Programme Specification Document

Approved, 2022.02

Overview

Programme Code	30159
Programme Title	Biology
Awarding Institution	Liverpool John Moores University
Programme Type	Degree
Language of Programme	All LJMU programmes are delivered and assessed in English
Programme Leader	Craig Wilding
Link Tutor(s)	

Awards

Award Type	Award Description	Award Learning Outcomes
Target Award	Bachelor of Science with Honours - BSH	See Learning Outcomes Below
Recruitable Target	Bachelor of Science with Honours (SW) - SBSH	See Learning Outcomes Below
Alternative Exit	Diploma of Higher Education - DHE	Possess a detailed knowledge and understanding of a wide-range of field and laboratory techniques. Analyse and evaluate information relating to a range of biological areas. Take responsibility for their own personal and professional learning and development
Alternative Exit	Diploma in Higher Education (SW) - SDHE	In addition to the learning outcomes for the Diploma in HE, a student who successfully completes a placement year will be eligible for the Sandwich award and will be able to demonstrate the professional and personal skills necessary for effective employment within a professional environment.
Alternative Exit	Certificate of Higher Education - CHE	Reflect on the scientific skills required for the course and their future careers. Develop a basic, practical and relevant mathematical and biological foundation for the quantitative aspects of all Level 4 modules. Apply the skills needed for academic study and enquiry. Utilise problem-solving skills in biological sciences. Collect, analyse, and interpret experimental data. Evaluate their own academic and professional performance
Alternative Exit	Bachelor of Science (SW) - SBS	In addition to the learning outcomes for the BS, a student who successfully completes a placement year will be able to demonstrate the professional and personal skills necessary for effective employment within a professional environment.
Alternative Exit	Bachelor of Science - BS	Demonstrate a broad and comparative knowledge of the general scope of the subject, its different areas and applications, and its interactions with related subjects. A detailed knowledge of a defined subject or a more limited coverage of a specialist area balanced by a wider range of study. In each case, specialised study will be informed by current developments in the subject. Demonstrate a critical understanding of the essential theories, principles and concepts of the subject(s) and of the ways in which these are developed through the main methods of enquiry in the subject.

Alternate Award Names	

External Benchmarks

Subject Benchmark Statement	UG-Biosciences (2019)

Accreditation

Programme Accredited by

PSRB Name	Type of Accreditation	Valid From Date	Valid To Date	Additional Notes
Royal Society of Biology	Accredited by the Royal Society of Biology for the purpose of meeting, in part, the academic and experience requirement of membership and Chartered Biologist (CBiol).			

Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length
Full-Time, Face to Face	September	LJMU Taught	3 Years
Sandwich Year Out, Face to Face	September	LJMU Taught	4 Years

Aims and Outcomes

Educational Aims of the Programme

To provide for all students a defined academic programme with clear learning outcomes. To provide students with a comprehensive understanding of the theoretical and practical skills required to equip them for a career in the biological sciences and related industries and professions. To develop critical, analytical problem-based learning and transferable skills to prepare the student for graduate employment. To enable students to acquire a high level of practical, analytical and research skills in biology. To develop those learning, information technology, communication and reflective skills necessary to enable students to undertake independent study, and to participate in lifelong learning. To encourage students to engage with the development of employability skills. To provide opportunities for development of creativity and innovation with reference to aspects of biology. In addition to the aims for the main target award, the sandwich programme aims to provide students with an extended period of work experience at an approved partner that will complement their programme of study at LJMU. This will give the students the opportunity to develop professional skills relevant to their programme of study, as well as attitude and behaviours necessary for employment in a diverse and changing environment.

Learning Outcomes

Code	Description
PLO1	Evaluate, utilise and present essential facts, concepts, principles and theories of biology encompassing molecular, cellular and physiological processes, microbiology, genetics, evolution, and ecology
PLO2	Apply subject knowledge and understanding to address familiar and unfamiliar problems.

Code	Description
PLO3	Recognise the moral and ethical issues of investigations and appreciate the need for ethical standards and professional codes of conduct.
PLO4	Demonstrate competence and progressive development in the basic and core experimental skills appropriate to the study of biology.
PLO5	Design, plan, conduct and report on investigations, which may involve primary or secondary data.
PLO6	Obtain, record, collate and analyse data using appropriate techniques in the field and/or laboratory, working individually or in a group.
PLO7	Undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner.
PLO8	Communicate scientific information effectively in written, verbal, and visual forms.
PLO9	Cite and reference work in an appropriate manner, ensuring academic integrity and the avoidance of plagiarism.
PLO10	Use the internet and other electronic sources critically as a means of communication and a source of information.
PLO11	Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles.
PLO12	Apply theory/knowledge to new situations, including the formulation of a hypothesis, the design of experiments and interpretation of findings
PLO13	Evaluate their own performance and the performance of others as an individual and a team member.
PLO14	Develop skills necessary for independent lifelong learning (for example working independently, work as part of a team, time management, organisational skills)
PLO15	Identify and work towards targets for personal, academic, professional and career development.
PLO16	Use and interpret a variety of sources of information: textual, numerical, verbal, and graphical.
PLO17	Analyse, critically appraise, report and explain biological information and data
PLO18	Determine and apply appropriate statistical tests to analyse data produced from various types of study, such as laboratory classes and fieldtrips
PLO19	Critically evaluate current research in the field of biology
PLO20	Demonstrate an understanding of and apply, a decolonial perspective to biological knowledge and research.
PLO21	Recognise and apply biological subject specific theories, paradigms, concepts or principles.
PLO22	Analyse, synthesise and summarise information critically, including published research or reports.
PLO23	Obtain and integrate several lines of biological subject-specific evidence to formulate and test hypotheses.

