

# BIOMEDICAL SCIENCES

The Biomedical Sciences MSc degree offers pathways in **Cancer Biology, Cellular Pathology, Clinical Biochemistry, Haematology, Immunology, Medical Microbiology and Medical Molecular Biology.**

Our graduates have gone on to work in fields as diverse as the biotechnology industry, diagnostic pathology, healthcare management, medicine, medical research, genetics, agriculture, forensic sciences and the pharmaceutical industry both within the UK and across the globe.

We have an active research culture with projects ranging from development of novel strategies for vaccine production and rapid testing for ebola virus, to finding ways to help prevent and treat cancer, liver disease, obesity, diabetes, neurodegenerative and inflammatory diseases. We are proud of our contribution in the area of biomedical sciences and we hope to get the opportunity to share our excitement with you.

At Westminster you will get the opportunity to hone your practical and professional skills while being taught by and interacting with staff who enjoy an international reputation for professional and research activities. By coming to Westminster you will have the chance to experience the excitement of biomedical sciences first hand. The extracurricular activities in which you can engage are vast and we offer many opportunities for personal and professional development all in a very supportive environment at our central London location.



All of our courses are accredited by the **Institute of Biomedical Sciences**



## BIOMEDICAL SCIENCES MSc

This course allows you to plan your own taught programme to match your interests and experience by selecting modules from a diverse range of option modules offered by the biosciences masters course in the in the Faculty of Science and Technology, with the advice of the Course Leader.

For example, you could combine modules on microbiology and molecular biology or those on haematology and clinical chemistry. Alternatively, you can combine basic science with study of the communication or commercialisation of science.

We also offer the opportunity to consider the increasing role of automation in diagnostic laboratories. Those studying part time are free to develop their module choices as they progress. Whatever the combination, you will be able to expand your understanding of human diseases, their investigation and therapy, and develop your competence in the design and execution of a laboratory-based project.

### Core modules

- Postgraduate Project
- Postgraduate Research Methods

### Option modules

- Advanced Cancer Biology
- Advances in Cellular Pathology
- Automation in Biomedical Sciences
- Cell Signalling and Genetics
- Cellular Haematology
- Clinical Aspects of Microbial Physiology and Chemotherapy
- Clinical Endocrinology and Metabolism
- Communicating Science
- Concepts and Principles of Human Nutrition
- Diagnostic Cellular Pathology
- Diagnostic Clinical Biochemistry
- Extended Postgraduate Project
- Immunohaematology and Haemostasis
- Immunopathology
- Immunotherapy
- Infectious Diseases and Public Health
- Molecular and Cellular Therapeutics
- Molecular Bioinformatics
- Molecular Science and Diagnostics
- Principles of Molecular Medicine
- Principles of Pharmacology and Drug Discovery
- Regenerative Medicine
- Science, Technology and Commercialisation
- Systems Biology

**Length of course:** one year full-time or two to five years part-time, starting in September

**Location:** Central London (Cavendish)

**Faculty:** Science and Technology

**Course fees and funding:** see course web page and [westminster.ac.uk/fees](http://westminster.ac.uk/fees)

**Entry requirements:** see page 216

For full and most up-to-date information, see course web page: [westminster.ac.uk/biomedical-sciences-msc](http://westminster.ac.uk/biomedical-sciences-msc)

### Professional recognition

The course is accredited by the Institute of Biomedical Science (IBMS).

### Associated careers

You will develop a range of transferable skills that will enhance your employment prospects and your research opportunities in the UK or overseas. This course has a diverse intake of both full and part-time home/EU students who range from recent graduates to those working in diagnostic laboratories who wish to gain an additional qualification. Our international students often have experience in biomedical science laboratories and following completion of their studies will return to their home countries to pursue promotion or research opportunities.



## BIOMEDICAL SCIENCES (CANCER BIOLOGY) MSc

Improved global life expectancy has resulted in a cancer epidemic. It is well recognised that accurate early diagnosis is an essential aspect of the administration of increasingly expensive and tailored cancer treatment care plans.

The Biomedical Sciences (Cancer Biology) MSc programme has been devised to provide knowledge of key aspects of this increasingly important disease area.

### Course content

You will become familiar with the genetic and cellular changes occurring in both solid and blood-borne cancers, the current and emerging technological approaches for diagnosis of the disease and the effect on pertinent cellular changes on patient prognosis. Studies on populations and the influence of genotypic variation will ensure that you are qualified to make sense of cancer statistics.

You are able to tailor your programme by selecting from a menu of option modules and pursuing a research project in an area ranging from molecular through to cellular or tissue-based aspects of cancer.

