Intercalated degrees for medical, veterinary and dental students

Choose Bristol
All UK and international medical, dental and veterinary students can intercalate at our prestigious University, set in the friendly, vibrant city of Bristol.
### What is intercalation?

An intercalated award is an additional undergraduate degree (BSc or BA) or master's level programme that you complete in an intensive year away from your normal medical, dental or veterinary studies. You can study a BSc or BA after two or more years of study on your professional programme. You need to complete at least three years of your programme for entry on to our master’s level programmes.

### What can I study?

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### Entry requirements

Entry requirements
Teaching and research excellence
Bristol is a top 50 university according to the QS World Rankings 2018, and was placed joint fifth with the University of Oxford for research intensity in the UK’s latest Research Excellence Framework (REF 2014). This means that the vast majority of our teaching staff are active researchers, and that you will study with experts who bring the latest research developments into the lecture theatre, the seminar room and the laboratory.

Accommodation
Students who intercalate from other institutions are guaranteed an offer of accommodation under the terms of Bristol’s accommodation agreement for first-year undergraduate students.

bristol.ac.uk/accommodation/undergraduate/intercalating-students

Benefits of intercalation
Pausing your studies to intercalate with us provides a whole host of benefits for your career and personal development including the chance to:

• delve deeper into a subject or specialism that interests you;
• study something completely different from your current subject;
• explore current trends in cutting-edge research alongside international experts;
• focus on a research project, which will provide you with an excellent grounding in research methods;
• present your research at an academic conference or as a journal publication;
• develop career-enhancing transferable skills, eg critical scientific thinking, evaluating evidence, researching literature and academic writing.
• improve your career prospects in a competitive graduate market;
• make new friends away from your professional programme;
• experience life as a student away from your clinical programme and its extensive timetable.

How to apply
Please apply directly to us using our online application form at bristol.ac.uk/intercalate/apply
Support while you intercalate

Student services and support
Choosing to intercalate is a significant decision and there is a lot to consider before you apply.

For example, you will need to think about the additional costs of another year at university, how you will deal with different teaching and assessment methods, and how you will feel about re-joining your professional programme a year behind your peers.

We want our students to have the very best experience with us so, to help you with any concerns, the University offers a wealth of support services including the Student Funding Office, a comprehensive range of study skills sessions and the Student Services team, who are on hand to offer plenty of support and advice should you need it.

bristol.ac.uk/study/undergraduate/student-life/wellbeing

Fees and funding
Please check our online course finder for the current tuition fees for your chosen intercalated degree.

bristol.ac.uk/study/undergraduate/search

Funding for intercalation varies depending on where you live and our Student Funding Office can provide you with up-to-date information about the financial support available.

bristol.ac.uk/fees-funding/undergraduate/intercalation

‘I have been fantastically well supported at Bristol. I lived in halls of residence, where administrative and pastoral staff were on hand to help me settle in and with any issues throughout term. I was also allocated a personal tutor from within the Medical School, who looked out for me in my studies and could be contacted with any academic or personal queries.’

Patrick, MB ChB Medicine

bristol.ac.uk/study
The city
Our students always say how much they love the city of Bristol – from its friendly people and fantastic music scene to its vibrant harbourside, green spaces and buzzing centre. Bristol combines the tradition of a historic port city with the atmosphere of a fast-paced, dynamic and modern metropolis. Its flourishing cultural life reflects the diversity of its population, which has at least 187 countries of birth represented. Considered to be the capital of south-west England, our cosmopolitan city has a strong, independent spirit.

The city holds a number of prestigious accolades. University of Bristol was voted the best university for city life in the 2015 Whatuni? Student Choice Awards. Bristol is one of only six UK science cities and was named Europe’s best small city of the future by influential business publication FDi magazine. Best of all, Bristol is the perfect size, offering all the excitement of a big city packed into an area you can easily explore on foot or by bike.

The University
Alongside Bristol’s impressive city credentials, the University plays host to many sports clubs, societies and volunteering opportunities.

Our excellent sports and fitness facilities will help you stay on top of your game, with over 60 sports clubs ranging from gliding to volleyball. The University of Bristol Students’ Union co-ordinates a huge range of activities for you to get involved in and is home to more than 300 student groups ranging from wine to tea appreciation and hot air ballooning to photography. Our students also contribute an impressive 100,000 hours each year volunteering on projects such as painting the homes of older Bristol residents or working in local primary schools.

If you choose to intercalate with us, you will quickly discover that Bristol is an exciting and vibrant place to spend your intercalation year.

bristol.ac.uk/study/undergraduate/student-life
We welcome applications from overseas students who would like to intercalate. Bristol is a truly international university and is a highly supportive environment, where we encourage personal as well as academic growth.

**The Bristol experience**

Bristol is one of the most popular and successful universities in the UK. We continually invest in our facilities, training and technology to give you the best opportunity to succeed. Welcoming students and staff from over 120 countries with an exciting diversity of backgrounds makes for a stimulating and dynamic community.

Bristol is situated in south-west England, surrounded by countryside, but only 90 minutes from London by train. It is well connected as a major road and rail network hub and has a busy international airport. The region is known for its engineering, IT and creative industries and the city is home to scientists, engineers, academics and artists.

**Advice for international students and families**

As well as accessing the full range of support services available to all students at the University, you will be able to benefit from the support offered by the International Office, for example if bringing your family to the UK, and when adjusting to UK systems.

Our International Student Visa Advisers can offer practical support for your visa application, helping to ensure that you understand your visa conditions. They are qualified experts and are here to make sure your visa arrangements are sorted, allowing you to focus on your studies.