Programme Structure

Programme Structure Description

Study Abroad Students will be offered the opportunity of study abroad at Level 5. Students can choose either Option A or Option B unless they undertake the Sandwich Year, in which case Option B is not available: Option A: replacement of 60 credits of Level 5 with appropriate study abroad. The programme will offer the opportunity of 60 credits of study at Level 5. Students will be enrolled on a 360 credit honours with study abroad programme. A 60 credit Level 5 study abroad module (5254NATSCI) will normally replace the semester 2 modules on the standard programme. This study abroad should cover the same learning outcomes as the modules being replaced. The modules to be studied in the host institution must be agreed in advance. The Level 5 mean for the final award mark will be calculated based upon the 120 credits at Level 5. Option B: additional study year abroad following Level 5 The programme will offer the opportunity of an additional study year abroad following Level 5. Students will be enrolled on a 480 credit honours with study abroad programme. Of those 480 credits, 120 will be taken via a Level 5 study abroad module (5250NATSCI) the modules to be studied in the host institution must be agreed in advance. The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5.

Sandwich Year. The placement year will follow Level 5 and students will be enrolled on a 480 credit honours sandwich programme and take the module 5219NATSCI (Sandwich Year-Biology). The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5.

Students wishing to select 6203NATSCI are advised to also study 5205NATSCI.

Students who started the programme in 2021 migrate to the new rules at levels 5 and 6 with the exception of 5111BMBMOL and 6111BMBMOL – for those students 5103BMBMOL and 6106BMBMOL will continue to be options.

Students who started the programme in 2020 will migrate to the new structure at level 6 with the exception of 6111BMBMOL – 6106BMBMOL will stay an option for those students.

Programme Structure - 360 credit points	
Level 4 - 120 credit points	
Level 4 Core - 120 credit points	CORE
[MODULE] 4106BMBMOL Microbiology Approved 2022.01 - 20 credit points	
[MODULE] 4201NATSCI Fundamentals of Scientific Research Approved 2022.01 - 20 credit points	
[MODULE] 4202NATSCI Practical Skills for Biology Approved 2022.01 - 20 credit points	
[MODULE] 4206NATSCI Genetics and Evolution Approved 2022.01 - 20 credit points	
[MODULE] 4209NATSCI Ecology Approved 2022.02 - 20 credit points	
[MODULE] 4211NATSCI Physiology Approved 2022.01 - 20 credit points	
Level 5 - 120 credit points	
Level 5 Core - 60 credit points	CORE
[MODULE] 5201NATSCI Research Skills and Employability Approved 2022.03 - 20 credit points	
[MODULE] 5204NATSCI Diversity and Evolution of Life Approved 2022.01 - 20 credit points	
[MODULE] 5212NATSCI Physiology of Life Approved 2022.01 - 20 credit points	
Level 5 Optional - 60 credit points	OPTIONAL

[MODULE] 5111BMBMOL Immunology and medical microbiology Approved 2022.01 - 20 credit points	
[MODULE] 5202NATSCI Ecology Field Skills Approved 2022.01 - 20 credit points	
[MODULE] 5205NATSCI Genes and Genomes Approved 2022.01 - 20 credit points	
[MODULE] 5209NATSCI Marine and Freshwater Biology Approved 2022.01 - 20 credit points	
[MODULE] 5214NATSCI Developmental Biology Approved 2022.03 - 20 credit points	
[MODULE] 5405NATSCI Impact of Climate Change On Biological Processes Approved 2022.02 - 20 credit points	
Optional placement - 120 credit points	OPTIONAL
Placement Year - 120 credit points	OPTIONAL
[MODULE] 5219NATSCI Sandwich Year - Biology Approved 2022.01 - 120 credit points	
OR Study Abroad - 120 credit points	OPTIONAL
[MODULE] 5250NATSCI Study Year Abroad - Biology Approved 2022.01 - 120 credit points	
Optional Study Semester - 60 credit points	OPTIONAL
[MODULE] 5254NATSCI Study Semester Abroad - Biology Approved 2022.01 - 60 credit points	
Level 6 - 120 credit points	
Level 6 Core - 60 credit points	CORE
[MODULE] 6201NATSCI Research Project Approved 2022.01 - 40 credit points	
[MODULE] 6202NATSCI Health and Disease Approved 2022.01 - 20 credit points	
Level 6 Optional - 60 credit points	OPTIONAL
[MODULE] 6111BMBMOL Clinical immunology and medical microbiology Approved 2022.01 - 20 credit points	
[MODULE] 6203NATSCI Applications of Genetics in Health and Disease Approved 2022.01 - 20 credit points	
[MODULE] 6204NATSCI Frontiers of Ecology Approved 2022.03 - 20 credit points	
[MODULE] 6206NATSCI Advanced Field Skills Expedition Approved 2022.01 - 20 credit points	
[MODULE] 6211NATSCI Neurobiology Approved 2022.02 - 20 credit points	
[MODULE] 6212NATSCI Parasitology Approved 2022.01 - 20 credit points	
[MODULE] 6213NATSCI Applied Marine Biology Approved 2022.01 - 20 credit points	
[MODULE] 6214NATSCI Forensic Bioscience Approved 2022.02 - 20 credit points	
[MODULE] 6222NATSCI Neuroendocrinology Approved 2022.01 - 20 credit points	
[MODULE] 6300NATSCI Work-Based Learning Approved 2022.01 - 20 credit points	

