

# MARINE BIOLOGY

'The oceans are a key element for the existence of life on Earth. 97% of all the water on Earth, and 99% of the habitable space on this planet, is in the ocean' (source: NASA).

Marine biology is the interdisciplinary study of life in the ocean. At the present time, the position of marine biology graduates has never been as critical to the functioning of our society, economy and environment. Complex issues such as overfishing, pollution and climate change are colliding to bring about extraordinary and sometimes catastrophic changes in marine systems. As a marine biologist you will apply cutting edge technologies to help tackle these issues on a scale from molecules to ecosystems.

With regards to marine resources management the UK's territorial waters stretch over 6.8 million km<sup>2</sup> (over fourteen times the terrestrial landmass) and within this vast area lies the blue economy: marine renewable energy, oil, gas, fish, minerals and rare earth metals. To manage these resources in a sustainable manner requires assessment and guidance from highly-skilled marine biologists.

Within this context the Marine Biology degree at QUB is based on a research-led teaching format and will prepare students for a future in a diverse range of careers including marine conservation, environmental consultancy, documentary film making, wildlife tourism, fisheries management and academic study.

## COURSE CONTENT

You will be taught by a team of international researchers with diverse expertise ranging from marine microbes (that constitute 50% of the biomass in the oceans) through to hydrothermal vents and the migration of oceanic megafauna (e.g. sea turtles and sharks). With an exceptional staff to student ratio of 1:3 we have the opportunity to personalise your education via small group tutorials and help guide you towards your career goals.

The course content is designed to blend strong training in marine biology with core skills in the biosciences ranging from physiology and genetics through to conservation biology and global climate change. This broad-based approach allows graduates to explore a range of career opportunities within the biological sciences, as well as within the field of marine biology. This taught content is complemented by an

exceptional array of extra-curricular activities aimed at building your employability; from work-shadowing marine PhD students from stage 1 of your degree through to dedicated skills-development workshops at our marine laboratory including boat-handling, satellite tracking and underwater video technology.

The modules are:

### Stage 1

- Biodiversity (with field course)
- Molecular Basis of Life
- The World of Microorganisms

Stage 1 gives a broad base in the biological sciences on which to build Stage 2 and Stage 3 studies. This module combination provides students, who may be undecided as to their final specialist degree area, with considerable flexibility as they enter Stage 2; at this stage students enrolled in Marine Biology can move into Zoology or Biological Sciences and vice versa.

## BSc Honours

Marine Biology 3 yrs (C160)

Marine Biology with Professional Studies 4-yr SW (C164)

## MSci Honours

Marine Biology 4 yrs (C162)

Marine Biology with Professional Studies 5-yr SW (C165)

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

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

**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)

## Stage 2

- Marine Systems
- Coastal and Oceanic Biology (with field course)
- Animal Biology and Physiology
- Applied Ecology (with field course)
- Applied Genetics

## Work Placement

- Marine Biology with Professional Studies students will complete a one-year, degree-related work placement

Recent students have gained placements working on marine mammals, fisheries management and molecular ecology (for example) at international laboratories in Spain, the Netherlands, and Slovenia as well as across the island of Ireland and GB.

## Stage 3

- Sustainable Oceans (with sea survival training and research cruise)
- Conservation Biology
- Global Change Biology
- Behavioural Ecology
- Research Project

During their final year, students undertake a two-module research project carried out under the supervision of one or more members of academic staff. The project generally involves practical work carried out in the field and/or at the Marine Laboratory, in one of the many active areas of marine research in the School.

## Stage 3

- MSci Research Project

Students carry out a full-time research project under the supervision of academic staff. There are no taught modules or examinations in this year, thereby allowing students to concentrate fully on their research project.

## WHY QUEEN'S?

### Dedicated Marine Laboratory

In addition to the state-of-the-art teaching facilities on the main campus, the Queen's Marine Laboratory is on the shores of one of the most protected areas in Europe, Strangford Lough. During your degree, you will take two residential field courses at the marine lab to study marine ecosystems up close using our array of aquaria, boats and shore-based facilities.

### Exceptional Marine Life

Around the island of Ireland we have some of the most spectacular marine wildlife in Europe including six-gill, blue and basking sharks, bluefin tuna, >20 species of marine mammals (from seals to humpback whales), leatherback turtles, deep-water coral reefs and hydrothermal vents. All of these species represent core focal areas for our staff. Access to such species and environments makes QUB one of the best located universities for the study of Marine Biology.

**Accreditation and Extracurricular Activities**

Beyond the taught degree, all Marine Biology students have the opportunity to gain professional boating qualifications (e.g. Survival at Sea, Powerboat Level II) that increase their employability both within and outside of academia. Students are also encouraged to seek Degree plus accreditation which showcases their extra-curricular marine experiences gathered during their degrees (via work shadowing PhD students from the start of their degree, through to activities run by the QUB Marine Biology Society).

This programme has been accredited by 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. The Advanced Accreditation criteria require evidence that graduates from the programme meet defined sets of learning outcomes, including gaining a substantial period of research experience

## CAREERS/FURTHER STUDY

An Honours degree in Marine Biology offers comprehensive training in one of the most popular environmental disciplines, and good graduates move on to pursue diverse careers at home and abroad.

Many recent graduates have secured MSc and PhD positions at leading universities in the UK, Republic of Ireland and overseas whilst others work in secondary education or for conservation organisations and government environmental agencies. The experience that you gain from applying the scientific approach to living organisms, solving numerical and practical problems, developing written and oral communication skills and using a wide range of sophisticated equipment will also help you to find employment in a variety of non-biological careers. Many employers are looking for graduates in any scientific discipline, provided they show academic confidence, the ability to communicate, handle quantitative data and solve problems, and have good social skills, a wide range of interests and a record of success. We believe that studying Marine Biology at Queen's will enable you to acquire and develop these qualities.

## Further Study

Further study is also an option open to Marine Biology graduates. Students can choose from a wide range of Master's programmes as well as a comprehensive list of research topics as shown on the University website.



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

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