

# Medical Science BMedSc

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Medical Science explores the science of the human body and the causes of diseases that affect humans. Our programme explores the major body systems right down to the cellular and molecular level and is constantly updated to reflect the latest developments in the field. You'll be taught by experts who carry out medical and fundamental scientific research in these areas. You'll find out how research translates into advances in clinical practice and you'll have the opportunity to undertake research projects with our internationally recognised research groups in state-of-the-art laboratories.

The career options open to our graduates are varied. The majority go on to be professional scientists. Many pursue further training and qualifications, including Masters, PhD and Medicine programmes. In the 2013 National Student Survey (NSS), 98% of our students were satisfied with the overall quality of our programme.

So what difference will you make?



**[Study here and find out why the University of Birmingham has been 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)**  
(<http://www.birmingham.ac.uk/news/latest/2013/09/20-sep-Birmingham-announced-as-University-of-the-Year.aspx>)

## Course fact file

UCAS code: B900

Duration: 3 years

Places Available: 120

Applications in 2013: 621

Typical Offer: AAB (**[More detailed entry requirements and the international qualifications accepted can be found in the course details \(? OpenSection=EntryRequirements\)](#)**)

Start date: September

## Contact

### Admissions tutors

Dr Linda Lefièvre / Dr Kevin Whitehead

### Enquiries

+44 (0)121 414 9250 / 2661

[med-bmedsc-admissions@contacts.bham.ac.uk](mailto:med-bmedsc-admissions@contacts.bham.ac.uk) (<mailto:med-bmedsc-admissions@contacts.bham.ac.uk>)

### Links:

**[Download the latest BMedSc Medical Science Programme Brochure \(/Documents/college-mds/course-flyers/medical-science-brochure-2015.pdf\)](#)**

**[Follow us on Twitter \(http://twitter.com/unibirm\\_MDS\)](http://twitter.com/unibirm_MDS)**

**[Contact us on Facebook \(http://facebook.com/collegemds\)](http://facebook.com/collegemds)**

## Details

Our Medical Science programme is delivered by staff in the College of Medical and Dental Sciences. You'll be taught by experts who cover all the major disciplines of Medical Science. We are modifying our course from 2014, so that you'll follow a broad curriculum in the first and second year, with some choice in the second year to work on a topic of particular interest to you. Year 1 and 2 will allow you to create a strong foundation for further specialisation in the third year, when you'll complete your

studies by undertaking an original research project and gain hands-on experience in one of the College research laboratories.

## First and second year – broad foundations of knowledge

The first two years of the course builds a detailed understanding of how the human body functions and what can go wrong in disease. The content extends from the single cell to the whole body. You'll begin to learn about major pathologies such as cancer, cardiovascular disease, neurodegenerative disease, arthritis and diabetes, and the genetic basis of inherited disorders.

All students take a common set of key subjects which will provide you with the core knowledge to understand the importance of each of the major disciplines of medical science. This forms a strong foundation for your final year. In addition, throughout the course you'll develop core research skills, such as data analysis and interpretation, helping you develop an understanding of the key ethical and social issues surrounding medical science.

In the second year there will be an opportunity to specialise in a scientific area of your choice, linked to our College major research themes. This student selected component will allow an in-depth exploration of the area under the guidance of one of our subject experts. The themes will include cancer, neuroscience, infection and immunity, pharmacology and cardiovascular science. This will provide a platform for further specialisation in your third year.

At the end of your second year there is the possibility of taking a year out to gain work experience, by securing a placement in, for example, the pharmaceutical industry. You may also opt to undertake a summer research project within the College, for which funding is available.

## Third year – follow your interest

During the first term of your final year you specialise by selecting two taught options from over 20 specialist modules in a wide range of subject areas, including different aspects of neuroscience, cancer, virology, cardiovascular science, pharmacology, endocrinology, stem cell biology, ageing and immunology. You'll learn about the latest findings and be exposed to advanced research techniques, guided by internationally recognised experts in these fields.

These taught options lead on to a substantial research project in the spring term, which in the majority of cases is laboratory based specifically within one of our leading research active laboratories. You'll work independently, under supervision, for ten weeks full-time on an original piece of research, acquiring and analysing your own data. The project develops and enhances not just your practical and analytical abilities, but also a range of other skills that will be a key to success in whatever career path you choose.