**A warm welcome**

The University runs an Arrivals Service at four different arrival points, including London Heathrow and Bristol International Airport, to make your arrival into the UK as easy as possible.
BSc Biochemistry

Biochemistry is a fascinating discipline which allows you to explore the molecular basis of biological systems. Bristol is one of the best places to study biochemistry in the UK, and has a 50-year track record of teaching and research excellence.

This course combines lectures, workshops, small-group tutorials, reading of primary literature and research projects. You will be supported throughout by a personal tutor.

Intercalators leave the course with a strong grounding in basic science and its application to disease states. You will also gain excellent communication skills developed through oral and written presentations, and the ability to critically evaluate experimental data and the conclusions drawn from them – skills that are highly valued by the medical sector and industry.

What will I study?

Advanced Cell Biology covers topics such as: cell migration during wound healing and cancer; the mechanisms by which molecules are moved within and between cells: techniques for imaging these behaviours.

Cellular Information covers topics such as damage and repair of DNA; regulation of gene expression; the role of signalling pathways in cancer and diabetes.

The Dynamic Proteome examines how proteins are built, folded into intricate 3D shapes and assembled with other components to form molecular machinery that conducts the chemistry of life.

Advanced Options in Biochemistry may include options in Neurobiochemistry, Cancer, Molecular Basis of Disease, Synthetic Biology, DNA-protein Interactions, and Protein Science in Therapy and Technology.

‘I’ve had an unforgettable year and have learnt so much both theoretically and practically which I hope to transfer to medicine. I now appreciate the frustration and excitement of research.’

Florence, MB ChB Medicine

Research projects

A highlight of the year is your practical project, during which you will conduct original research in one of our world-class research laboratories. In addition to a wide range of wet-lab based projects, we also offer computer-based projects for students who wish to gain experience in the analysis of the large bodies of genetic and proteomic data being generated by modern high-throughput biological techniques.

Our students have produced projects in areas such as:

- insulin-like growth factors and cancer
- investigating the cellular uptake of nanoparticles
- the VPS35 (L774M) mutation in Parkinson’s Disease.

Students also write a literature review in which they consider current scientific literature and write a report in a specialist area.

Contact: School of Biochemistry

Tel: +44 (0)117 331 2167
Email: bioc-office@bristol.ac.uk

bristol.ac.uk/intercalate
BSc Bioethics

Intercalating students use this course to inform and develop their clinical practice, with some going on to become members of ethics committees, such as Clinical Ethics Advisory Groups. Others go on to contribute to scholarship in the field, conducting research and publishing in leading journals and books.

‘The intercalated BSc Bioethics was arguably the most important and certainly the most enjoyable part of my undergraduate medical training, and has provided me with skills I use on a daily basis in my career as a GP.’
Dr Ruth Evans, MB ChB Medicine

What will I study?

The course comprises four units and a substantial dissertation:

• Introduction to Bioethics
• Introduction to Medical Law
• Medicine and Law – taught in the Law School
• Ethics – taught in the Department of Philosophy
• Dissertation.

Contact: Centre for Ethics in Medicine
Tel: +44 (0)117 331 4450
Email: brms-ethicsinfo@bristol.ac.uk

One of the first intercalated courses in healthcare ethics and law offered by a UK university, this course has been run by Bristol’s Centre for Ethics in Medicine since 1998. The centre is an internationally recognised leader in research and teaching in bioethics. Our track record of success means that you will study with expert tutors from across the field of bioethics and, in particular, experts in philosophical ethics and medical law.

As an intercalating student you will:

• learn about the major trends, theories and arguments in bioethics and medical law;
• develop your ability to think through the issues for yourself;
• improve your skills in researching, writing and presenting;
• present and write about ideas that interest you, in assessments that you propose and develop.

The course is delivered through staff-led seminars, lectures and tutorials, plus student presentations and individual supervision. We also encourage student-directed study throughout the course.
Embedded within the internationally recognised School of Cellular and Molecular Medicine, this unique course offers a fascinating insight into this field as well as an opportunity to explore the scientific background to a possible area of specialisation in your future career.

What will I study?

The course comprises four units plus a research skills unit which includes a substantial research project. Students choose at least three of the following four lecture units.

**Developmental Genetics and Embryonal Cancers** outlines how critical molecules, pathways and mechanisms regulate cell growth and development. You will learn how defects and diversions in normal growth control can lead to developmental diseases, and the aberrations that contribute to carcinogenesis specifically.

**Cancer Mechanisms and Therapeutics** shows how cancers develop and, in particular, which key genes and growth signalling pathways become defective and lead to the development of common adult cancers. You will discover how a knowledge of defective signalling pathways can reveal novel measures to prevent cancer and new treatments for the early detection and cure of cancer.

**Advanced Immunology** is firmly at the cutting edge of research; this in-depth unit explores the cellular and molecular events that drive immune responses. It illustrates the development and differentiation of immune cells, how the immune system processes and recognises antigens and how immune cells home to the tissues of our body where they are needed, and highlights the consequences of their communications. It demonstrates that the immune system needs control and shows how this is achieved to avoid disease.

**Immunopathology and Applied Immunology** provides you with a comprehensive knowledge of diseases which develop as a consequence of inappropriate immune responses and as a result of deficiencies in the immune system. It also introduces you to disease processes and how this knowledge is used to manipulate the immune system through vaccination and other immunotherapies to fight infection, allergy, autoimmunity and tumour development.

You can opt to take an alternative fourth unit from the following:

- Regenerative Medicine
- Haemopoietic Stem Cell Transplantation
- Medical Virology
- Frontiers in Infectious Diseases
- Medical Microbiology.

**Research skills**

The Research Skills unit includes training in data handling and a substantial laboratory or literature-based project, which could see you publishing your work for the first time. Our students have researched topics such as:

- improving the bioavailability of anti-cancer therapy (lab based);
- splicing factors in childhood cancer (lab based);
- maternal-foetal cell transfer: an important immunological phenomenon? (literature based).

