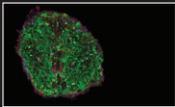




THE UNIVERSITY *of* EDINBURGH
Edinburgh Medical School

Deanery of Biomedical Sciences

BSc (Hons) Medical Sciences



Regenerating spinal cord

Unlike humans, many animals have a central nervous system that can regenerate when damage occurs. This image shows a regenerating spinal cord from a zebrafish. The zebrafish allows us to study the mechanisms that trigger regeneration in the hope of finding ways to promote similar repair in humans.

Image courtesy of Catherina Becker, Thomas Becker and Karolina Mysiak at the Centre for Neuroregeneration.

Welcome

Welcome to our booklet designed to give you an introduction to Medical Sciences at the University of Edinburgh. This is a short guide to what our programme offers and the standard entry requirements you will need in order to be eligible to apply. We hope you will find this useful in determining whether our programme is right for you.

The Biomedical Teaching Organisation



“Medical science has far exceeded my expectations in exposing me to a massive breadth of biological and medical information taught by enthusiastic experts in every instance. All of the staff I’ve interacted with have instilled a love for the sciences and further encouraged me to push myself in my studies.”

Connor Schlemmer, BSc (Hons) Medical Sciences, Year 2

Academic Families

Award winners - Our Academic Families programme was awarded an impact award for best Peer Support Group by the Edinburgh University Students' Association in 2016 and 2017.



Our Academic Families bring together students from across the Biomedical Sciences programmes, providing a framework for peer-assisted support and guidance.

The aims of the Academic Family system are to encourage the forming of relationships, to foster a sense of belonging to the University and to ensure that new students quickly feel part of the Biomedical Sciences community. Academic Families allow space for incoming students to ask about course choices, common pitfalls or even the best places to go out.

They also give the higher year students the opportunity to nurture newer students and facilitate their learning. Academic families offer a safe and welcoming environment where new students can feel comfortable seeking guidance and advice.

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Introducing Medical Sciences at the University of Edinburgh

The BSc (Hons) Medical Sciences provides opportunities for motivated individuals to explore the biological, physico-chemical and clinical sciences that form the foundations of 21st century medicine. Advances in the understanding and treatment of disease and ill-health rely on innovative biomedical research. The University of Edinburgh has some of the best biomedical research programmes nationally and internationally, as indicated by ratings in the most recent Research Excellence Framework. Edinburgh Medical School: Deanery of Biomedical Sciences is home to research centres in Discovery Brain Sciences, the Developing Brain, Autism, Fragile X Syndrome and intellectual disabilities, and Infectious Diseases which, along with the wider strengths of clinical research centres in the College of Medicine and Veterinary Medicine, provides a vibrant, research-rich environment for student learning. Medical Sciences academic staff bring a breadth and depth of research-based knowledge and expertise to their teaching and supervision, providing an outstanding student learning environment that fosters individual intellectual development.

Many different disciplines make up Medical Science and as such the programme is built on a platform of compulsory courses delivering core material in Medical Sciences alongside investigations of social and ethical issues related to modern day healthcare. In the Pre-Honours (first and second) years, courses covering human anatomy, immunology, microbiology, neuroscience, pathology, physiology, and pharmacology establish the core Medical Sciences knowledge base. Additional choices from a range of courses that address molecular, cellular and whole organism aspects of Medical Sciences allow students to create a unique programme of study. Study in the early years also aims to develop key graduate attributes, including skills in analysis, communication, and research and enquiry. In the Honours years, acquisition of an in-depth knowledge in key areas of Medical Sciences is integrated with the development of research skills needed to investigate, interpret and analyse new findings that will advance knowledge and understanding. The final year has a particular emphasis on current medical research and its relevance to medical practice. During this year students will have the opportunity to actively engage in research by undertaking compulsory project work with one of our research groups. Alongside this development of academic knowledge and understanding the Medical Sciences degree programme facilitates personal and professional development by providing opportunities to enhance skills in communication, presentation and other graduate attributes that will equip students for a range of healthcare employment options.

What does the degree involve?

