Biomedical Science.

A research-led degree for professional careers in science, health, education and industry.

BSc (B900)
MBiomedSci (B909)
Why the University of Sheffield?

Our innovative, research-led degree offers you the opportunity to explore the major challenges in biomedical science and healthcare. It will lead you not only to drive improvements in human health through careers in science and medicine, but also to enrich your opportunities across the wider employment market. The University of Sheffield is known for its achievements in science, medical health, engineering and the humanities. Our innovative Achieve More programme provides a unique experience in tackling global challenges through multidisciplinary projects with students across the University. Employers recognise it as invaluable and distinctive training for the Sheffield graduate.

The Department of Biomedical Science has an outstanding record for teaching and research. We have 650 undergraduates, 40 academic staff, 40 postdoctoral scientists, 50 postgraduates, 15 technical and ancillary staff and seven secretarial staff. We provide a welcoming academic environment, with approachable academic staff and highly effective student support systems. Students run a Biomedical Science Society and a Staff-Student Committee, with social and academic events throughout the year. They are also represented on the main departmental teaching committees.

We occupy a central position in the University campus, very close to the award-winning Students’ Union facilities and main library. Following a £30 million building and refurbishment programme, our learning and research facilities are among the best in the country. Our refurbished library facilities, including the distinctive Information Commons, provide social and learning spaces with hundreds of open access computer terminals 24/7.

Top marks for quality

Satisfaction with our course content and organisation is high, as indicated by recent national surveys and as reflected in our low dropout rate. Typically, more than 65% of our undergraduates gain first or upper-second class degrees.

Our academic staff have international reputations and professional networks across the world. This expertise ensures that our degree programmes reflect the latest issues and technologies in biomedical research. You will have opportunities to work with our researchers in research projects or summer placements that take full advantage of our advanced research facilities.

Our students say

“The labs are brilliant – we were given good advice from the demonstrators and really enjoyable work to do.”

We were ranked top of 94 submissions in Biomedical Science Allied to Healthcare in the UK Research Excellence Framework 2014.
The Biomedical Science degree programme

Is this course for me?

We offer two undergraduate degree programmes in Biomedical Science: a three year BSc and a four year MBiomedSci. Students who take a year in industry will be awarded a BSc with Employment Experience.

Our students are strongly motivated by future challenges in biomedical science. If you wish to establish a broad foundation in human anatomy, physiology, pharmacology and cell biology, and to explore the boundaries of medical research through animal models of human disease, neuroscience, drug discovery, human stem cells and regenerative medicine, then this course is for you! You will be particularly well suited to our course if you are:

- studying mainly science subjects at A Level;
- eager to learn about the processes underlying molecular, cell and systems biology;
- excited by the idea of translating scientific research to clinical practice.

Choice

Our programme provides a broad range of research-driven modules in traditional and cutting-edge disciplines. Levels 1 and 2 have a core structure that allows you to choose specific options at Levels 3 and 4, depending on your interests and aspirations.

Teaching methods

We combine lectures, practical classes, tutorials, research projects and computer-assisted learning packages. Virtual learning environments with interactive course materials supplement our teaching and learning activities.

You will have the opportunity to attend a lively programme of seminars where internationally renowned scientists present their latest discoveries. We offer high quality teaching and outstanding facilities and we expect commitment and independent learning from our students.

Tutorials

You will be allocated a personal tutor who is a member of the academic staff and who will provide support and guidance throughout your degree. Regular meetings with your tutor will enable you to discuss your academic work, career ambitions and personal progress. Your own development portfolio will enable you to monitor and enhance your skills to maximise your employability.

Achieve More

Achieve More is embedded in each year of our degree programme. It is your chance to work with students from other disciplines towards potential solutions for a range of real-life global problems. Challenging, fulfilling and highly rewarding, it’s a great way to develop skills in leadership, teamwork and problem-solving. The University also provides opportunities to extend your studies through languages, enterprise, work-based placements and volunteering.

Our students say

“Well taught, with good support from lecturers if you need it.”

“Our students say

“I’m pleased that I had such a wide choice of subjects and the chance to follow my own interests.”
**Typical week**

In Level 1 you will spend between six and nine hours each week in lectures and five hours in practical classes. You will also complete assignments for personal tutorials and will be expected to work independently in the library, to consult references, to write reports and to read textbooks to supplement lecture notes. Levels 2 and 3 share similar workloads but the hours of practical work and lectures vary according to your module choices.

**Study abroad**

The study abroad scheme provides an opportunity for you to spend your second academic year at a higher education institution in Australia, Canada or the USA. It contributes to your degree but it does not increase the duration of the course. You must be in good academic standing at the time of application and you must successfully complete Level 1.

**Industrial placements**

During your course, you will have the opportunity to apply competitively for an industrial placement, which involves a year in industry between Levels 2 and 3. It provides an excellent opportunity to gain work experience and to establish professional contacts. Our students have completed successful placements with leading companies such as Pfizer, GlaxoSmithKline and AstraZeneca.