**Contact: School of Cellular and Molecular Medicine**

Tel: +44 (0)117 331 2050
Email: enquiries-cellmolmed@bristol.ac.uk

bristol.ac.uk/intercalate
At the School of Cellular and Molecular Medicine we aim to inspire you with our mission to turn science into medicine. As an intercalating student you will join our current third-year undergraduates learning what it is like to be involved in biomedical research and how to think like a scientist. You will develop critical and analytical skills which will benefit you enormously in your future career as a doctor, dentist or vet.

‘I loved intercalating at the School of Cellular and Molecular Medicine. The project was my favourite part of the year. I was assigned two supervisors, one of whom was a PhD student, which was really helpful.’
Amy, MB ChB Medicine

Bristol is a powerhouse of research expertise in the field of cellular and molecular medicine. The UK’s Research Excellence Framework 2014 placed Bristol first for the impact of our research in clinical medicine, which incorporates this discipline. As a result, we can offer outstanding teaching by active researchers who bring the latest developments into the lecture theatre and laboratory.

What will I study?

The course comprises four lecture units and a research skills unit which includes a substantial research project.

Students choose four from the following nine lecture units:
• Regenerative Medicine
• Haemopoietic Stem Cell Transplantation
• Developmental Genetics and Embryonal Cancers
• Cancer Mechanisms and Therapeutics
• Advanced Immunology
• Immunopathology and Applied Immunology
• Medical Virology
• Frontiers in Infectious Diseases
• Medical Microbiology

*Note that some combinations of units will lead to the award of one of our other degree courses, ie Cancer Biology and Immunology, Medical Microbiology, or Virology and Immunology. This is not a problem because students can transfer freely between any of our degree programmes.

Research skills

The Research Skills unit includes training in data handling and a substantial laboratory- or literature-based project. Lab-based research will see you working as part of a world-leading research group either at the School of Cellular and Molecular Medicine or in a local hospital. A literature-based project could involve data analysis or a literature review supervised by one of our experts.

Students have researched projects such as:
• The role of stem cells in the pathology and treatment of osteomyelitis (lab based);
• Tissue-engineered cartilage grafts for the treatment of osteoarthritis (lab based);
• The role of stem cells in breast cancer progression (literature based).

Contact: School of Cellular and Molecular Medicine
Tel: +44 (0)117 331 2050
Email: enquiries-cellmolmed@bristol.ac.uk

bristol.ac.uk/intercalate
Childhood Studies (BSc)

Childhood studies is the social science of childhood and adolescence. This course explores the social factors that underpin many key aspects of childhood, including health and development. It will benefit intercalating students who are considering a career working with children and young people or their families, and those interested in developing an holistic approach to their future practice.

This interdisciplinary subject combines theoretical understandings from areas such as psychology, sociology, education, policy studies, law, health and social care, anthropology and history. It brings these perspectives to an understanding of children and young people from birth to 19 years of age, and of the political, economic and social environments in which they grow up.

You will explore this subject with internationally recognised academics whose work is focused on children and families, developing your understanding of childhood from diverse perspectives. You will become an active researcher through research projects and your dissertation, fostering highly sought-after skills that will equip you for a wide range of careers.

Studying in a friendly, supportive community at the School for Policy Studies, you will join our undergraduates on their final year of the course.

‘Intercalating has given me a more well-rounded approach to university-level education, with a new ability to critique the literature I read rather than taking it at face value. It’s taught me a different way of learning, developing an inquisitive and intellectual approach to solving a problem. The course really encourages discussion surrounding the most recent research, and you have relative freedom to pursue the topics you find particularly interesting. The course coordinators were really lovely and willing to help, as were the other Childhood Studies students. I could not recommend this course more highly. For anyone who wants to work with children, this course is for you!’

Hannah, MB ChB Medicine

What will I study?

You will complete either a substantial research-based dissertation and four taught units, or a smaller, independent guided-study project and five taught units, selected from a range of options such as:

• Play and Creativity
• Youth, Sexualities and Gendered Violence
• Therapeutic Work with Children
• Family Support
• Child and Adolescent Psychology
• Changing Families and the State
• Youth Policy and Social Welfare
• Language and Literacy
• Children and Young People in the Law
• Inter-professional Working
• Youth Justice
• Children in a Global Context
• Education, Schooling and Diversity
• Child Nutrition, Activity and Health.

Contact: School for Policy Studies
Tel: +44 (0)117 954 6755
Email: jo.staines@bristol.ac.uk

bristol.ac.uk/intercalate
The Functional and Clinical Anatomy intercalated programme will provide students from professional programmes with a detailed knowledge of human anatomy that is related to function and, ultimately, dysfunction through the study of clinical anatomy. A major component of the degree will be dissection. This new programme has been instigated in response to student demand and is designed to complement pre-clinical basic science teaching. It also utilises the excellent resources available with the Centre for Applied Anatomy (CAA).

‘I profess to learn and to teach anatomy not from books but from dissections, not from the tenets of Philosophers but from the fabric of Nature.’

What will I study?
In small groups, students will dissect a cadaveric subject and will be expected to investigate anatomical variations, pathologies and evidence of procedures present in their subject, building this into an extensive research portfolio. This work will be supported by integrated functional and clinical seminars for each of the regions of the body.

Advanced Dissection and Research Portfolio
This dissection unit underpins the entire programme and dictates when each body region is discussed in seminars. Over 24 weeks, students will dissect their subject in small groups, taking note of evidence of clinical intervention – often surgical, pathology and anatomical variation. Each cadaveric subject will be scanned prior to dissection and the MR images will be available to the group as part of preparation for sessions. Findings (both dissection and MR) will be investigated and presented in the research portfolio. In addition to the thorough exploration of diverse themes, such as anatomical variation and pathology, and ethics and law relating to body donation, Advanced Dissection fosters transferable skills, such as manual dexterity and haptic sense.

