University of Birmingham

Medical Science BMedSc - Intercalated Degree

Intercalating degrees are suitable for students studying Medicine and Dentistry only; you may choose to take a year out from your medical/dental course and study on one of intercalated BMedSc degree programmes. During this year you will acquire skills in analysing and interpreting research papers and you will also gain substantial, direct experience of novel medical or clinical research (either in a research laboratory or in the community).

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

Duration: 1 year Full Time

Places Available: 25 students after year two

Start date: September / October annually depending on published term dates

Contact

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Details

Successful completion of this year leads to the award of a classified honours degree. The course aims to emphasise the importance of the science that underpins medicine and provide awareness, experience and competence in those scientific disciplines allied to medicine. This is achieved through in depth study of specific subject areas and also a research project, which is a major component of the programme. The project provides an understanding of the importance of medical research to the practice of medicine. Medical practitioners are now required to have an appreciation of areas previously considered mainly beneficial to a research career.

You will have the opportunity to develop:

- an in-depth knowledge of selected subject areas within medical science
- a perception of the integrated nature of medical science and be able to communicate an understanding of the scientific methods to future medical practitioners
- in-depth analytical, research and evaluative skills coupled to presentation of a substantial dissertation
- your ability to work on own initiative and as a member of a team.

This course also forms Year 3 of the Medical Science degree programme. Therefore, the modules that are on offer to you are also those that are taken by science students.

The course is different from what you have experienced to date. You will pursue studies in considerable depth with discussion of the evidence underpinning scientific knowledge and investigate areas where there is incomplete knowledge and therefore uncertainty. Throughout this year there is a strong emphasis on practical work. You will learn how to design and perform medical research experiments and analyse data from them. In order to justify award of an honours degree, you will need to be prepared to expend considerable effort during the year.

The subjects you can study in the first semester include medical and molecular genetics, neuroscience, cellular pathology, pharmacology, molecular medicine, molecular virology and oncology, and many more. This leads you on to your own research project for the whole of the spring term. Here you gain experience of advanced research techniques and learn to analyse and interpret data as well as to present a coherent discussion of your interpretations and conclusions of your findings. During the project you are expected to be associated full-time with your laboratory.

Why study this course

This intercalated programme is only available to students already studying at the University of Birmingham. It is the only intercalated degree at Birmingham in which students join with other (non-medical or dental) students. Working alongside science students provides a unique opportunity to understand how medicine and science interact and how the skills of the two professions complement each other.

Modules

Semester 1

You choose two taught modules from a substantial number that are on offer. The modules run consecutively.

The following links to pdf files provide detailed information about each of the available modules. This is the current module offer, but the programme continues to evolve and you should check the website for any changes to next year.

Option 1 modules (/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-three-combined-option1-modules-2014.pdf) - first five weeks of semester (pdf, opens in new window)

Option 2 modules (/Documents/college-mds/courses/undergraduate/bmedsc-medical-science/2014/year-three-combined-option2-modules-2014.pdf) - second five weeks of semester (pdf, opens in new window)

The knowledge and practical experience gained from these options prepares you for your research project in the final semester of the course.

Semester 2

In Semester 2 you will take two modules, the Research Project module and the Medical Science and Society module.

Research Project Module

You are able to join a research laboratory in the Medical School and take on an aspect of the on-going research activity. It is your own project and it will take you into research at the boundaries of medical science. You will learn the techniques that are in use in the laboratory and use these to acquire your own data, which you will analyse and interpret.

This module provides you with first hand experience of the acquisition of new scientific information and assimilation into the existing body of knowledge. This is a complex and multistep process and the project will provide training in literature research, organising experiments, acquisition of technical skills, interpreting results and presenting results both orally and in writing. The expectation is that you will undertake a research project that is directly relevant to one of your taught modules.

All experimental work is completed by the end of Week 9. You are required to keep a laboratory notebook for recording experimental details and primary results in a chronological order day by day. You are required to present a short talk on your project (10 min) to your peers. A written report has to be submitted in the general format of a scientific paper in a journal.

