



## **Programme Specification**

**Biological Sciences [Sep][SW][Frenchay][5yrs]**

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## Section 1: Key Programme Details

### Part A: Programme Information

**Programme title:** Biological Sciences [Sep][SW][Frenchay][5yrs]

**Highest award:** MSci Biological Sciences

**Interim award:** BSc (Hons) Biological Sciences

**Interim award:** BSc Biological Sciences

**Interim award:** DipHE Biological Sciences

**Interim award:** CertHE Biological Sciences

**Awarding institution:** UWE Bristol

**Teaching institutions:** UWE Bristol

**Study abroad:** No

**Year abroad:** No

**Sandwich year:** Yes

**Credit recognition:** No

**School responsible for the programme:** HAS Dept of Applied Sciences, Faculty of Health & Applied Sciences

**Professional, statutory or regulatory bodies:** Not applicable

**Modes of delivery:** Sandwich

**Entry requirements:** For the current entry requirements see the UWE public website.

**For implementation from:** 01 September 2024

**Programme code:** C11D-SEP-SW-FR-C11D

## Section 2: Programme Overview, Aims and Learning Outcomes

## Part A: Programme Overview, Aims and Learning Outcomes

**Overview:** MSci Biological Sciences gives you the opportunity to study life, from molecules through to ecosystems. The programme has been designed with a broadly based core in the first year of study to allow you to identify the areas within the biological sciences, which truly interest you. From second year and into final year, the programme allows you a wealth of choice in the human, molecular and ecological themes of the biological sciences. You will take ownership of your curriculum by choosing to focus in one of these areas, or you can choose from across these themes and keep your options open; the choice is yours.

In keeping with the applied sciences, the course is heavily practically focused, with approximately 50% of your teaching delivered as practical classes across the first two years of study. In addition to subject specific modules, you will 'Study Skills for Biosciences' during the first year, to equip you with the fundamental scientific skills to succeed as a biological scientist. During second year, these are developed in 'Research Skills' where you will develop your skills as an independent scientist and demonstrate your ability to undertake authentic scientific research from project planning through to presentation of your findings. These modules are designed to flow into your independent research project undertaken during the third year of study; an authentic capstone experience where you will demonstrate your skills as a mature, independent scientist. You will develop further as a researcher during the M year, undertaking an independent research project of twice the scope, and learning how to be an effective research planner and communicator, while learning about the leading-edge of biological sciences research.

MSci Biological Sciences is offered as an optional sandwich award, giving you the opportunity to take a placement year in industry if you choose to. Biological Sciences students who choose this route spend up to 40 weeks undertaking a placement within a local, national or international industrial or academic organisation in a research and development environment. Whilst on placement, in addition to gaining key scientific and employability skills, you will complete a module, which contributes to your final year credit requirement.

The optional modules within the programme have been designed to allow you to develop as a biological scientist within the discipline of your choosing. Modules within the molecular, human and ecology themes have been designed to enable outstanding learning, from the fundamental basis of the subject through to the leading edge of contemporary biological sciences. Flexibility is at the heart of the BSc (Hons) Biological Sciences course at UWE. You will have the scope to take ownership of your education and to enable your training as a scientist; to meet the scientific challenges and capitalise on the opportunities you will unlock as a biological sciences graduate.

**Features of the programme:** The MSci Biological Sciences programme has the following key features:

A broadly based core at Level 4 designed to introduce the range of Biological Sciences and to provide students with the requisite knowledge and scientific skills to develop as biological scientists.

A flexible modular structure through Levels 5 and 6 to allow Biological Sciences students to explore their individual interests.

A modular structure clustered into clearly identified themes (human, molecular, ecology) at Levels 5 and 6. Identifying these themes amongst the rich diversity of biological sciences subjects affords students a clear path from entry on to the course through to students' chosen area of employment.

A strong practical provision providing subject specific learning and generic scientific skills to enhance employability through experiential learning (learning by doing).

Decided scientific and research skills modules at Levels 4 and 5 designed to empower students to develop into competent, questioning and independent scientists.

An independent research project at Level 6 enabling students to apply the

knowledge and skills learned at Levels 4 and 5 through their own independent research.

An extended independent research project at Level 7, allowing students to develop as independent researchers with ownership of the planning and management of their research, an awareness of research impact and the opportunity to further study at the cutting edge of the biological sciences.

