

# BIOLOGICAL SCIENCES

Biological Sciences encompasses many aspects of the biosciences, from molecules to ecosystems and includes exploration of:

- Biological diversity, systematics and conservation
- Cell and tissue structure, function and physiology
- Ecology and behaviour
- Form and function of microorganisms, protists, fungi, plants and animals
- Genetics and mechanisms and pathways of evolution

Students will gain core technical skills and subject specific practical laboratory- / field-based skills to help them investigate and manipulate biological material including relevant physical, chemical and biological measurements and their application in a laboratory, field, and research project setting. During the final year project students will have access to cutting-edge research facilities across the molecular and ecological disciplines.

## COURSE CONTENT

Biological Sciences graduates tackle worldwide problems such as climate change, food supply and security, biodiversity loss, and global health issues. Students on this programme will complete a set of core compulsory modules at stages 1 and 2, and will select from a range of optional modules at stages 2 and 3. All students will undertake a compulsory Research Project modules at stage 3 which can be lab- or field-based. Students will also have opportunity to undertake a 16-week work placement to develop the core skills and employment related experiences valued by employers.

The modules are:

### Stage 1

- The World of Microorganisms
- Molecular Basis of Life
- Biodiversity

### Stage 2

Core Modules

- Cell Biology 2
- Plant and Soil Science
- Invertebrate Biology

Optional Modules

- Invertebrate Biology
- Advanced Cell Biology

- Forensics and Toxicology
- Applied Genetics
- Molecular Genetics and Bioinformatics
- Coastal and Oceanic Biology
- Applied Ecology
- Animal Biology and Physiology
- Microorganisms in Action
- Work Placement

\*Throughout stages 1 and 2 practical classes in Biological Sciences reinforce and compliment the theory, providing students with a solid foundation on which to build upon for stage 3.

### Work Placement

- Biological Sciences students have the option to complete a 16 week degree-related work placement which takes place over the summer period between stages 2 and 3.
- Biological Sciences with Professional Studies students will complete a one year, degree-related work placement

### Stage 3

Core Modules

- Research Project

Optional Modules

- Parasitology
- Zoonoses
- Industrial Microbiology
- Immunology and Immunotherapy
- Medical Microbiology

### BSc Honours

Biological Sciences 3 yrs (C100)

Biological Sciences with Professional Studies 4-yr SW (C104)

### MSci Honours

Biological Sciences 4 yrs (C102)

Biological Sciences with Professional Studies 5-yr SW (C105)

See also Biochemistry, Marine Biology, Microbiology and Zoology

## Entrance Requirements

### BSc

#### A-level:

BBB including Biology and at least one from Chemistry (preferred), Geography, Mathematics or Physics + GCSE Chemistry grade C/4 or GCSE Double Award Science grades CC/44 + GCSE Mathematics grade C/4

OR

BBB including Double Award Applied Science or Double Award Life and Health Sciences + GCSE Biology grade C/4 and Chemistry grade C/4 or GCSE Double Award Science grades CC/44 + GCSE Mathematics grade C/4

OR

ABB including Biology + GCSE Chemistry grade C/4 or GCSE Double Award Science grades CC/44 + GCSE Mathematics grade C/4

### MSci

#### A-level:

AAB including Biology and at least one from Chemistry (preferred), Geography, Mathematics or Physics + GCSE Chemistry grade C/4 or GCSE Double Award Science grades CC/44 + GCSE Mathematics grade C/4

OR

AAB including Double Award Applied Science or Double Award Life and Health Sciences + GCSE Biology grade C/4 and Chemistry grade C/4 or GCSE Double Award Science grades CC/44 + GCSE Mathematics grade C/4

OR

AAA including Biology + GCSE Chemistry grade C/4 or GCSE Double Award Science grades CC/44 + GCSE Mathematics grade C/4.

**Note:** it would be an advantage to have studied Chemistry beyond GCSE level.

**Note:** MSci applicants will automatically be considered for admission to the BSc if they are not eligible for entry to the MSci, both at initial offer-making stage and when results are received.