**Summer placements**

We provide research experience placements in our own laboratories for six-to-eight weeks during the summer vacation. Financial support comes from competitive applications to schemes within the University (SURE – Sheffield University Research Experience) and from external sources across the UK.

**Assessment**

In each semester there are 12 weeks of teaching. At Level 1 the autumn semester is followed by a three week project. All other semesters are followed by a three week examination period.

**Careers in biomedical sciences**

Our students have an excellent employability record with careers in biomedical research, biotechnology and pharmaceutical companies. Many choose further study in medicine, dentistry, veterinary science, dietetics, physiotherapy, and teaching. Their understanding of contemporary biology combined with broader graduate skills provides an exceptionally wide range of career options.

Our outstanding Careers Service advisors offer active support and guidance from the start. They organise employer presentations, workshops and personal training to help you to develop your CV, to complete applications and to prepare for interviews. This continues for at least three years after you graduate.

**Admissions criteria**

Our current standard entry requirements are AAB (BSc) or AAA (MBiomedSci) at A level. We require at least two A levels from Chemistry, Physics, Biology, Human Biology, Maths/Further Maths. We welcome enquiries from mature applicants and from those with non-standard or non-UK qualifications, such as the International Baccalaureate.

Please contact us for a separate information sheet on these criteria at bmsadmissions@sheffield.ac.uk or +44 (0)114 222 2319.

*Times Higher Education Leadership and Management Awards Outstanding Student Admissions Team 2013.*
Course structure

**BSc Biomedical Science**  
UCAS University Code: BMSU02  
JACS Code: B900

**MBiomedSci Biomedical Science**  
UCAS University Code: BMSU07  
JACS Code: B909

BSc students graduate at the end of Level 3. MBiomedSci students graduate at the end of Level 4. Progression to Level 4 is conditional on performances in Levels 2 and 3.

**Level 1** provides an exciting, integrated start to your career in biomedical science with a broad introduction highlighted by elements allied to our research programmes. Lectures are supported by practical classes, academic review sessions, formative tests and online materials. Tutorials are designed to encourage generic skills such as reading scientific literature, critical analysis, presentation and communication. Coursework includes a mini-project that encourages you to think as a team about biomedical science topics in a wider context. You have a choice to take at least one module outside of the department.

**Level 2** explores core subjects in greater depth, allied with experimental work in practical classes. Leading scientists from the biopharmaceutical industry contribute to the teaching of pharmacology, providing unique insight into the processes involved in the development of new drugs. All students study human anatomy through supervised human dissection, to integrate structure and function in human biology. Independent work in practical classes helps you to develop your skills in analysis and writing reports.

Tutorials continue to develop written, numerical and oral presentation skills.

**Level 3** allows you to choose a major route in Medical Science, Neuroscience, Developmental & Cellular Biology, or Physiology & Pharmacology.

*Our students say*

“Working on your own individual research project is rewarding and challenging. You learn to apply the techniques taught during the course and gain new skills, whilst carrying out novel experiments which may potentially lead to new breakthroughs in biomedical science.”

Within each route you will have a broad choice of lecture and practical modules along with a 12 week research project. Research in the department covers internationally competitive and economically important topics that are embedded in your module choices. At this level we expect a better understanding of the knowledge base, increased independent learning and more integrative, critical thinking. You will be encouraged to attend departmental seminars by invited scientists. Assessments include written essays, course work and oral or poster presentations.

**Level 4** students work for a Masters degree in Biomedical Science, with half of the year dedicated to a laboratory research project. This is preceded by detailed study of the relevant research literature, which is assessed through written and oral presentations. Additional lecture modules include the critical analysis of current science and ethics, the law and public awareness of science.

*Our students say*

“Academically, the course has always offered me opportunities to understand and explore the rapidly developing field of biomedical science.”
Biomedical Science
Undergraduate Brochure

Level 1: Introduction to Biomedical Science
Summer examinations - Examination 67% - Coursework 33%

<table>
<thead>
<tr>
<th>Pathobiology</th>
<th>Developmental Biology</th>
<th>Physiology and Pharmacology</th>
<th>Cell Biology</th>
<th>Study of Organ Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free choice (non-BMS)</td>
<td>Introduction to Cell Biology</td>
<td>Laboratory Skills</td>
<td>Neuroscience</td>
<td>Principles of Molecular Biology</td>
</tr>
</tbody>
</table>

Integrated lectures and practical classes

Level 2: Cells and Systems
Spring and summer examinations – Examination 80% – Coursework 20% = 33% of final degree mark

<table>
<thead>
<tr>
<th>Introduction to Human Anatomy</th>
<th>Building Nervous Systems</th>
<th>Career Development Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiology and Pharmacology</td>
<td>Advanced Developmental Biology</td>
<td>Cell and Molecular Biology</td>
</tr>
</tbody>
</table>

Integrated lectures and practical classes

Level 3: Special Topics
Spring and summer examinations – assessment varies with modules = 67% of final degree mark