Functional and Clinical Anatomy
Functional and Clinical Anatomy seminars, led by a range of basic scientists and clinicians, will be integrated with timetabled dissection sessions to give an advanced perspective on structural, functional and clinical anatomy of a given body region.

Methods, Communication and Translation
In addition to critical thinking abilities, this unit will provide students with a basis in research skills ranging from design to communication. Ultimately, many of the skills taught will be translatable and aptitude for a number of key outcomes, eg lay articles, posters, etc, will be assessed and feedback provided.

Contact: Centre for Applied Anatomy
Tel: +44 (0)117 928 8929
Email: student-admin-southwell@bristol.ac.uk
Hosted by the Medical Research Council Integrative Epidemiology Unit at the University of Bristol, this course will introduce you to the genomics revolution and how it is changing medicine, from genetic influences on complex disorders and epigenetic regulation, to precision medicine and personal genomics. With genome-wide genetic risk profiles now commercially available to the public for less than £100, the goal is to equip you with the tools you need to understand and interpret this information when you encounter it in everyday practice.

"The intercalated BSc Genomic Medicine has provided me with important research skills for my future career, as well as giving me an insight into a new, exciting area of medicine that will only become more relevant with time."

Jess, MB ChB Medicine

What will I study?

The Human Genome
The structure of our genome and the inhabitants of the genomic zoo, how genes are regulated, how genomes vary between people and how DNA sequence relates to epigenomics, transcriptomics, proteomics and metabolomics.

Genomic Data Science
Understanding human genetics through essential statistical and computational skills that will equip you to interpret genomic data in the laboratory and clinic. Topics include genome-wide association and sequence analysis, genetic risk prediction, data science and bioinformatics, twin and family studies and practical genomics coding skills. We only assume knowledge of topics encountered in the first two years of a medical degree, and the teaching is specifically tailored to intercalating medical, dental and veterinary students.

Genomic Medicine
Specific clinical applications of genomic knowledge, including topics such as clinical genetics of rare disorders, genomics of cardiovascular health and disease, behavioural and psychiatric genomics, cancer genomics, genomic prognosis and precision medicine.

The Population Laboratory
Genomics in human populations and how they have evolved over evolutionary time, modern-day commercial genomic profiles, genomic self-screening by the public, how people respond to genomic information, legal and ethical implications of this, and the importance of gene-environment interactions.

Cracking Causality
Using genetic data to discover the environmental causes of disease. Topics include Mendelian randomisation and other designs for causal inference, and translation of causal discoveries to new drugs and new policies.

Research Project
A four-month research project based in one of the world-leading applied human genomics centres at Bristol, an analytic review of the human genomics literature, or an analysis of your own genome-wide genetic risk profile.

Contact: Bristol Medical School
Tel: +44 (0)117 331 4521
Email: bsc-in-genomic-medicine@bristol.ac.uk

bristol.ac.uk/intercalate
Global Health (BSc)

Globalisation requires tomorrow’s doctors to be aware of global health issues, have a broad knowledge of disease and an understanding of both the social determinants of disease and cultural responses to illness.

This exciting course was developed in response to this need, taking full advantage of Bristol’s multidisciplinary research expertise in this area and attracting students who are passionate about global health issues. In fact, our students have been involved at every stage of the course, helping to develop it into this popular BSc course aimed specifically at intercalators.

The course will introduce you to the importance of global health issues to medical practice around the world. It will also develop your ability to critically evaluate and think strategically about these issues.

‘I intercalated in Global Health this year. It has been a wonderful year and I enjoyed it thoroughly. The lecturers were amazing and inspiring and the course definitely broadened my perspectives.’

Priya, MB ChB Medicine

We use a range of student-centred approaches to teaching and learning which are designed to reflect the working environment of multidisciplinary global health settings. Self-directed learning underpins the course and you can expect to actively contribute throughout.

Each week, you will complete preparatory work before teaching sessions. Following structured tuition, you will work, typically in small groups, and participate in presentations and discussions. For instance, a session may commence with learning about the epidemiology and evidence-based interventions relevant to an important health issue. After this, you might work through a range of scenarios tackling the issues you could face when addressing the problem in a developing country in a non-governmental organisation.

What will I study?

The course consists of the following taught units and a dissertation:

- Global Burden of Disease
- Health Policy in an International Context
- Inequalities in Health
- Anthropology and Global Health
- Gender, Conflict, Migration and Human Rights
- Global Dimensions of Disability
- Global Child Health.

Your dissertation is an opportunity to explore an area of interest in depth, with some of our students choosing to finance a dissertation project outside the UK.

Contact: Centre for Child and Adolescent Health
Tel: +44 (0)117 331 4099
Email: bsc-globalhealth@bristol.ac.uk

bristol.ac.uk/intercalate
Global Wildlife Health and Conservation (MSc)

What will I study?

Cutting-edge topics include animal capture and handling techniques; the assessment, stabilisation and transportation of injured animals; methods for improving the welfare of captive animals; concepts in behavioural ecology; endangered species breeding programmes; the reintroduction of captive populations to the wild; practical conservation strategies; and the management of protected areas. The curriculum also delivers a comprehensive introduction to wildlife disease ecology, surveillance and control.

A research element from May to August provides an opportunity for you to carry out an applied project on a wildlife topic of interest to you. You will undertake a literature review, collect and analyse data, and present your results as a written report suitable for publication. In previous years many of these projects have been carried out at Bristol Zoo or in Australia.