**Option to Transfer:** Transfers between BSc and MSci may be possible at the end of Stage 2.

### For students whose first language is not English

An IELTS score of 6.5 with a minimum of 5.5 in each test component or an equivalent acceptable qualification, details of which are available at: [go.qub.ac.uk/EnglishLanguageReqs](http://go.qub.ac.uk/EnglishLanguageReqs)

“Studying Biological Sciences (with Professional Studies) at Queen’s allowed me to experience several different aspects of Biology and gave me the flexibility to decide which pathway interested me the most, as well as allowing me to gain many different skills in the process. My favourite part of the degree was the final year Honours project: being able to carry out my own unique research project was highly enjoyable, and well worth all the work involved! Studying Biological Sciences inspired me to pursue a career in research and gave me the confidence to begin a PhD project at Queen’s.”

Fiona McKay, BSc Biological Sciences

- Microbiome-Biotechnological applications and ‘Omic manipulations
- Behavioural Ecology
- Global Change Biology
- Conservation Biology

\*During stage 3, students in Biological Sciences take a double module research project under the supervision of a member of the academic staff. The research project

generally involves practical work carried out in the field and/or laboratory.

## WHY QUEEN’S?

### Degree Recognition

The BSc Biological Sciences and BSc Biological Sciences with Professional Studies have been accredited by the Royal Society of Biology following an independent and rigorous assessment. Accredited degree programmes contain a strong academic foundation in biological knowledge and key skills, and prepare graduates to address the needs of employers.

The MSci Biological Sciences and MSci Biological Sciences with Professional Studies hold advanced accreditation with the Royal Society of Biology. Advanced Degree Accreditation by the Society recognises academic excellence in the biosciences, and highlights degrees that educate the research and development leaders and innovators of the future.

### Work Placement

Embedded optional work placements (16 week) provide students with the opportunity to utilise the practical, transferable and professional skills gained during the teaching of their degree and apply these in a work environment.

In previous years, students have gained placements with organisations such as Almac Pharma Services, Norbrook Laboratories, Warner Chilcott, Northern Ireland Environment Agency, Belfast Zoo, the National Trust, Atlantic Whale Foundation, and the RSPB. In addition, students can avail of opportunities to undertake short summer placements abroad through programmes such as IAESTE, Operation Wallacea, and Frontier.

### Research Experience

Final year research projects allow students to gain considerable research experience in one of the research laboratories at Queen’s University Belfast. Working alongside world-leading researchers enriches the student experience and assists them in pursuing a career in academia or in research.

## CAREERS/FURTHER STUDY

A degree in biosciences opens the door to a wide range of careers. Our graduates are employed in organisations working within environmental monitoring and management, water quality management,

animal welfare, academic research, the agri-food industries, biotechnology and pharmaceutical industries, teaching and education, and science communication.

These employment areas have always been important, but have now become increasingly so due to worldwide problems such as climate change, food supply and security, biodiversity loss and global health issues.

### Further Study

Master’s programmes offer the opportunity to train in specialist areas within the Biosciences (e.g. Parasitology, Animal Behaviour and Welfare, Food Security) in order to enter professions in those fields or to further enhance academic and research skills before embarking on a PhD; see the University website for further study information.

Those wishing to pursue a career in research will normally obtain a PhD, and both BSc and MSci Biological Sciences graduates are well-placed to compete for places on PhD programmes. Alternatively, the transferable skills gained during completion of a biosciences degree will place students in excellent standing for specific graduate programmes to enter professions such as accountancy, management or journalism. Many of our graduates undertake the postgraduate teacher training programme (PGCE) for entry into the teaching profession.



Advanced Accredited Degree



Accredited Degree

### Entrance requirements

e: [admissions@qub.ac.uk](mailto:admissions@qub.ac.uk)  
t: +44 (0)28 9097 3838

### Course information

Dr Angela Mousley  
Programme Director  
School of Biological Sciences

e: [biosciences-ug@qub.ac.uk](mailto:biosciences-ug@qub.ac.uk)  
t: +44 (0)28 9097 5786  
w: [qub.ac.uk/bb](http://qub.ac.uk/bb)