## Why study this course

The Medical Science programme benefits greatly from the very active research environment at Birmingham. The course has been developed, and is taught by, academics who are recognised experts in their field and who make sure that Medical Science at Birmingham stays up-to-date and that the teaching is of the highest quality. The College of Medical and Dental Sciences has a research income in excess of £50 million per annum, with several major centres focusing on areas that are at the forefront of medical science, including cancer, diabetes, stem cell biology, immunity and inflammatory disease, infection, cardiovascular science and ageing.

In the last Research Assessment Exercise (RAE 2008) much of this research was rated as internationally excellent and world leading, with most of the remainder being internationally recognised. Notably, Birmingham has the first Cancer Research UK Centre, and was named as the leading cancer studies centre outside London, second only to the Institute of Cancer Research (RAE 2008).

The course develops a wide range of skills that employers are looking for in graduates. Practicals run in state-of-the-art laboratories allow you to gain hands-on experience in all subject areas, including: the capture and analysis of physiological measurements in the areas of cardiovascular, respiratory and neuroscience; use of electrophoresis and PCR equipment for molecular biology; and using microscopes and tissue culture for cell biology. We also offer a range of curriculum activities specifically designed to build IT, communication, organisational, group, problem-solving and analytical skills, equipping you for further study or employment in a wide range of careers.

## Modules

Please use the following links to find out all module information including description, learning outcomes, assessment and hours:

### [Year 1 - Curriculum](#)

[\(/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-one-curriculum-2014.pdf\)](#)

[Year 2 - Curriculum \(/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-two-curriculum-2014.pdf\)](#)

[Year 3 - Curriculum \(/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-three-curriculum-2014.pdf\)](#)

[Year 3 - Option 1 modules \(/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-three-combined-option1-modules-2014.pdf\)](#)

[Year 3 - Option 2 modules \(/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-three-combined-option2-modules-2014.pdf\)](#)

[Year 3 - Research project \(/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-three-research-project-2014.pdf\)](#)

This is the module list for 2014, but the programme continues to evolve and you should check the website regularly for any changes for next year.

## Fees and funding

EU nationals are considered as home students for fee-paying purposes.

**Standard fees** (<http://www.birmingham.ac.uk/students/ug/courses/fees/standard>) apply

Learn more about **fees and funding** (<http://www.birmingham.ac.uk/students/ug/feesandfinance/loans.aspx>).

### Scholarships

Learn more about our **scholarships and awards** (<http://www.birmingham.ac.uk/students/ug/feesandfinance/funding/index.aspx>).

## Entry requirements

**Number of A levels required:** 3

**Typical offer:** AAB

**Required subjects and grades:** a minimum of two sciences at A level (From Biology, Chemistry, Physics and Mathematics or Further Mathematics) with at least one at grade A; Biology at AS level or above is advised.

### Additional information:

Mathematics, Biology and Chemistry (or combined science) at GCSE level are required at a minimum grade B, if not offered at a higher level. You will also be expected to offer a reasonable number and range of GCSE subjects at a minimum of grade C, including English Language.

Offers are not made on the basis of tariff points. General Studies and Critical Thinking are not accepted as part of the minimum of three A level

subjects. We do not consider any BTEC qualifications.

### International Baccalaureate Diploma:

Overall score of 35 points, with minimum grades of 6, 6, 5 in higher level subjects, to include at least two sciences (from Biology, Chemistry, Mathematics and Physics – Maths Studies is excluded) with at least one at grade 6. English and Mathematics at standard level. No less than grade 4 in any subject offered. Extended Essays and Theory of Knowledge will not be counted. Scottish Certificate of Education and Irish Leaving Certificate: Please contact Admissions Tutors for further information.

### EU and Overseas qualifications:

We welcome applications from students from the EU and overseas. Please contact Admissions Tutors or Admissions for further information. Standard English language requirements apply.

### Mature candidates:

You will be assessed on an individual basis, but will normally be expected to have equivalent qualifications or experience to those required for the typical standard offer.

### International students:

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) (<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) (<http://www.ucas.com/>).

Learn more about [applying](http://www.birmingham.ac.uk/students/ug/courses/apply) (<http://www.birmingham.ac.uk/students/ug/courses/apply>).