The unique identity of the BSc (Hons) Medical Sciences degree programme is provided by programme-specific healthcare related courses in all years. These courses aim to develop three key themes over the four years of the programme;

- how different disciplines contribute to advances in the understanding and application of healthcare-related science;
- the role of basic research in advancing medical practice,
- the social and ethical issues surrounding research and medical practice.

In addition, the programme shares compulsory and elective courses with the Biomedical and Biological Sciences degrees.



Study year by year

Pre-Honours - Year 1

The first year provides a broad-based knowledge and understanding of the range of Medical Sciences, as a foundation for progressive specialisation in subsequent years. It aims to promote a positive and inquisitive attitude to science and medicine while promoting independent, self-motivated learning. Medical Sciences 1 is a programme-specific compulsory course and is only open to students enrolled on the Medical Sciences programme. Through investigation of the important health themes of infectious disease, central nervous system disease and therapeutic applications in relation to general anaesthesia, the course aims to define the distinctive identity of the Medical Sciences degree programme by introducing the breadth of disciplines that contribute to our understanding of the science that underpins medicine.

Other compulsory courses cover Medical Biology, and Molecular and Cellular Biology. You will also be expected to take at least one Biological Chemistry course. You will also study other self-selected (elective) courses. In first and second year, elective courses can be selected from a range of biomedical and non-biomedical courses run throughout the University, thereby providing the opportunity to broaden knowledge and experience.

Pre- Honours - Year 2

The second year aims to develop knowledge and learning in the Medical Sciences disciplines of human anatomy, immunology, microbiology, neuroscience, pathology, physiology, and pharmacology, thereby providing a platform for the Junior and Senior Honours years. It encourages the development of a critical approach to medical science and to the strengths and weaknesses of scientific claims.

Anatomy & Pathology 2 is a programme-specific compulsory course that introduces an integrated approach to the structure of the human body in health and disease and at different levels of organisation, including aspects of pre- and post-natal growth and development, histology and gross appearance of human tissues and organs, and interactions between various body systems.

Biomedical Sciences 2 is the second compulsory course that aims to provide opportunities to develop core skills and knowledge across the whole range of modern biomedical science. It will establish the foundation of a significant degree of specialist knowledge in the disciplines of physiology, neuroscience, pharmacology, reproductive biology and infectious diseases. The course emphasises connections between the different disciplines (through integrative approaches) and introduces the experimental basis of scientific knowledge.

The final compulsory second year course is Microorganisms, Infection and Immunity 2. You will also study other self-selected (elective) courses.