During the course you will join our thriving research environment and will have access to excellent laboratory facilities within the Faculty. On successful completion of the course you will be equipped to take forward your career with an in-depth knowledge of this increasingly common disease area.



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### Core modules

- Advanced Cancer Biology
- Cell Signalling and Genetics
- Molecular Science and Diagnostics
- Postgraduate Project
- Postgraduate Research Methods

### Option modules

- Communicating Science
- Extended Postgraduate Project
- Immunopathology
- Immunotherapy
- Molecular and Cellular Therapeutics
- Systems Biology

### Professional recognition

The course is accredited by the Institute of Biomedical Science (IBMS).

### Associated careers

After graduation, you will be equipped with the skills and knowledge to pursue a range of cancer-focused careers including appointments in diagnostic laboratories, academic, biotechnological and pharmaceutical research.

As a graduate of this course, you will be ideally placed to play an essential role in both diagnosis and improved care of cancer patients. Opportunities are also available to pursue a career in clinical trials and in areas such as data analysis and public health.

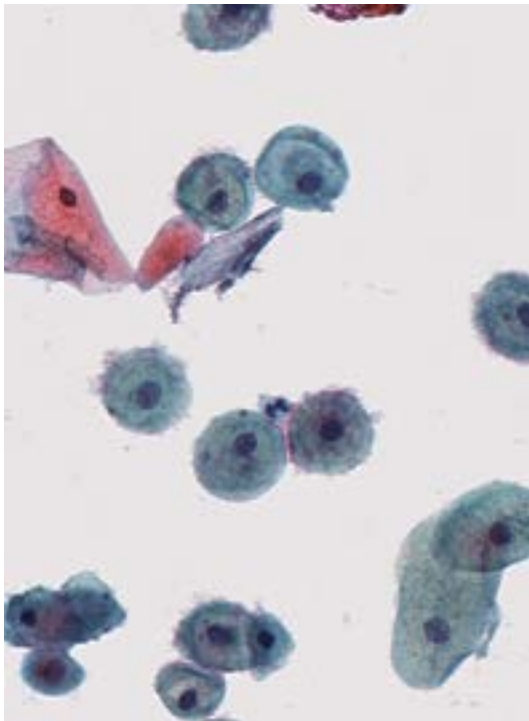
## BIOMEDICAL SCIENCES (CELLULAR PATHOLOGY) MSc

This course will enable you to enhance your knowledge and understanding of modern cellular pathology through a range of option modules. In addition, the core modules in cellular pathology are designed to deliver a comprehensive overview of contemporary technical practice in the context of service delivery to the pathologist for diagnostic practice, or for the scientist engaged in cell and tissue-based research.

### Course content

Our specialist cellular pathology modules are supported by the online use of interactive digital microscopy, for example in pathology case studies, to illustrate the applications of a range of visualisation methods in cellular pathology.

Practical experience in research design and methodology is gained through the laboratory-based research project.



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**Entry requirements:** see page 216

For full and most up-to-date information, see course web page: [westminster.ac.uk/biomedical-sciences-cellular-pathology-msc](http://westminster.ac.uk/biomedical-sciences-cellular-pathology-msc)

### Core modules

- Advances in Cellular Pathology
- Diagnostic Cellular Pathology
- Molecular Science and Diagnostics
- Postgraduate Research Methods
- Postgraduate Project

### Option modules

- Automation in Biomedical Sciences
- Cell Signalling and Genetics
- Extended Postgraduate Project
- Immunopathology
- Immunotherapy
- Molecular and Cellular Therapeutics
- Principles of Molecular Medicine
- Systems Biology

### Professional recognition

The course is accredited by the Institute of Biomedical Science (IBMS).

### Associated careers

As a graduate of this course you will possess a range of transferable skills that will enhance your employment prospects and your research opportunities in the UK or overseas. For those biomedical scientists (or international equivalents) undertaking continuing professional development, this course will enhance your knowledge base in your chosen specialist discipline and open up the potential for career advancement or moves towards involvement in research and development.

Successful completion of the course will enhance the career prospects of graduates for entering PhD programmes; you may also find employment in hospital laboratories, academia, research institutes, or in the pharmaceutical and related industries.



## BIOMEDICAL SCIENCES (CLINICAL BIOCHEMISTRY) MSc

This course aims to provide you with the skills and knowledge of theory and practice that will enable you to work as a professional capable of making important contributions in the field of clinical biochemistry. The course aims to further enhance your knowledge of clinical biochemistry, to engage you with contemporary issues and debates within the discipline, and to develop your critical and analytical skills.