### Application procedure

All applications are received through UCAS. Those applicants whose interest is in science and whose academic profile meets our minimum requirements will be invited to a Medical Science 'Applicant Visit Day'. This will involve visiting the Medical School, meeting staff and students, viewing our facilities and attending interactive sessions showcasing the research activities of the Medical Science programme. We receive many applications from those whose first choice of course is Medicine. These applications will receive equal consideration.

## 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) (<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.

## Learning and teaching

As a Birmingham student you are part of an academic elite and will learn from world-leading experts. At Birmingham we advocate an enquiry based learning approach, from the outset you will be encouraged to become an independent and self-motivated learner, qualities that are highly sought after by employers. We want you to be challenged and will encourage you to think for yourself.

Your learning will take place in a range of different settings, from scheduled teaching in lectures and small group tutorials, to self-study and peer group learning (for example preparing and delivering presentations with your classmates).

To begin with you may find this way of working challenging, but rest assured that we'll enable you to make this transition. You will have access to a comprehensive support system that will assist and encourage you, including personal tutors and welfare tutors who can help with both academic and welfare issues, and a [formal transition review](https://intranet.birmingham.ac.uk/student/transitionreview/index.aspx) (<https://intranet.birmingham.ac.uk/student/transitionreview/index.aspx>) during your first year to check on your progress and offer you help for any particular areas where you need support.

Our Academic Skills Centre also offers you support with your learning. The centre is a place where you can develop your mathematical, academic writing and general academic skills. It is the centre's aim to help you to become a more effective and independent learner through the use of a range of high-quality and appropriate learning support services. These range from drop-in sessions with support with mathematics and statistics based problems provided by experienced mathematicians, to workshops on a range of topics including note taking, reading, writing and presentation skills.

### Some positive comments from the 2012 National Student Survey (NSS) are listed below:

*"High level of support and brilliant teaching combined with access to a range of useful resources to support learning."*

*"My personal tutor and the head of year tutors have been very helpful and supportive."*

*"Intellectually stimulating and challenging topics and issues that are both relevant to modern day science and medicine."*

*"Staff are really approachable and ready to help or discuss with students in any situation."*

*"Compulsory modules in first and second year is a good system as it means that you get a complete understanding of all systems of the body and how they interact."*

### Meet our lecturers

[Dr Alison Cooper, Senior Lecturer on the BMedSc Medical Sciences programme](/schools/cem/staff/meet-alison-cooper.aspx) (</schools/cem/staff/meet-alison-cooper.aspx>)

## Learning settings

**Laboratory-based practical work** is an integral part of our Medical Science programme, delivering important transferable skills and giving you the experience of practical work that is essential for your future career.

**Lectures** take place in our theatres which, as well as the traditional whiteboard and pen, are equipped with the latest technology, including facilities to show movies, animations and graphics, to record lectures and to interact with 'ask the audience' style electronic voting systems.

**Seminars and small-group tutorials** run alongside the lecture course, addressing any individual problems you may have and allowing you to consolidate scientific and professional lecture material.

## Computer-based learning sessions

**Self study** is an essential part of the programme and demonstrate your commitment to, and enthusiasm for, your subject and for the learning that will continue throughout your professional career.

**E-learning mechanisms** include WebCT, Wiki podcasts and our Virtual Learning Environment (VLE); an excellent tool for supporting our academic courses, allowing you to share thoughts on assignments with other students via the discussion group facilities, giving access to learning materials 24 hours a day and allowing you to submit your work electronically.

**Enquiry Based Learning (EBL)** is a group activity which requires you to work in a team, with a variety of assessment methods; in either a group or individually, by written reports and sometimes as a presentation. Based on techniques used in research-led organisations like the University of Birmingham, EBL gives you a research-orientated approach to a problem and helps you to gain essential skills that are highly valued by employers.

## Our facilities

The College of Medical and Dental Sciences houses state-of-the art facilities to support a range of teaching, learning and research activity.

Our facilities ensure that students receive the best possible learning experience by working in a modern environment. Among our most recent developments include a refurbishment of the Medical School foyer, Barnes library and Wolfson Centre for Medical Education.

Explore our facilities and take a tour by moving around our 360-degree panoramas:

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Adobe Flashplayer 10.1 (or higher) or a  
HTML5 Browser with CSS 3D Transforms or WebGL support are required!