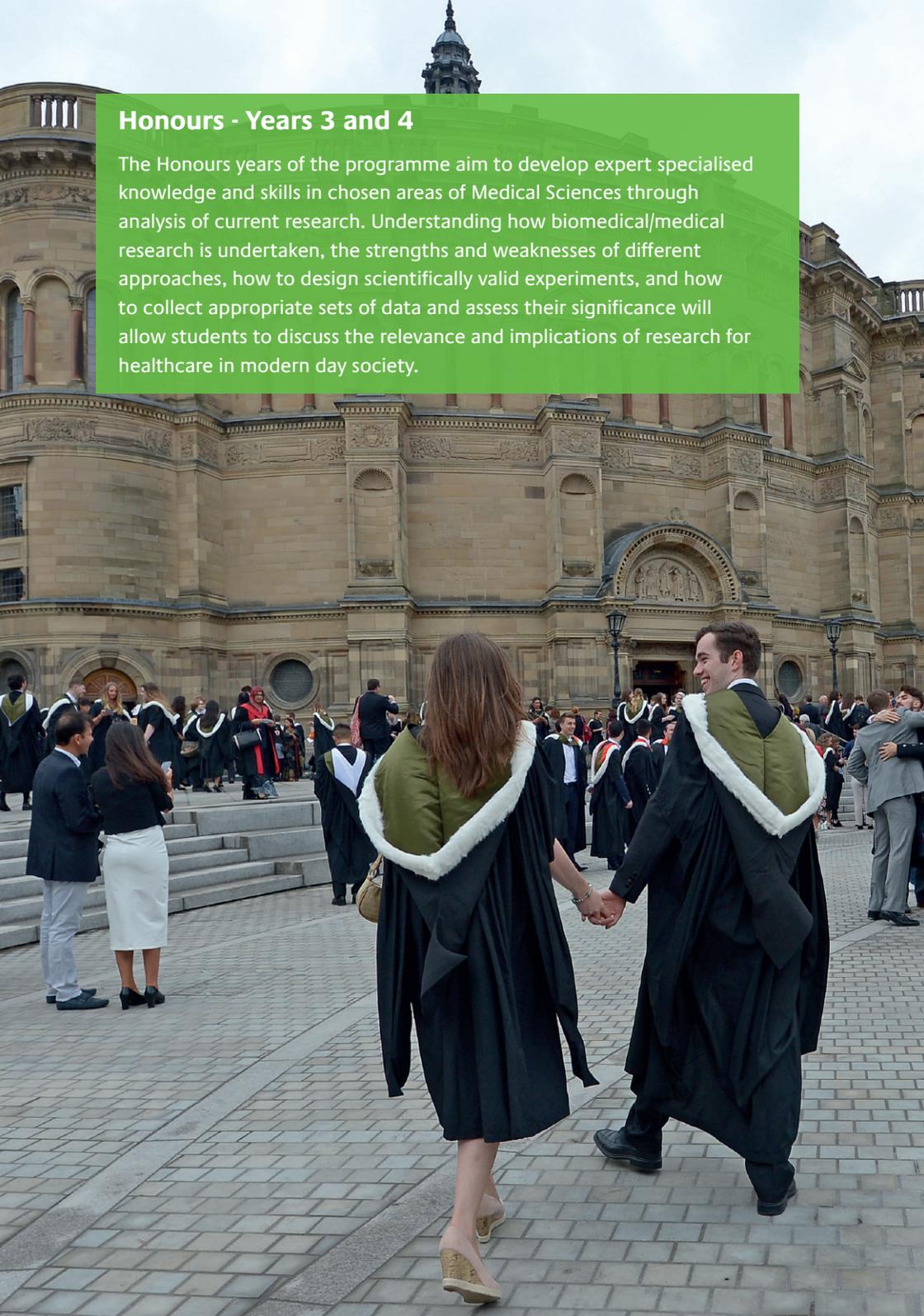


“Through the variety of topics in Medical Sciences, I have had a real chance to experience all aspects and identify what interests me the most - Reproductive Biology. My favourite course was Anatomy and Pathology 2, as it was an eye opener to a different way of learning with cadaveric specimens. University life has broadened my scope of people, experiences and cultures. I would definitely recommend it.”

Aliyah Ajmal, BSc (Hons) Medical Sciences, Year 2

Honours - Years 3 and 4

The Honours years of the programme aim to develop expert specialised knowledge and skills in chosen areas of Medical Sciences through analysis of current research. Understanding how biomedical/medical research is undertaken, the strengths and weaknesses of different approaches, how to design scientifically valid experiments, and how to collect appropriate sets of data and assess their significance will allow students to discuss the relevance and implications of research for healthcare in modern day society.



Students take three compulsory courses during their **Junior Honours year** (third year):

Health, Illness and Society 3 is unique to the Medical Sciences programme and introduces students to key concepts and debates about the relationship between health, illness and society. Patterns of health, illness and disability, how they are defined and experienced by individuals and populations, and how care is provided are all closely related to how societies are organised. The course draws on perspectives from the Social Sciences, Public Health and Medical Ethics to enable students to understand and critically reflect on the relationships between health and society in the UK and globally.

Clinical Biochemistry and Endocrinology 3 uses the cardiovascular system to demonstrate how biochemistry and analytical chemistry can be applied to medical diagnosis. The course covers areas such as blood pressure, tissue damage, enzyme release, electrolytes, and links to the respiratory, renal and reproduction systems.

Clinical Immunology and Haematology 3A demonstrates how the immune system develops, prevents infectious diseases and interacts with other body systems to limit or cause tissue damage. The course uses clinical case studies to emphasise the link between basic science and the clinical situation.

You will also study other self-selected (elective) courses in the Junior Honours year.

The **Senior Honours Year** (fourth year) has four compulsory components and two elective courses which open up areas of specific interest to each student. A Medical Sciences compulsory core course provides opportunities to discuss and critically analyse high-profile contemporary issues in the Medical Sciences. Elective courses either build on and develop themes introduced in the earlier year courses or introduce novel areas of study. The Senior Honours year also places students at the cutting edge of modern medical research by including a compulsory major research project involving either original laboratory-based medical research, clinically-related research or literature-based research working alongside internationally recognised research scientists and clinicians.