By the end of the project you will be able to:

- Conduct a detailed study of the literature to define precise scientific questions and the experimental approaches to be used.
- Design and organise experiments including the identification of controls and decisions about the scale of experiments.
- Acquire technical skills and be familiar with equipment.
- Know how to troubleshoot when experiments do not fit with prediction.
- Collect, record, analyse and interpret data.
- Integrate new results into existing knowledge and formulate new experiments and ideas.
- Present results and ideas both orally and in writing.

Assessment - Laboratory performance 25%. Written Report 75%
Hours - 385 Hours (total student hours), with individual laboratory supervision

Medical Science and Society (General Paper) Module

The aim of this element is to assess your general knowledge and understanding of issues relating to biomedical science. It addresses topics which are of wide interest to biomedical science and to society and requires an understanding of relevant ethical and moral issues which impact on science and medicine. Topics are selected which reflect current interests of the scientific community and/or the general public. The module does not require the level of detailed scientific knowledge specifically provided within final year taught options.

There are no timetabled teaching sessions associated with this module. During the year you are expected to keep up to date with the scientific issues currently being discussed in the media, and develop your skills at formulating a balanced argument. So that in the exam, you will be able to present an informed discussion on specific and general issues which relate to biomedical science and explore the moral, ethical and social aspects of these issues.

Assessment - the module is assessed by a 3hr written examination consisting of 2 essays from a choice of 10 (Semester 2)
Hours - Self directed study through semester 1 and 2 and Departmental/Divisional seminars.

Entry requirements

This programme is aimed at medical and dental students who have completed Year 2 of their vocational programmes since they have recently completed the relevant subjects. Entry is competitive. Currently it is necessary for all second year examinations (both Biological Sciences and Medicine in Society components - or equivalent) to have been successfully completed at the first attempt. Places are awarded on the basis of overall year mark which includes all second year modules.

Please note that if you have not yet completed Year 2 of your vocational course, both your acceptance and your choice of final year modules can be decided only after all examination marks are known.

University of Birmingham students: Please visit the 'Intercalating BMedSc (Medical Science)' folder on Canvas.

External applicants

We do not normally accept applications from external students.

How to apply

Application forms are available within a dedicated section on Canvas, to which all current MBChB students have access. You will be given details on how to apply during the MBChB programme.

Learning and teaching

As a Birmingham student you are part of an academic elite and will learn from world-leading experts. From the outset you will be encouraged to become an independent and self-motivated learner. 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, peer group learning (for example preparing and delivering presentations with your classmates) and an extended laboratory project.

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:

ERROR:

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

Research interests of staff

The College of Medical and Dental Sciences makes up over one fifth of the University's population – with around 1400 staff, over 1000 of who are academic – but nearly half of its research-related income, and brings together healthcare-related research both in a clinical, patient-oriented setting and in outstanding basic laboratory sciences.

The BMedSc Medical Science programme benefits greatly from being taught by staff from different Schools of the College of Medical and Dental Sciences who are active research scientists engaged in a wide range of high quality research projects. In particular, this enables a broad range of taught options and research projects to be offered to BMedSc students in their third year.

To learn more about biomedical research activities in the College of Medical Sciences, please visit our **research pages (http://www.birmingham.ac.uk/university/colleges/mds/research-domains.aspx)**

Or visit our individual school websites as below:

- **School of Cancer Sciences (http://www.birmingham.ac.uk/schools/cancer/index.aspx)**
- **School of Clinical and Experimental Medicine (http://www.birmingham.ac.uk/schools/cem/index.aspx)**
- **School of Dentistry (http://www.birmingham.ac.uk/schools/dentistry/index.aspx)**
- **School of Health and Population Sciences (http://www.birmingham.ac.uk/schools/haps/index.aspx)**
- **School of Immunity and Infection (http://www.birmingham.ac.uk/schools/immunity-infection/index.aspx)**

Assessment methods

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.

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

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 can help you achieve your goal.

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 to help you stand out amongst the competition, with mentoring, global internships and placements available to you. Once you have a career in your sights, one-to-one support with CVs and job applications will help give you the edge. In addition, our employer-endorsed award-winning Personal Skills Award (PSA) recognises your extra-curricular activities, and provides an accredited employability programme designed to improve your career prospects.

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.

Find out more about **Careers Network (http://www.intranet.birmingham.ac.uk/careers)** .