**Educational Aims:** The programme aims to enable you to develop:

An appreciation of the complexity and diversity of life processes through the study of organisms, their molecular, cellular and physiological processes, their genetics and evolution, and the interrelationships between them and their environment

The ability to read and use appropriate literature with a full and critical understanding, while addressing such questions as content, context, aims, objectives, quality of information, and its interpretation and application

The capacity to give a clear and accurate account of a subject, marshal arguments in a sophisticated way and engage in debate and dialogue both with specialists and non-specialists, using appropriate scientific language

Critical and analytical skills including a recognition that statements should be tested and that evidence is subject to assessment and critical evaluation

The ability to employ a variety of methods of study in investigating, recording and analysing material

The ability to think independently, set tasks and solve problems.

**Programme Learning Outcomes:**

On successful completion of this programme graduates will achieve the following learning outcomes.

## Programme Learning Outcomes

- PO1. Experience and competence in a broad range of appropriate practical techniques and skills relevant to the biosciences including data collection, analysis and interpretation of those data, and testing of hypotheses and the ability to place the work in context and to suggest lines of further investigation.
- PO2. The ability to update your knowledge of the biosciences and explain biological phenomena at a variety of levels (from molecular to ecological systems) and how evolutionary theory is relevant to your area of study.
- PO3. The ability to plan, execute and present a piece of hypothesis-driven work within a supported framework in which qualities such as time management, problem solving, and independence are evident.
- PO4. The ability to access and evaluate bioscience information from a variety of sources and to communicate the principles both orally and in writing in a way that is organised and topical, and recognises the limits of current hypotheses.
- PO5. An appreciation of ethical issues and how they underpin professional integrity and Standards, and an awareness of professional standards, including good Laboratory Practice for data collection, recording and interpretation.
- PO6. The ability to record data accurately, and to carry out basic manipulation of data (including qualitative data and statistical analysis, when appropriate).
- PO7. Access bioscience databases and use appropriate selection criteria to mine, manipulate and interpret data.
- PO8. An understanding of the use of bioinformatics approaches in the analysis of large Datasets.

**Assessment strategy:** Effective learning is achieved by employing a range of assessment approaches, embedded within the compulsory modules and reinforced within the optional modules that recognise differential approaches to learning. These include opportunities for work-based learning, placements and field work. The development of a flexible, inclusive and accessible curriculum ensures a high quality learning experience for all students. The programme incorporates a range of assessments from continuous online assessment, appropriate for the study of Human Anatomy and Physiology during the first year of study through to log-books

written in the field as part of the Tropical Expedition. Completing research reviews provides you with a valuable learning experience; they address learning outcomes PO2, PO4 and PO7 derived from the QAA benchmark statements for the Biosciences (2015) but are also authentic assessments for practicing research scientists. Practical portfolios and write-ups are used to address PO1 and PO6; the collection of data, recording of findings and completion of laboratory work and associated reports are fundamental scientific skills, and safe-practice and good conduct a fundamental part of developing an understanding of professional integrity and research ethics (PO5). The compulsory modules provide a structured approach to developing you as an independent scientist capable of planning, organizing and executing independent research and interpreting and communicating the findings (PO3; PO4). You will be encouraged to communicate science, through a variety of media including written work, visual communication through poster design and oral communication through presentation and defence. This is scaffolded at the programme level within the compulsory modules you are supported by the optional choices. Written examinations include online open-book exams or those with seen-questions where the emphasis is placed on you updating your knowledge (PO2) and accessing, reviewing and interpreting information (PO7) rather than recall. Unseen written exams are used to demonstrate your ability to evaluate information and communicate this in writing in an organized way (PO4). The capstone experience to the third year of study is the independent research project. Whether experimental or dissertation based, the assessments have been designed to allow you to demonstrate your developing ability to plan and undertake work as an independent scientist (PO3), to use your skills to produce data (PO1; whether primary or metadata) and to analyse, interpret and communicate this using media (research paper and poster communication), which are authentic and relevant to a practicing scientist. M year focuses on research training and the research process and this is reflected by the assessment strategy; you will be assessed by your ability to review and evaluate the scientific literature, to present data and concepts orally and visually and to interpret and communicate scientific concepts to a range of audiences, rather than by written examination. The findings of your independent research project will be written up as a scientific report and then presented to and assessed by your peers and academic staff at a conference day, providing you with an authentic research experience.

**Student support:** Students are supported through their programme by their personal tutor; the tutor supports scaffolded assessment in the first year of study and graduate attributes during the second year. This is reinforced by the addition of a project supervisor during the third year and M year.

## Part B: Programme Structure

### Year 1

The student must take 120 credits from the modules in Year 1.