## 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 (<https://intranet.birmingham.ac.uk/student/transitionreview/index.aspx>)** 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. You will be assessed through coursework which may take the form of essays, group and individual presentations, laboratory-based work (depending on your chosen degree) and formal exams.

During your first year you will undergo a **formal 'transition' review (<https://intranet.birmingham.ac.uk/student/transitionreview/index.aspx>)** to see how you are getting on and if there are particular areas where you need support. This is in addition to the personal tutor who is based in your school or department and can help with any academic issues you encounter.

At the beginning of each module, you'll be given information on how and when you'll be assessed for that particular programme of study. You'll receive feedback on each assessment within four weeks, so that you can learn from and build on what you have done. You'll be given feedback on any exams that you take; if you should fail an exam we will ensure that particularly detailed feedback is made available to enable you to learn for the future.

## Employability



Studying at University helped me pick up valuable life skills, particularly those which were to be of value to future employers such as giving presentations and working to tight deadlines. I think it is fair to say that if I hadn't studied at University, my career options would have been vastly reduced."  
 Matt Fung, BMedSc Medical Science, 2005

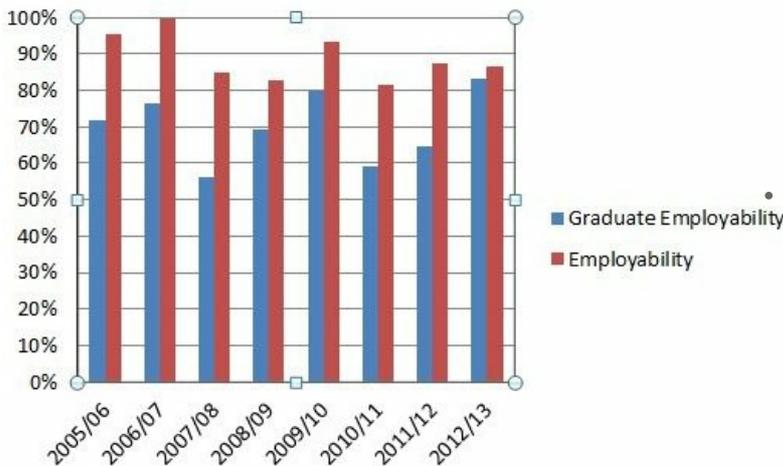
To find out more about our graduate employability, view our [Career Profiles \(/university/colleges/mds/alumni/our-alumni/undergrad-profiles.aspx\)](#).

Preparation for your career should be one of the first things you think about as you start university. Whether you have a clear idea of where your future aspirations lie or want to consider the broad range of opportunities available once you have a Birmingham degree, our [Careers Network \(/undergraduate/careers/careers-network.aspx\)](#) can help you achieve your goal.

Our Medical Science graduates have an excellent record of employment in a wide variety of careers. Many embark on laboratory work in universities, often in PhD positions, hospitals, as clinical scientists and biotechnology companies. Other degree-related careers include work in clinical trials, and in marketing and management in biotechnology companies. Every year a number of graduates also make successful applications to study medicine.

### Graduate Employability - Data from Destination of Leavers from Higher Education (DLHE)

- Employability of Medical Science graduates is consistently high, and above the UK average



Typically nearly half of Medical Science graduates go on to further study (PhD, MSc, Medicine). Less than half go straight into a job, with 45% of these being classed as professional/managerial.

#### Career destinations of 570 graduates from DLHE data 2005-2010

Data from 570 graduates over the last 7 years show that 44% of Medical Science students choose to go on to further study. Over half of those undertake a PhD; nearly a quarter go on to study medicine. 46% take up employment; 22% in degree-related jobs and 17% in jobs that are not directly related to the subject area.

#### Graduates going on to study further qualifications from DLHE data 2005-2010

#### Graduates in degree-related employment DLHE data 2005-2010

- Degree-related jobs include laboratory work in university, hospital or commercial laboratories; clinical trials and forensic science.

The skills that you will acquire on the course are highly transferable, making it the ideal preparation for many other high-profile careers, such as teaching, accountancy, law and banking, as well as management positions in a variety of companies.