Careers

This course has been carefully designed for those aspiring to a career in wildlife health, conservation and management. Potential employers include national parks, zoological gardens, animal rescue centres, wildlife hospitals, environmental NGOs, conservation charities, and government agencies with statutory wildlife responsibilities, both in Britain and overseas.

Previous students have gone on to work for a range of employers, including the Environment Agency, Cheetah Conservation Botswana, Chester Zoo, the Durrell Wildlife Conservation Trust, the Sloth Institute Costa Rica, the World Wide Fund for Nature, Frontier, Ecofieldtrips in Singapore and Natural England. Our graduates are now spread across the world, working to achieve wildlife conservation from positions of influence in Europe, North America, South America, Asia and Africa.

Contact: Bristol Veterinary School

Tel: +44 (0)117 928 9630
Email: nicola.minton@bristol.ac.uk

bristol.ac.uk/intercalate
Health Sciences (BSc)

“This course has given me an insight into a world of medical research I never even knew existed. It combines studying a different aspect of medicine with a slightly more relaxed environment than the first two years of my medical degree.”
Ian, MB ChB Medicine

What will I study?

The course consists of five units and a research project:

- Introduction to Research in Health Sciences
- Laboratory Research Methods
- Clinical Research Methods in Chronic Disease
- Molecular Basis of Disease
- Diseases of the Nervous System
- Research Dissertation.

Your dissertation is a chance to embark on an area of basic or clinical research in more depth supported by expert supervision and based in the world-class laboratories of the University of Bristol and hospitals across the city of Bristol.

Some examples of dissertation titles include:

- The effects of eating rate on the brain using functional MR imaging.
- Understanding osteoarthritis: how does weight-bearing influence the development of osteoarthritis in extreme high bone mass?
- Exploring the molecular biology of diabetic kidney disease.
- Tissue engineering grafts for corrective surgery of patients with congenital heart defects using perinatal stem cells.
- The Endothelial Glycocalyx in Health and Disease in Cats and Dogs.

Contact: Bristol Medical School
Tel: +44 (0)117 331 1476
Email: bsc-in-health-sciences@bristol.ac.uk

This course offers intercalating students the opportunity to study the underlying scientific basis of disease and how this can transform clinical practice. It equips future clinicians with the skills to understand, critique and undertake medical research in the 21st century.

You will learn how research discoveries at the bench can turn into bedside practice in a broad range of systems including musculoskeletal disease, metabolic disorders, renal medicine, cardiology, respiratory medicine and neuroscence.

Students benefit from learning with academics and clinicians who collectively create a research environment ranked among UK universities’ top five for research in the Research Excellence Framework (REF) 2014. Bristol was also placed first for research impact in clinical medicine, public health, health services and primary care.

Our students learn in small groups in lectures, seminars, tutorials and workshops, which are situated in excellent teaching and research facilities such as the Dorothy Hodgkin Building and Southmead Hospital’s Learning and Research Building. We welcome medical, veterinary and dental undergraduates.
Offering an excellent grounding in research methodology as well as substantial practical experience, this programme is aimed at medical, veterinary and dental intercalators as well as clinical and bioscience graduates.

Bristol offers a dynamic and challenging environment for your research. We are ranked among the UK's top five universities for research by the Research Excellence Framework (REF) 2014 and placed first for impact in clinical medicine, public health, health services and primary care.

What will I study?

The core of the programme is an eight-month research project in a field that interests you. This could be either a fundamental bioscience project, translational research, or an epidemiological population health study.

You will be based within one of the University of Bristol's internationally recognised health science research groups, with opportunities to immerse yourself in both laboratory and clinical-based environments. Your research will culminate in a 10,000-word thesis. You will also present your findings at a research symposium and defend your work in a viva voce (oral exam).

Taught units deliver intensive research training which covers scientific writing, critical appraisal of scientific literature, presentation skills, experimental design, statistics and grant writing, giving you the key skills for a successful research career.

‘Intercalation was great for me because it allowed me to develop my knowledge of an area I found interesting. It is also a great opportunity to use that innovative side of yourself that is often neglected in medicine because of the large workload. On this course you are given the opportunity to be creative scientifically and develop your own ideas.’
Andrew, MB ChB Medicine

Contact: Faculty of Health Sciences
Tel: +44 (0)117 331 1604
Email: healthsciences-mres@bristol.ac.uk

bristol.ac.uk/intercalate
Medical Humanities (BA)

Grounded in the disciplines of English literature and philosophy, this course demonstrates how the humanities can be used to illuminate the practice of medicine and medical research. We aim to inspire the next generation of doctors, dentists and vets to be emotionally and cognitively intelligent, culturally aware and philosophically inquiring.

You will learn some of the key skills of literary and philosophical analysis and use these to broaden your understanding of the suffering individual, their medical care and carers, and the historical and epistemological basis on which that care is delivered.

Studying the humanities involves a considerable amount of self-directed learning and independent reading. Compared to medicine, dentistry and veterinary science, you can expect to participate more actively during seminars and spend more time preparing for them in advance.

To ease the transition between these two learning styles, we provide a wealth of support for our intercalating students including:

• the Oakhill Study Group, running every two weeks and facilitated by practising and academic medical staff, which will support your journey through the units and help you place the experience of this year in the context of your past and future medical career;
• introductory seminars in English and philosophy;
• initial reading to prepare you before you start the course;
• advice and feedback from our academics on your writing.

‘The philosophy unit on Death, Dying and Disease really made me reconsider my own beliefs and views and challenged my basis for them. It was refreshingly non-medical and yet very relevant to medicine, so I could think about how I might deal with dying patients and their fears about death and disease.’
Ellie, MB ChB Medicine

What will I study?

Learning alongside current arts students for most of your course, you will study compulsory units in Philosophy and History of Medicine, and Literature and Medicine. Optional units include Philosophy of Natural and Social Science, or Death, Dying and Disease.