#### Year 1 Compulsory Modules

The student must take 120 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
USSKA4-30-1	Cells, Biochemistry and Genetics 2021-22	30
USSKA3-30-1	Human Anatomy and Physiology 2021-22	30
USSK5C-30-1	Life on Earth 2021-22	30
USSKA6-30-1	Skills for Biosciences 2021-22	30

### Year 2

The student must take 120 credits from the modules in Year 2.

#### Year 2 Compulsory Modules

The student must take 30 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
USSKAP-30-2	Research Skills 2022-23	30

#### Year 2 Optional Modules

The student must take 90 credits from the modules in Optional Modules.

Module Code	Module Title	Credit
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USSKB4-15-2	Cell Signalling 2022-23	15
USSK5F-30-2	Ecology and Ecosystem Protection 2022-23	30
USSKFQ-15-2	Genetics 2022-23	15
USSKAN-30-2	Human Health and Disease 2022-23	30
USSJXV-30-2	Human Physiology 2022-23	30
USSKAQ-30-2	Microbial Life 2022-23	30
USSKAM-30-2	Molecular Biotechnology 2022-23	30
USSJQD-15-2	Plant Growth and Survival 2022-23	15
USSJQC-15-2	Wildlife Ecology 2022-23	15

### Year 3

Students may elect to spend a year out working for an organisation, in an appropriate placement to gain relevant work experience. Credit is achieved through the USSK57-15-3 Professional Practice in Applied Sciences module.

### Year 3 Compulsory Sandwich Module

The student must take 15 credits from the modules in Compulsory Sandwich Module.

Module Code	Module Title	Credit
USSK57-15-3	Professional Practice in Applied Sciences 2023-24	15

### Year 4

The student must take 105 credits from the modules in Year 4.

### Year 4 Compulsory Modules

The student must take 30 credits from the modules in Compulsory Modules.

Module Code	Module Title	Credit
USSKBC-30-3	Research Dissertation Project 2024-25	30

**Year 4 Optional Modules**

The student must take 75 credits from the modules in Optional Modules.

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSJXY-15-3	Developmental and Stem Cell Science 2024-25	15
USSKN9-15-3	Environmental Microbiology 2024-25	15
USSKBF-30-3	Genomic Technologies 2024-25	30
USSKN6-15-3	Global Forest Systems 2024-25	15
USSK55-15-3	Marine Ecosystems 2024-25	15
USSKBH-30-3	Medical Genetics 2024-25	30
USSKBJ-30-3	Medical Microbiology 2024-25	30
USSKCA-15-3	Neuroscience and Neuropharmacology 2024-25	15
USSKBW-15-3	Pathophysiology 2024-25	15
USSJXW-15-3	Physical Activity, Nutrition and Health 2024- 25	15
USSK56-15-3	Primate Ecology and Conservation 2024-25	15
USSKCE-15-3	Science Communication 2024-25	15
USSKNB-15-3	Sustainable Food Production 2024-25	15
USSK59-15-3	Tropical Expedition 2024-25	15

**Year 5**

The student must take 120 credits from the modules in Year 5.

**Year 5 Compulsory Modules**

The student must take 120 credits from the modules in Compulsory Modules.

<b>Module Code</b>	<b>Module Title</b>	<b>Credit</b>
USSJQE-30-M	Current Issues in Applied Sciences 2025-26	30
USSKM6-60-M	Research in Practice 2025-26	60
USSKM5-30-M	Research with Impact 2025-26	30

### **Part C: Higher Education Achievement Record (HEAR) Synopsis**

The Biological Sciences programme has been designed to deliver a broadly based core encompassing the processes and mechanisms of life, from molecules to ecosystems. Graduates will have an understanding of the complexity and diversity of life through study of the molecular, cellular and physiological processes of organisms, how organisms interrelate and relate to the environment in addition to an understanding of hypothesis-driven scientific process. Graduates will be equipped with laboratory and analytical skills and the ability to engage in debate and dialogue with specialists and non-specialists and will have developed the ability to think independently, set tasks and solve problems.

### **Part D: External Reference Points and Benchmarks**

The programme has been designed within the framework of the QAA Subject Benchmark Statements: Biosciences (2015). This has not constrained the development of the programme, but has provided relevant context to re-examine the compulsory and optional modules. The graduate attributes articulated within the QAA Benchmark Statements: Biosciences (2015) were circulated to module leaders when considering assessment strategy in addition to a list of skills sought by employers circulated by the The Royal Society of Biology.

### **Part E: Regulations**

Approved to University Regulations and Procedures.