



**northumbria**  
UNIVERSITY NEWCASTLE

**BMS**  
*make learning happen*

**BSc (Hons)  
Biomedical Science**

(Final year)

# BSc (Hons) Biomedical Science

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Final year entry

## Aims of the Programme

- To provide students with a sound basis of knowledge and understanding in the fundamental subjects that underpin Biomedical Science, including: Pathology, Molecular Genetics, Clinical Immunology and Scientific Research Methods.
- To enable students to develop their intellectual skills in relation to knowledge and understanding of current methods available for the laboratory investigation, diagnosis, treatment and prevention of disease, and of the roles of the various specialist disciplines in Biomedical Science, including, medical microbiology, clinical biochemistry, cellular pathology, haematology and transfusion science and clinical immunology.
- To enable students to develop their practical laboratory skills and abilities alongside broader professional skills, thereby satisfying some of the key requirements of the Health Professions Council Standards of Proficiency for registration as a Biomedical Scientist.
- To prepare students for employment, or further study, by developing transferable skills, including self-management and reflective practice, communication, IT, numeracy, data analysis, interpersonal and teamwork skills, alongside an awareness of current and professional issues within the taught programme.
- To develop an appreciation of the role of scientific research in the advancement of Biomedical Science.



### Synopsis of Modules

#### Pathology in Practice

This module provides students with an understanding of the integrated approach of pathology disciplines in the diagnosis, monitoring and treatment of diseases. Pathological principles of the diseases and disorders of a range of organ/systems will be explored from a clinical investigative group problem-based learning. The ability to work as part of team is a key learning outcome for this module and students will make a critical appraisal of the contribution by each member of their group and how the team operated.

#### Clinical Immunology

This module builds on the underlying principles of immunology and introduces the student to the clinical aspects of the immune response. It will develop an understanding and knowledge of the immune response in infections, allergies, tumours, immunodeficiency states and autoimmune disorders. The role of the clinical laboratory in the diagnosis, monitoring and treatment of immunological disorders will be covered.

#### Analytical Methods and Applied Genetics

This module will provide students with in-depth knowledge of a range of biomedical techniques used in the investigation and diagnosis of disease. Students will be introduced to biosensors, spectroscopy (e.g. nuclear magnetic resonance, mass spectroscopy), separation techniques (e.g. capillary electrophoresis, advanced chromatographic separations) and advanced molecular genetics techniques, together with their biomedical applications. The use of bioinformatics in Biomedical Sciences will also be investigated both from a research and diagnostic point of view.

## Programme Module Grid

Module Code	Module Title	Credits
BS0602	Pathology in Practice	30
BS0603	Analytical Methods and Applied Genetics	20
BS0604	Clinical Immunology	10
BS0605	Molecular Cell Interactions	20
BS0606	Research Project	20
BS0608	Scientific Literature Review	20

### Molecular Cell Interactions

This module explores events that underpin cellular communication and serve to maintain cellular homeostasis. These signalling events often involve a chain of protein interactions which, when modified due to factors such as toxicity or mutation, lead to disease processes. Alongside the induction of pathogenesis the module explains how recent advances in biochemical, molecular or pharmacological therapies can be used to combat human disease.

### Research Project

To enable the students engage in a research project and to present their evaluation of the relevant primary literature and their own findings in a written report. Laboratory and/or computer based work will provide the students with the appropriate practical skills and independent and directed learning will be used to facilitate literature evaluation.

### Scientific Literature Review

This module provides an opportunity for the students to investigate the literature on a topic of their own choice, selected under guidance from their supervisor, and to present their evaluation of the literature orally and in a written report. Independent and directed learning will be used to facilitate to literature evaluation. Students will receive weekly oral feedback from their supervisors within small group tutorial sessions





- Recognised by UGC
- Internal degree
- University ID
- Core text books
- Modern laboratory
- Industry expert lecturers

**Duration:** One academic year | **Lectures:** Monday to Friday (9am-4pm)