You will also write a supervised, semi-independent dissertation which explores a particular aspect of the medical humanities programme and demonstrates advanced research and writing skills.

Contact: Department of Philosophy

Tel: +44 (0)117 928 8147
Email: sart-ibamhadmin@bristol.ac.uk

bristol.ac.uk/intercalate
At the forefront of some of the most challenging aspects of global health, this degree will equip you with clinically relevant knowledge and an invaluable insight into the research that is happening at the frontline of medical microbiology.

What will I study?

The course comprises four lecture units and a research skills unit which includes a substantial research project. Students must take the following three compulsory lecture units:

**Medical Microbiology** describes how bacteria and fungi become resistant to antimicrobial agents and the genetic mechanisms involved in the spread of resistance. It covers the clinical problems caused by key drug-resistant bacteria in healthcare settings, and how changes in healthcare have exacerbated this problem. You will also study methods for tracking and controlling healthcare-associated infections and approaches to combatting drug resistance.

**Medical Virology** discusses how viruses are responsible for millions of deaths and countless episodes of ill health each year around the world. Effective vaccines do exist but in many cases, good vaccines remain elusive. This unit examines these challenges, looking at the main viral diseases in humans such as HIV, hepatitis B and C, herpes, papilloma, influenza, measles and rotaviruses. The unit also reviews the increasingly sophisticated area of diagnostic virology.

**Frontiers in Infectious Diseases** reveals the key steps in pathogen life cycles and how these are dealt with at a molecular level by defence mechanisms in the host. It will show how this knowledge allows us to devise both prophylactic and therapeutic interventions and will develop an understanding of the key research methods that are currently used to study viral and bacterial pathogens within mammalian hosts.

**Optional units**

Students choose a fourth unit from the following options:

- Developmental Genetics and Embryonal Cancers
- Cancer Mechanisms and Therapeutics
- Advanced Immunology
- Immunopathology and Applied Immunology
- Regenerative Medicine
- Haemopoietic Stem Cell Transplantation.

**Research skills**

The Research Skills unit includes training in data handling and a substantial laboratory- or literature-based project. This will develop the skills you need to carry out a research project in the field as well as the ability to read, analyse and interpret scientific data presented in the literature. Some examples of student projects include:

- Bacterial methyl transfer reaction in and beyond antibiotic resistance.
- The variable nature of CEACAM binding by Moraxella catarrhalis.

**Contact: School of Cellular and Molecular Medicine**

Tel: +44 (0)117 331 2050
Email: enquiries-cellmolmed@bristol.ac.uk

bristol.ac.uk/intercalate
‘Studying at the University of Bristol offered a unique learning experience in a fun and vibrant city. I worked alongside some of the leading neuroscience researchers in the field of synaptic plasticity, expanding my understanding of the subject and gaining confidence in my own research capabilities.’

Anastasia, BM BS Medicine

Neuroscience is one of the fastest growing areas in biomedical sciences. This course will introduce you to discoveries that have transformed our understanding of the brain and the nervous system and helped to develop new treatments for disorders which affect millions of people.

Bristol is home to many internationally acclaimed research groups across the field of neuroscience, which means that you will learn from exceptional academics who ground their teaching within this wealth of expertise. The course will develop your practical experience as well as your critical thinking and report-writing skills, all invaluable for your future career as a doctor, dentist or vet.

What will I study?
The year begins with Concepts and Skills, a mandatory unit which introduces you to the key skills you will need to interpret, write about and critically analyse scientific papers. The rest of the course will see you studying at the forefront of neuroscientific research, choosing three more units from the following groups:

- Synaptic Plasticity or Sensational Neuroscience or Heart in Health and Disease (B unit)* or Pharmacology of Ion Channels and Synaptic Transmission (B unit)*
- New Horizons in Medicine or Neuroscience of Pain or Synaptic Cell Biology or Go With the Flow, the Urinary Tract from Beginning to End (B unit)* or Receptor Signalling and Non-drug Therapies (B unit)*
- Neurological and Psychiatric Disorders or Brain and Behaviour or Cardiovascular System in Health and Disease (B unit)* or Pharmacology of the Nervous System (B unit)*.

*NB students may only select one B unit.

Research project
You will produce a substantial piece of original research, presenting your findings in a dissertation and an oral presentation. This exciting part of the course could involve a lab-based project where you will design, conduct and analyse your own experiments within an active research group led by one of the school’s neuroscience staff. Alternatively, you could research the scientific literature in a particular discipline and produce a detailed review which proposes a programme of further research. Another option is to develop a teaching project where you might assess current teaching methods and materials on the University’s science courses, or develop a new teaching programme in partnership with science teachers at a local secondary school.

Contact: School of Physiology, Pharmacology and Neuroscience
Tel: +44 (0)117 331 2385
Email: phph-studentadmin@bristol.ac.uk
Pharmacology is the study of the action of ‘drugs’ in the widest possible sense, encompassing many types of chemicals and medicines that affect the functioning of the body.

In this course, spanning the disciplines of physiology, biochemistry, molecular biology and neuroscience, you will learn what drugs are, how they work and what they do. The course will introduce you to the approaches that are used to design and develop new drugs by investigating the effects of substances on single molecules (receptors, ion channels), individual cells, organs and the whole body, offering intercalating medical, dentistry and veterinary science students clinically relevant insights to take back into their training.

This research-driven course is based within the School of Physiology, Pharmacology and Neuroscience, which is internationally recognised for its teaching and research. Our research focuses on neuro and vascular pharmacology, especially receptor regulation and signalling.

You will learn about new and proposed therapeutic approaches to treating disease states such as Alzheimer’s disease, schizophrenia, neuropathic pain and depression. We will introduce you to the innovative techniques that we use in the school through a series of advanced technical workshops.