### Course content

The taught programme contains specific modules in Clinical Biochemistry, such as endocrinology and metabolism and diagnostic clinical biochemistry, which you can apply to diagnostic biomedicine, as well as offering you a choice of modules related to molecular diagnostics or haematology.



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### Core modules

- Clinical Endocrinology and Metabolism
- Diagnostic Clinical Biochemistry
- Molecular Science and Diagnostics
- Postgraduate Research Methods
- Postgraduate Project

### Option modules

- Automation in Biomedical Sciences
- Cell Signalling and Genetics
- Cellular Haematology
- Communicating Science
- Immunohaematology and Haemostasis
- Immunopathology
- Principles of Molecular Medicine

### Professional recognition

The course is accredited by the Institute of Biomedical science (IBMS).

### Associated careers

The course has been designed to provide professionals with a broad range of transferable skills in clinical biomedical sciences, with particular reference to possessing the ability to critically discuss and evaluate concepts, analytical techniques, current research and advanced scholarship in Clinical Biochemistry.

Successful completion of the course will enhance the career prospects of graduates for entering PhD programmes; you may find employment in hospital laboratories, academia, research institutes, as well as in the pharmaceutical and related industries.

## BIOMEDICAL SCIENCES (HAEMATOLOGY) MSc

This course will focus on the physiology and pathology of blood and its use as a diagnostic and therapeutic tool. A variety of areas of molecular and cellular bioscience will be covered with an emphasis on new technologies and developments in Haematology and related disciplines such as Transfusion Science.

You will expand your knowledge of the basic science and analytical techniques relating to Haematology and gain an up-to-date understanding of the application of Haematology in bioscience/pharmaceutical research, as well as in diagnostic and therapeutic medicine.

### Course content

There will be an emphasis in the course on development of critical analysis skills in the assessment of scientific literature and laboratory data. In addition you will have the opportunity to design and execute your own research project.

The course team is supported by visiting lecturers who are practising scientists in the field, which helps ensure that taught material is current and relevant.

### Core modules

- Cellular Haematology
- Immunohaematology and Haemostasis
- Molecular Science and Diagnostics
- Postgraduate Research Methods
- Postgraduate Project

### Option modules

- Advanced Cancer Biology
- Automation in Biomedical Sciences
- Cell Signalling and Genetics
- Communicating Science
- Extended Postgraduate Project
- Immunopathology
- Molecular and Cellular Therapeutics
- Principles of Molecular Medicine

**Length of course:** one year full-time or two to five years part-time, starting in September

**Location:** Central London (Cavendish)

**Faculty:** Science and Technology

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**Entry requirements:** see page 216

For full and most up-to-date information, see course web page: [westminster.ac.uk/biomedical-sciences-haematology-msc](http://westminster.ac.uk/biomedical-sciences-haematology-msc)

### Professional recognition

The course is accredited by the Institute of Biomedical Science (IBMS).

### Associated careers

As well as gaining specialist knowledge in haematology and related disciplines, you will develop a range of transferable skills that will enhance your employment prospects and research opportunities in the UK or overseas.

The course is taken by both UK and international students, preferably (but not necessarily) with relevant work experience. It is relevant to career pathways in diagnostic haematology, immunology and transfusion laboratories, research institutions and pharmaceutical companies.



## BIOMEDICAL SCIENCES (IMMUNOLOGY) MSc

The course will allow you to expand your understanding of immunology, immunopathology and immunotherapy, to further develop skills in analytical approaches to immunodiagnosis and molecular therapeutics, as well as enhance your competence in the design and execution of a laboratory based project.

You will be able to take a proactive role in research, development, evaluation and implementation of current immunological techniques while perceiving the subject in the broader perspective of health care and scientific progress.

### Course content

The scope of the modules included will ensure a breadth of knowledge appropriate for the scientific and professional needs of practising immunologists, at the same time making use of your knowledge and experience. This course is designed so that you can plan your own taught programme to match your interests and experience by combining core and optional modules with emphasis on therapeutics, diagnostics, haematology or public health.

### Core modules

- Cell Signalling and Genetics
- Immunopathology
- Immunotherapy
- Postgraduate Research Methods
- Postgraduate Project

### Option modules

- Advanced Cancer Biology
- Extended Postgraduate Project
- Immunohaematology and Haemostasis
- Infectious Diseases and Public Health
- Molecular and Cellular Therapeutics
- Molecular Science and Diagnostics
- Principles of Molecular Medicine
- Systems Biology

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**Faculty:** Science and Technology

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**Entry requirements:** see page 216

For full and most up-to-date information, see course web page: [westminster.ac.uk/biomedical-sciences-immunology-msc](http://westminster.ac.uk/biomedical-sciences-immunology-msc)

### Professional recognition

The course is accredited by the Institute of Biomedical Science (IBMS).