By the end of your Medical Sciences degree your understanding of medical science will enable you to contribute to and guide public debate on issues that affect healthcare for present and future generations.

Academic Requirements

In order to be considered for a place, all applicants must meet our standard academic requirements. Below we cover our standard entry requirements from the UK along with a link to our website for the less common qualifications we accept from elsewhere in the world.

All applicants must also meet our general university entry requirements including SQA, GCSE or equivalent English language requirements.

You can find the University's approved subject listing online at:

www.ed.ac.uk/studying/undergraduate/entry-requirements/approved-subjects

It is important to be aware that demand for places on our Medical Sciences programme is higher than places available so applicants who meet the standard academic requirements are not guaranteed an offer of studies. The majority of offers will be made to students who achieve grades above the standard academic requirement.



SQA Highers

ABBB by end of S5 or AB BBB/AABB from S4-S6, to include Biology and Chemistry. Mathematics and/or Physics are recommended. Qualified applicants are advised to take Biology and Chemistry at Advanced Higher level where possible. National 5: Mathematics at Grade C and English at Grade C.

Typical offer: AABB by the end of S5 or AAAA/AAABB in S4-S6.

Second year entry: Advanced Higher AB to include Biology and Chemistry.

GCE A levels

ABB, in one sitting, to include Biology and Chemistry. Mathematics and/or Physics are recommended. GCSEs: Mathematics at Grade C or 4 and English at Grade C or 4.

Typical offer: ABB in one sitting.

Second year entry: AAB, in one sitting, to include Biology and Chemistry

International Baccalaureate

Overall score of 32 points, including HL Biology and Chemistry, one at Grade 5 and one at Grade 6. Mathematics and/or Physics are recommended. SL: English at Grade 5 and Mathematics at SL Grade 4.

Typical offer: 36 points overall including HL Grade 6 Biology and Chemistry.

Second year entry: Overall score of 36 points, including HL Grade 6 Biology and Chemistry.

HNC/HND

We welcome applications from individuals holding HNC and HND qualifications for entry into the Medical Sciences programme. Given the wide range of HNC/HND qualifications available and the different grading of assessments it is difficult to provide specific standard academic requirements. Nevertheless, we would expect the HNC/HND to have substantial credit weighting in the Biological/Biomedical subject area and in Chemistry. Where grades are awarded alphabetically we would require a minimum of a B grade overall and where a Pass/Merit/Distinction classification is used we would require a minimum of a Merit overall.

For further information about various UK qualifications, please consult the information here:

www.ed.ac.uk/studying/undergraduate/entry-requirements

For countries outside the UK from which we commonly accept applications please use the following URL for up to date information.

www.ed.ac.uk/studying/international/country

Non-Academic Requirements

In terms of your personal statement we are looking for the following: Medical Sciences mentioned as your top priority; indicate importance/give examples of science in healthcare; aware of importance of medical research; mention career plans; work experience (lab based); explanation of relevance of work experience to chosen programme of study; other interests showing responsibility/representation.

Frequently asked questions

How will I be taught?

Through a combination of lectures, tutorials, practical work, problem-based learning and computer-assisted learning. In third and fourth year there is a greater emphasis on self-directed study and discussion sessions with academic staff.

How will I be assessed?

In-course assessment and exams are used in all years of the programmes. Your degree classification will be based on your performance in years 3 and 4 with a 1:2 weighting.

Where will I be taught?

Teaching takes place principally at both the University's Central Area and Courses making up the Medical Sciences degree programme are delivered either in the central University area around Teviot Place and George Square, or at the King's Buildings Campus. In addition, some specialised Senior Honours elective courses and research projects may also be located at the Edinburgh Royal Infirmary at Little France. You will have access to the University's libraries and computer labs. Study materials are available online.

Will I be able to transfer into a different programme at the University?