This course delivers a rigorous training for many careers in bioscience and medicine, alongside transferable skills valued by employers beyond the scientific world. You will leave with skills in reading scientific papers, experimental design, data analysis, scientific writing, biomedical research, presenting and ethics, all of which will stand you in good stead for any career path you decide to take.

‘Not only is the course content relevant to medicine, it also equips you with an understanding of scientific literature, drug discovery and the pharmaceutical industry. For me, the most enjoyable part of the year was the research project. I found it fascinating to be involved day-to-day in a laboratory, to work with lecturers and their research groups and to carry out and interpret experiments.’
James, MB ChB Medicine

What will I study?

The course consists of five mandatory units:

- Concepts and Skills
- Pharmacology of Ion Channels and Synaptic Transmission
- Receptor Signalling and Non-drug Therapies
- Pharmacology of the Nervous System
- Research Project.

The final supervised research project allows you to explore an area of interest in much greater detail and most students see this as the highlight of the course. It is an opportunity to work full time in a research laboratory to pursue a novel piece of research. It is a substantial piece of work that takes 6-8 weeks to complete and will train you to design your own experiments and analyse the results. Some students opt for a project during which they interrogate the published scientific literature and suggest future experiments or carry out an in-depth analysis of experimental data. All projects are assessed by a dissertation and a poster presentation.

Contact: School of Physiology, Pharmacology and Neuroscience

Tel: +44 (0)117 331 1840
Email: phph-studentadmin@bristol.ac.uk
Physiology is the study of animal, including human, function across cells, tissues, organ systems and the whole body. This course demonstrates the mechanisms that operate in a living organism, how they are controlled and how they interact in biochemical, physical and quantitative terms.

This course delivers outstanding teaching by leading, research-active academics from a variety of fields, including cell physiology, neuroscience and cardiovascular and respiratory physiology. You will be studying at the frontier of knowledge in topics such as pain, genes and function, brain and behaviour, cardiovascular disorders, and the biophysics of ion channels.

‘I was worried when I began intercalating that it would be very difficult and would mean a year without any clinical placements. However, it was one of the best decisions I’ve made while at university. Not only did I get to know some great people, I now feel I have a much stronger science knowledge and a better understanding of physiology, and I am no longer bewildered by articles and journals.’

Sam, MB ChB Medicine

The course will immerse you in real scientific research and offers a high level of clinical relevance to your medical, dental or veterinary science training. It will develop your critical awareness and provide you with a set of essential transferable skills which will enhance your career prospects.

What will I study?

The year begins with Concepts and Skills, a mandatory unit which introduces you to the key skills you will need to interpret, write about and critically analyse scientific papers. You will choose three more units from the following groups:

- Heart in Health and Disease or Sensational Neuroscience or Pharmacology of Ion Channels and Synaptic Transmission (B unit)* or Synaptic Plasticity (B unit)*
- New Horizons in Medicine or Neuroscience of Pain or Go With the Flow, the Urinary Tract from Beginning to End or Receptor Signalling and Non-drug Therapies (B unit)* or Synaptic Cell Biology (B unit)*
- Cardiovascular System in Health and Disease or Brain and Behaviour or Pharmacology of the Nervous System (B unit)* or Neurological and Neuropsychiatric Disorders (B unit)*.

*NB students may only select one B unit.

This research-driven course culminates in a substantial project supervised by one of our experts. For this, you can choose to do scientific research in a laboratory, complete a literature-based project, or collaborate with teachers in a local school on an education-based science project. You are also encouraged to attend our regular programme of research seminars to keep abreast of current developments in the field.

Contact: School of Physiology, Pharmacology and Neuroscience

Tel: +44 (0)117 331 1840
Email: phph-studentadmin@bristol.ac.uk

bristol.ac.uk/intercalate
Transfusion and Transplantation Sciences (MSc)

This is an ideal programme for those considering haematology, transfusion and organ donation as a speciality. It is one of only a handful of specialist programmes in this area and encompasses a fascinating range of subject areas, such as molecular biology, genetics, biochemistry, microbiology, immunology, tissue engineering, clinical medicine and statistics. This is a continually developing area of healthcare science and has a major impact on patients’ quality of life.

Accredited by the Institute of Biomedical Science, the programme is based at one of the largest transfusion centres in the world, where you will be able to see manufacturing, testing and tissue typing sections first hand.

You will be taught by specialists from the University of Bristol, NHS Blood and Transplant Services and a range of NHS hospitals. Applicants join after year three or four of their professional programme and complete their application via bristol.ac.uk/study/postgraduate/apply.

What will I study?

**Transfusion and Transplantation Science** looks at the basics of haemopoiesis, blood group molecular genetics, the structure and function of platelets, haemostasis and HLA genes and proteins.

**Pathology of Transfusion and Transplantation Science** covers the basis of haematological diseases such as sickle cell disease and haemophilia.

**Provision of Blood, Cells, Tissues and Organs** reviews where and how blood is sourced, and how and why it is tested. It also covers how blood components are made and stored safely.

**Clinical Transfusion and Transplantation** provides an insight into organ transplantation, engineered tissues, stem cell transplants and clinical blood transfusion. It also covers laboratory investigation and management of complications associated with these procedures.

**Transfusion and Transplantation in Practice** (two units): These units comprise practical classes designed to expose students to many different types of technology used in transfusion and transplantation laboratories.

**Biostatistics** covers the principles of experimental design, including some advanced statistical methods required to interpret published data and to analyse new data generated from clinical and laboratory research.

**Research and Laboratory Management** provides an understanding of the manager’s role in maintaining a quality system in a blood bank or blood establishment, how this is applied and their role in accreditation and licencing.

