents/college-les/biosciences/NaturalSciencesUGLeaflet.pdf)

Learning and teaching

To begin with you may find university level education challenging, but we will support you to enable you to make this transition. You will have access to a comprehensive support system in the School, including personal tutors and welfare tutors, who can help with both academic and welfare issues throughout your course. You will have a formal transition review during your first year to check on your progress and identify areas where you may need some additional support, and the School's academic small group tutorial system will provide you with skills based support throughout the course.

Study Facilities

You will be taught in lectures, tutorials, laboratory and computer classes – as appropriate for your chosen disciplines. Tutorials and laboratory classes offer you plenty of opportunity to mix with staff and other students and you will have a personal tutor as well as an academic in both of your Major subjects. We assess your progress through assignments, essays and examinations.

Base Room

Natural Science students have a special "home" on the campus in the form of the Base Room. Situated in the historic Aston Webb building this is a place for you to meet up with other Natural Sciences students

The room has computers for you to use and textbooks to help support your studies. One of the nice things about this facility is that you will meet up with students who study different subjects, and students from other year groups.

There is an active Natural Science Society; in addition to arranging a host of social events this group fields mixed teams in the Intra Mural Sports leagues.

Tutorial Support

The University places priority on direct contact between staff and students throughout the period of study.

Each student is assigned an Academic Tutor in each of the two main subjects taken. This tutor will normally oversee the students specific progress in that subject and will regularly lead tutorial groups of three to five students. These give an informal opportunity to ask and answer questions, reinforce difficult parts and develop key aspects of the syllabus, co-ordinate written course work, and enhance communication skills.

The Programme Director Professor Alastair Strain has responsibility for overall co-ordination of the Natural Sciences programme.

You will have a personal tutor based in the School of Biosciences. You will meet with this person regularly and he or she will be responsible for guiding you to a suitable study programme that combines, as far as possible, those subjects of particular interest to you.

Assessment methods

Studying at degree-level is likely to be very different from your previous experience of learning and teaching. You will be expected to think, discuss and engage critically with the subject and find things out for yourself. We will enable you to make this transition to a new style of learning, and the way that you are assessed during your studies will help you develop the essential skills you need to make a success of your time at Birmingham.

You'll be assessed in a variety of ways, and these may be different with each module that you take. Your progress will be assessed through assignments, essays and examinations.

Employability

Graduates of the University of Birmingham are highly regarded among employers in the UK, and a Biochemistry degree from this University is an excellent qualification for securing your future career in a diverse range of industries and employment sectors.

Thinking outside the box is key to creativity and originality. The multi-disciplinary approach of the Natural Science programme stimulates lateral thinking and is arguably one of the greatest assets graduates of this course will bring to bear in any organisation. Employers are looking for graduates with broad experience and expertise in more than one discipline, along with the vital transferable skills of communication, IT and teamwork developed during the course.

Former students have moved on to careers in professions such as scientific consultancy, marketing, IT, and in the business sector. A significant number pursue a PhD, as the interdisciplinary nature of the degree prepares them well for a research career.

What can I do with a degree in Natural Sciences?

Employers really like Natural Science graduates because they are so versatile. Because of the way in which the Natural Sciences programme is structured you will be used to making connections between different areas of science, this is an important skill in the modern workplace. By combining more than one area of study you will graduate with a greater breadth of subject knowledge than single honours students.

Some of our recent Natural Science graduates have gone straight from the University of Birmingham into jobs as varied as Laboratory work, Chartered Accountancy, Language Tuition, Librarian, and Conservation work. Which just goes to show the what a wide range of different occupations are open to Natural Scientists.

Like many other Science graduates, Natural Scientists often choose to go on to study for a postgraduate qualification. This may be because they have a love of the subject, and wish to research it further or because most posts in research require further study.

Applicants often ask whether, by studying Natural Sciences, they will have sufficient depth of knowledge to be able to study for a PhD. The Natural Sciences programme at Birmingham is structured so that you study your chosen parts of your subjects to the same depth as Single honours students. And yes many of our graduates do go on to do research for a PhD.

The career that you are interested may require a further qualification. In the past few years our students have gone on to study to be Teachers, Lawyers and Doctors. Others have taken Masters degrees in areas as diverse as Business and Communications Management, Oceanography, Control of Infectious diseases, Petroleum Engineering, Materials Science and Operations Management, Bioinformatics and Science communication.

Eirin O'Sullivan, Natural Sciences graduate
"My PhD research follows on directly from the chemistry project I undertook during my final undergraduate year. At present, I am synthesising and characterising novel materials displaying fascinating electromagnetic properties such as superconductors and ordered magnetic materials.

During the 2nd and 3rd year of Natural Sciences, I carefully selected my module choices to hone in on my particular interests. For my current specialism, my strong background in both chemistry and physics has been vital to my understanding and has better equipped me to communicate the fundamental underlying principles of my work to others. Possessing a broad base of knowledge has been an invaluable asset to my postgraduate studies as the ability to connect and apply different concepts is vital for today's interdisciplinary research environment."

80% Students agreed staff are good at explaining things

MSci (Hons) Natural Sciences
Full time

To see more details and compare with other courses

Visit UNISTATS

Official data collected by HEFCE

© University of Birmingham 2015