### Associated careers

The course has been designed to provide professionals with a broad range of skills in immunology, immunopathology and immunotherapy.

Successful completion of the course will enhance your career prospects in education, in PhD programmes, in academia, research institutes, as well as in pharmaceutical and related industries. UK part-time students are normally employed in hospital or NHSBT laboratories or in research establishments.

You will develop a range of transferable skills that will enhance your employment prospects and research opportunities in the UK or overseas.

As an international student with experience in biomedical sciences, following completion of your studies, you will be able to return to your home country to pursue research opportunities or promotion, seek employment as a research technician, biomedical scientist, scientific or medical technical officer or research assistant. You may also seek jobs in industry, research or healthcare or apply for further training (biomedical or clinical scientist routes).



## BIOMEDICAL SCIENCES (MEDICAL MICROBIOLOGY) MSc

This course is designed to give you the opportunity to study and analyse the theoretical and practical basis of medical microbiology and many of the specialist areas within it. You will gain greater insight into the importance and role of medical microbiology, with an emphasis on cutting edge areas such as molecular diagnostics and genomics, emerging pathogens and antibiotic resistance.

### Course content

You will study a range of core and option modules that will allow you to tailor studies to your own requirements. You will expand your knowledge of the basic science and analytical techniques relating to medical microbiology and gain an up-to-date understanding of the application of medical microbiology in bioscience/ pharmaceutical research, as well as in diagnostic and therapeutic medicine.

There will be an emphasis in the course on development of critical analysis skills in assessment of scientific literature and laboratory data.

In addition you will have the opportunity to design and execute your own research project. The course team is supported by visiting lecturers who are practising scientists in the field, which helps to ensure that taught material is current and relevant.



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**Entry requirements:** see page 216

For full and most up-to-date information, see course web page: [westminster.ac.uk/biomedical-sciences-medical-microbiology-msc](http://westminster.ac.uk/biomedical-sciences-medical-microbiology-msc)

### Core modules

- Clinical Aspects of Microbial Physiology and Chemotherapy
- Infectious Diseases and Public Health
- Molecular Science and Diagnostics
- Postgraduate Research Methods
- Postgraduate Project

### Option modules

- Automation in Biomedical Sciences
- Communicating Science
- Extended Postgraduate Project
- Immunopathology
- Molecular Bioinformatics
- Principles of Molecular Medicine
- Systems Biology

### Professional recognition

The course is accredited by the Institute of Biomedical Science (IBMS).

### Associated careers

As well as gaining knowledge and skills in medical microbiology and other associated subject areas you will develop numerous other skills that are designed to make you competitive in the jobs market. Some students will already be working in healthcare and public health laboratories in the UK and overseas while others will be gaining the skills they need to work as a Biomedical or Clinical Scientist.

The course will also allow you to work in industry including the pharmaceutical and biotechnology sectors as well as regulatory affairs. You will also be well prepared for a career in research including further study at PhD level.



## BIOMEDICAL SCIENCES (MEDICAL MOLECULAR BIOLOGY) MSc

This course enables you to study cutting edge molecular methods employed for the understanding of molecular mechanisms of diseases and for their diagnosis and treatment. Your studies will be underpinned by essential knowledge in genetics, cell signalling and molecular medicine.

### Course content

You will be offered the flexibility to select option modules that reflect your own interest in molecular biology and these will be combined with core modules and an independent research project. The course is suitable for newly qualified graduates, those employed in related work and those with medical qualifications.



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**Entry requirements:** see page 216

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### Core modules

- Molecular and Cellular Therapeutics
- Molecular Science and Diagnostics
- Principles of Molecular Medicine
- Postgraduate Research Methods
- Postgraduate Project

### Optional module

- Cell Signalling and Genetics
- Extended Postgraduate Project
- Immunopathology
- Immunotherapy
- Molecular Bioinformatics
- Systems Biology

### Professional recognition

The course is accredited by the Institute of Biomedical Science (IBMS).

### Associated careers

You will develop a range of course-specific and transferable skills that will enhance your employment prospects, career progression and research opportunities in the UK and/ or overseas. It is anticipated that a significant number of graduates will go on to pursue a career in research after registering for a higher degree. Others will seek employment in healthcare laboratories, industry, research laboratories, government laboratories or academia in the UK or worldwide.

One of the strengths of this degree is the mixture of backgrounds/experience and career aspirations of the students recruited.