**Research project**

Students complete a final research project supervised by University or NHS research staff at the transfusion centre.

**Contact: Faculty of Life Sciences**

Tel: +44 (0)117 921 7344
Email: fbs-pg-admissions@bristol.ac.uk

In August 2018, the Faculty of Biomedical Sciences will become part of the new Faculty of Life Sciences.
Virology and Immunology (BSc)

It is difficult to overestimate the global impact of viruses on public health. Worldwide, they are responsible for millions of deaths and episodes of ill health each year. Effective vaccines exist to combat some viral infections but in many cases good vaccines remain elusive.

This course introduces the many challenges that we face in this field, offering you key insights into principles and research methods that will be invaluable for your future medical, dentistry or veterinary training.

What will I study?

The course comprises four lecture units and a research skills unit which includes a substantial research project. Students must take the following three compulsory lecture units:

**Medical Virology** reviews the general virology of the most important viral pathogens in terms of world health, including HIV, hepatitis, herpes, influenza and measles. You will study each virus in terms of its natural history, biology, molecular biology, immunology, pathogenesis and epidemiology.

**Frontiers in Infectious Disease** reveals the key steps in pathogen life cycles and how these are dealt with at a molecular level by defence mechanisms in the host. You will use this knowledge to devise both prophylactic and therapeutic interventions by developing an understanding of the key research methods that are currently used to study viral and bacterial pathogens within mammalian hosts.

**Immunology and Applied Immunology** provides you with a comprehensive knowledge of diseases which develop as a consequence of inappropriate immune responses, and as a result of deficiencies in the immune system. It also introduces you to disease processes and demonstrates how this knowledge is used to manipulate the immune system through vaccination and other immunotherapies to fight infection, allergy, autoimmunity and tumour development.

Optional units

Students choose one of these optional units:

- Medical Microbiology
- Developmental Genetics and Embryonal Cancers
- Cancer Mechanisms and Therapeutics
- Advanced Immunology
- Regenerative Medicine
- Haemopoietic Stem Cell Transplantation.

Research skills

The Research Skills unit includes training in data handling and a substantial laboratory- or literature-based project. Some examples of student projects include:

- Epidemiology of Adenovirus infections in bone marrow transplant recipients.
- T-cell activation and the control of cytokine production.
- Subcellular distributions of signalling intermediates during the activation of primary T-cells.

Contact: School of Cellular and Molecular Medicine

Tel: +44 (0)117 331 2050
Email: enquiries-cellmolmed@bristol.ac.uk

bristol.ac.uk/intercalate
Our Zoology intercalated degree programme is based around highly reputable and traditional strengths in whole organism biology (e.g., behaviour, parasitology and ecology), as well as excellence in cell and molecular biology.

We have an international reputation for the outstanding quality of our research, all of which underpins our teaching approach. Many of our staff are world leaders in their fields, giving you the opportunity to learn about the most up-to-date perspectives from those involved in shaping the latest advances in biology. Our passionate belief is that the big advances in biology come from interdisciplinarity and addressing problems from multiple levels. That breadth and ambition is reflected in our teaching. Our exceptional teaching standards have been rated as ‘excellent’ by the Higher Education Funding Council for England (HEFCE).

The Life Sciences building, which houses the School of Biological Sciences, is located at the heart of the University campus, adjacent to other core science and medical schools. It couples central positioning with the best in sustainable design and energy efficiency. This iconic building forms a hub for interdisciplinary research, facilitating major advances across the sciences.

What will I study?

In your intercalated year there are two major elements: a 5,000 word literature review and a 12-week practical research project. In addition, you will take at least four lecture units from: Mammalian Ecology and Sociobiology, Host-Parasite Interactions, Neuroethology, Sensory Ecology, Optimisation, Behaviour and Life Histories, and two units from Ecology: Theory and Practice, Agricultural Biotechnology or Tree of Life. These units may change from year to year so it is important to check the school website for up-to-date details: bristol.ac.uk/biology/courses/undergraduate/course-structures/zoology.

Studying zoology involves a considerable amount of self-directed learning and independent reading compared to veterinary science, particularly during your research project where, while allocated to an academic supervisor, you will also be expected to demonstrate good levels of independence and self-organisation. Throughout the year you will also be encouraged to attend departmental research seminars on a diverse range of subjects.

Contact: School of Biological Sciences
Tel: +44 (0)117 394 1212
Email: biologydept@bristol.ac.uk
## Entry requirements

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D = Dentists   M = Medics   V = Vets

International applicants need to achieve a certain level of English to qualify for a place on their chosen course. Different courses need different levels of language skills. We refer to these skill levels as ‘profiles’. The profile for your chosen course is shown in the table above and full details of each profile are available at [bristol.ac.uk/study/language-requirements](http://bristol.ac.uk/study/language-requirements).
Further information

**Intercalation fair**
Come and talk to our current intercalators and find out more about intercalation at Bristol.
Check our website for further details.

[bristol.ac.uk/intercalate](http://bristol.ac.uk/intercalate)

**How to apply**
Please apply directly to us for intercalated degrees using our online application form.
Visit our website for more details on how and when to apply.

[bristol.ac.uk/intercalate/apply](http://bristol.ac.uk/intercalate/apply)

**Accommodation for intercalating students**
Students who intercalate from other institutions are guaranteed an offer of accommodation subject to the conditions of Bristol’s accommodation agreement for first-year undergraduate students. Please check our website for more details.

[bristol.ac.uk/accommodation/undergraduate/intercalating-students](http://bristol.ac.uk/accommodation/undergraduate/intercalating-students)

The information contained in this leaflet is correct at the time of printing (August 2017). For up-to-date information, prospective applicants should check the website: [bristol.ac.uk/intercalate](http://bristol.ac.uk/intercalate).

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