<table>
<thead>
<tr>
<th>Membrane Receptors</th>
<th>Molecular Physiology of Ion Channels</th>
<th>Epithelial Physiology</th>
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<tbody>
<tr>
<td>Autonomic Nervous System</td>
<td>Developmental Neurobiology</td>
<td>Sensory Neuroscience</td>
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<tr>
<td>Cancer Biology</td>
<td>Gametes, Embryos and Stem Cells</td>
<td>Cardiovascular Pharmacology</td>
</tr>
<tr>
<td>Stem Cell Biology</td>
<td>Membrane Trafficking</td>
<td>Modelling Human Disease</td>
</tr>
<tr>
<td>Group Research Skills</td>
<td>Pharmacological Techniques</td>
<td>Forensic Anatomy</td>
</tr>
<tr>
<td>Neuroscience Techniques</td>
<td>Image Processing</td>
<td>Developmental Genetics</td>
</tr>
<tr>
<td>Modelling Human Disease</td>
<td>The Kidney in Health and Disease</td>
<td>Cell Biology</td>
</tr>
</tbody>
</table>

Choose a route and a 12 week research project

Level 4: Masters Year
Spring and summer examinations – Examination 30% – Coursework 70%

<table>
<thead>
<tr>
<th>Retrieval and Evaluation of Research Information</th>
<th>Ethics, the Law and Public Awareness of Science</th>
<th>Laboratory Research Project</th>
<th>Critical Analysis of Current Science</th>
</tr>
</thead>
</table>

Employment destinations of our graduates

<table>
<thead>
<tr>
<th>MSc</th>
<th>Medicine</th>
<th>Sales</th>
<th>Industry</th>
<th>Healthcare</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD</td>
<td>Dentistry</td>
<td>Forensic science</td>
<td>Drug discovery</td>
<td>Civil service</td>
</tr>
<tr>
<td>Teaching</td>
<td>Law</td>
<td>Business</td>
<td>Journalism</td>
<td>Politics</td>
</tr>
<tr>
<td>Accountancy</td>
<td>Software development</td>
<td>Patenting</td>
<td>Armed forces</td>
<td>Economics</td>
</tr>
</tbody>
</table>

For more information on modules go to www.sheffield.ac.uk/bms/undergrad/modules
Living in Sheffield

Sheffield is England’s fourth-largest city, with the wealth of facilities you would expect to find in a major centre – yet it is compact, friendly and accessible. Many students like living here so much that they stay on after graduating. Regarded as one of the UK’s safest cities, Sheffield is student-friendly and affordable. With cinemas, theatres, pubs, clubs, shopping, sport, art galleries, museums, music, climbing, walking and beautiful countryside all on offer, it caters for most tastes!

Our students say

“Sheffield is a campus with diversity and integrity. The University allows independence, and has a warm and friendly atmosphere.”

The University

As one of Britain’s major universities we offer a wide range of academic and non-academic facilities. We have been voted University Of The Year by both The Times and the Virgin Alternative Guide. Our newly renovated, multi award-winning Students’ Union provides excellent services including places to eat and drink, a bank, an advice and rights office, an insurance agency, shopping, printing and computing facilities, music and games rooms, concert venues, a large cinema, and a students’ newspaper. The Octagon is a large entertainment venue that attracts visiting bands and exhibitions while the Drama Studio is used for the production of plays, operas and concerts.

There is a huge variety of clubs and societies that cater for every possible sport and activity. If there is no club for your particular interest, the Students’ Union will help you to start one.

Sports facilities

The University has invested over £6 million to ensure our sports centre offers top quality facilities at affordable prices. We are committed to the principle of providing sport for all, so whether you want to compete at club level or simply play sport for fun we can offer a wide choice of venues and activities. For more information, visit the Sport Sheffield website at www.sport-sheffield.com

Accommodation

As a first-year student you are guaranteed a place in University accommodation, provided you meet certain criteria (which the vast majority do). The residences are modern facilities with a range of accommodation types, catered or self-catered. After the first year groups of students often rent houses or flats in the private sector, although some students choose to stay in University accommodation.

Bursaries and scholarships

The cost of living for our students is among the lowest in the country and many undergraduates benefit from the extra assistance the University of Sheffield can provide. In addition to the financial support that you may receive from your LEA and the Student Loan Company, UK students may be eligible for a university bursary. These are based on your household income, your prior academic achievements, and whether you entered university through an outreach scheme. For more details and current tuition fee rates visit www.sheffield.ac.uk/bursaries

Open days

We hold a number of university and departmental Open Days throughout the year to enable prospective students to find out more about the type of academic and social life they can expect. For more information on dates and bookings please visit the University website at www.sheffield.ac.uk/opendays

We were University of the Year in the UK Times Higher Education Awards 2011.
If you would like further information about our department or about any aspect of our courses then please get in touch.

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This publication is available in alternative formats. To request an alternative format please telephone +44 (0)114 222 1303.

Note: The structure and content of the course is continually reviewed and some details may change.

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