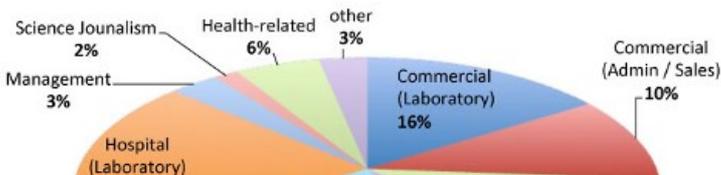
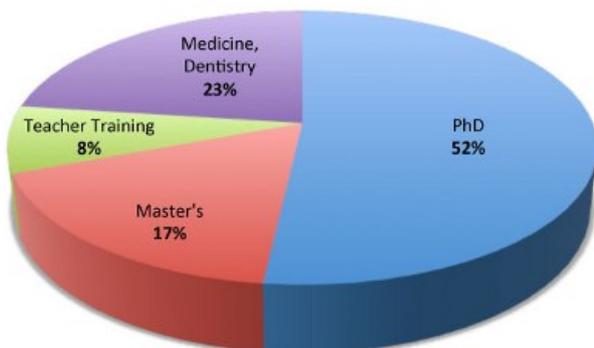
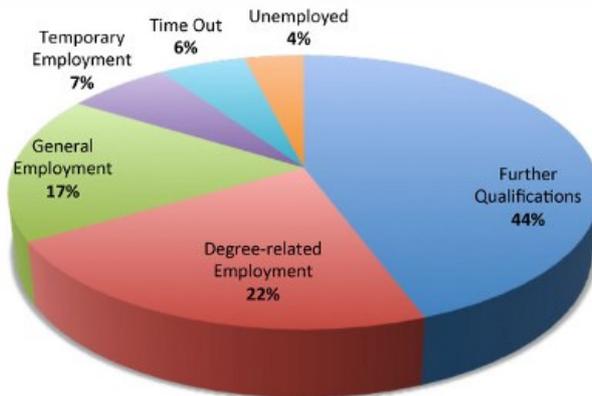
Your Birmingham degree is evidence of your ability to succeed in a demanding academic environment. Employers target Birmingham students for their drive, diversity, communication and problem-solving skills, their team-working abilities and cultural awareness, and our graduate employment statistics have continued to climb at a rate well above national trends. If you make the most of the wide range of services you will be able to develop your career from the moment you arrive.

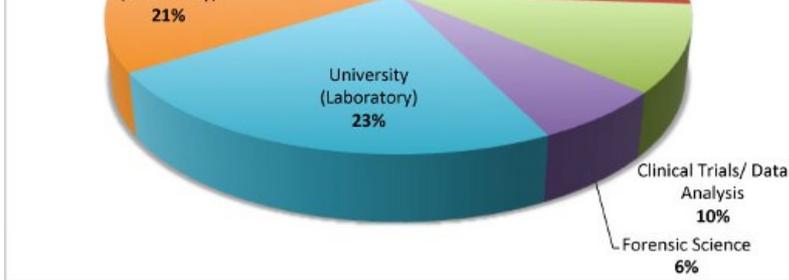
Another advantage you will have as a Birmingham student is access to our unique careers guidance service where, if you make the most of the wide range of services, we will be able to help you develop your career from the moment you arrive.

Our unique careers guidance service is tailored to your academic subject area, offering a specialised team (in each of the five academic colleges) who can give you expert advice. Our team source exclusive [work experience opportunities \(/undergraduate/careers/work-experience.aspx\)](#) to help you stand out amongst the competition, with [mentoring \(/generic/internships/mentoring/index.aspx\)](#), global [internships \(/generic/internships/index.aspx\)](#) and placements available to you. Once you have a career in your sights, one-to-one support with CV's and job applications will help give you the edge. In addition, our employer-endorsed award-winning [Personal Skills Award \(PSA\) \(/undergraduate/careers/psa.aspx\)](#) recognises your extra-curricular activities, and provides an accredited employability programme designed to improve your career prospects.

We also offer voluntary work which complements your studies by helping you gain practical experiences in occupational settings while contributing back to society. This can bring new skills that will be useful throughout your future and can make a positive impact on your learning whilst at university. Volunteering enables you to develop skills such as communication, interpersonal skills, teamwork, self-confidence and self-discipline all of which can be transferred into your studies.

Find out more about [Careers Network \(/http://www.as.bham.ac.uk/careers/index.shtml\)](#)





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