There are procedures in place for transferring to different degree programmes outwith Medical Sciences though transfers are governed by a range of factors such that the freedom to transfer is degree programme dependent and cannot be assumed. If you are interested in attempting to transfer degree programme you should first contact the School running the programme into which you wish to transfer to discuss their requirements. We would expect you to also discuss this with your Personal Tutor beforehand. It is important to understand that transfer to the MBChB programme is very unlikely.

Career opportunities

The Medical Sciences degree programme is aimed at the growing number of students planning careers in healthcare and healthcare-related professions, including medical postgraduate study/research, healthcare management and administration, healthcare/ medical teaching, medical writing/publishing, clinical trials management, pharmaceutical industry/drug sales, and clinical laboratory sciences.

The BSc (Hons) Medical Sciences degree is not a qualification in medical practice. Careers in Medicine, Dentistry, Pharmacy, Physiotherapy, Nursing, Clinical Practice, Veterinary Medicine and Forensic Science would all normally require periods of further study. For example, a number of UK medical schools offer graduate entry courses into Medicine and similar graduate entry routes are available into Dentistry, Physiotherapy and Veterinary Medicine. The BSc (Hons) Medical Sciences may provide a platform of knowledge and learning from which entry to these courses and their career paths might be considered.

Normally, up to five offers for entry into Year 2 of the Edinburgh MBChB degree programme will be made to final year BSc (Hons) Medical Sciences undergraduates. Application for these places will be through UCAS. Medical Sciences graduates applying to the MBChB will be required to have the appropriate academic qualifications, will have to sit the UCAT test, and will be interviewed in common with all other applicants. Offers will be conditional on the successful completion (upper second class degree or better) of the full Medical Sciences degree programme.



Student Support

Biomedical Teaching Organisation

The Biomedical Teaching Organisation (BMTO) is responsible for all aspects of management, administration and delivery of undergraduate and postgraduate teaching within Edinburgh Medical School: Biomedical Sciences. We guide you through your academic journey from pre-arrival and Welcome Week, the critical first steps in your studies which include important meetings and induction events, to graduation and your transition into a new career or postgraduate study. We will respond with help and advice to your questions about any subject at any stage of your studies.

Personal Tutor

Your Personal Tutor is there to help you make the most of your studies as an individual, providing you with academic advice and support as you progress through your university career. You will meet with your PT at least once every semester, but you can also arrange an appointment at any time during the academic year.

The benefits of the Personal Tutor system

- Supporting you to become a confident learner in your discipline
- Encouraging you to play an active part in your academic community
- Supporting you to develop and reflect on the range of graduate attributes required for success at university and beyond
- Supporting you to meet the challenges and opportunities of University life
- Reflection on your academic progress
- Development of your academic skills
- Reflection on your effective use of feedback



“I have thoroughly enjoyed my time in Edinburgh so far studying Medical Sciences. The programme provides a general overview of different disciplines such as neuroscience, biochemistry and genetics. The diversity offered within the programme really allows you to develop interests within certain areas and you have the opportunity to study these interests further during your final years of the course. For example, I have friends who enjoy reproductive biology but I prefer pharmacology and I am super excited to study that next year - the flexibility of the degree is just another great aspect of the programme! I really enjoyed Anatomy and Pathology 2, the teaching style is so different from other courses as you get to work with cadavers, which many other courses don't get the chance to. You are also being taught by staff members who are experts within their fields (and make the programme really engaging and are always happy to help!). The degree specific courses really make this programme stand out from other programmes which is what makes it so unique and interesting. Edinburgh itself is a gorgeous city and there are so many fun things to do, so you never get bored!”

Saira Rasool, BSc (Hons) Medical Sciences, Year 3

How do I find out more?

Further information about the Medical Sciences degree programme can be obtained from:

Biomedical Teaching Organisation
(BMTO)
The University of Edinburgh
Medical School
Teviot Place
Edinburgh, EH8 9AC
Tel: 0131 650 3160
Email: BMTO@ed.ac.uk

Further information and advice on applying to any of our programmes can be obtained from:

Undergraduate Admissions
The University of Edinburgh
The Chancellor's Building
Edinburgh Bioquarter
49 Little France Crescent
Edinburgh EH16 4SB
Tel: 0131 242 6407
Email: medug@ed.ac.uk

For more detailed information on degree structure and content, please also see:
www.ed.ac.uk/studying/undergraduate/degrees





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