Module specifications may be accessed at https://proformas.ljmu.ac.uk/Default.aspx

Teaching, Learning and Assessment

The acquisition of knowledge is fostered through a range of taught sessions, these include: lectures, practical laboratory classes, and fieldtrips. Understanding of taught material is facilitated through tutorials, problem-based learning sessions, workshops, seminars, group work and independent study. Knowledge and understanding are assessed in a variety of ways. These include: online tests, examinations, laboratory and field reports, essays, and seminars, including problem-based learning sessions, case-studies, and poster presentations. Biology-related skills are developed in many areas of the programme. For example, the ability to synthesise and analyse information critically is developed in laboratory and field sessions from Level 4 to 6, including in the Practical Skills for Biology and the Research Project modules. Applying subject knowledge and understanding to address unfamiliar problems is developed in workshops in many modules, especially in modules that utilise interpretative examination questions. Moral and ethical issues are a key part of modern biology and developed in many taught and practical sessions. Laboratory and field reports, scientific communication, essays and examinations allow students to demonstrate the full range of these skills and attributes. Practical and professional skills are taught during laboratory classes and fieldtrips. Core principles and minimum standards of practical work are introduced at Level 4, developed at Level 5, and at Level 6 the students apply these skills during their independent Research Project. If the student has chosen the Work-Based Learning for Credit module (WBL) then these practical skills will be developed in an applied work setting. These practical and professional skills are assessed through laboratory and field reports, including the Research Project report. Transferable and key skills are inherent within the programme, but specifically they are taught in core modules at all Levels (Practical Skills for Biology and Fundamentals of Scientific Research at Level 4; Research Skills & Employability at Level 5; Research Project at Level 6). These transferable and key skills are assessed through coursework at all levels, in all modules

Opportunities for work related learning

Graduate Skills are taught and practised within a wide range of modules and assessed within the core modules at Level 4 Fundamentals of Scientific Research and Practical Skills for Biology, Level 5 Research Skills and Employability and at Level 6 Research Project and/or Work-Based Learning. Work-related learning opportunities are also available through the routes of employer seminars, guest lectures/workshops, employer-driven assignments and modules, and contact during fieldwork. There are options for residential field work at levels 4 and 6. The Work-based Learning placement (135 hrs) and the Sandwich placement (12 months) offer the opportunity for students to gain work experience with a relevant professional organisation. Students are supported by the Professional Training Tutor who is responsible for advertising placements and promoting vocational training to students. These opportunities may be in the UK or abroad.

Entry Requirements

Type	Description
A levels	Applicants should have (or expect to obtain) at least 2 'A2' Levels or equivalent, at least one of which should be in an appropriate science subject (normally Biology), but two are preferable. Our minimum points tariff is 112; this will depend on subjects being studied. Our offers may be grade specific (e.g. we usually expect at least 32 points in A2 Biology).
BTECs	BTEC applicants should hold or be studying an appropriate Diploma and have (or expect to obtain) a pass with at least a distinction/merit/merit profile of grades. The topics studied must include a significant number of science-based modules, usually a minimum of six.

NVQ	Second year entry can potentially be arranged for candidates who have a HND or HNC with merits in the key relevant units or for those who have passed the first year of a degree programme in a closely related subject elsewhere.
International Baccalaureate	Applicants must have (or expect to obtain) the full award including grade 5 in one appropriate science.
Other international requirements	Applicants should have acquired passes in appropriate examinations in their country of origin and provide evidence of English language ability equivalent to 6.0 IELTS. For example, International Baccalaureate applicants must have (or expect to obtain) the full award, including grade 5 in one appropriate science.
Alternative qualifications considered	Applicants must have obtained grade 4 or grade C or above in English Language and Mathematics GCSE or • Key Skills Level 2 in English/ Maths • NVQ Level 2 Functional skills in Maths and English Writing and or Reading Skills for Life Level 2 in Numeracy/English • Higher Diploma in Maths/ English • Functional skills level 2 in Maths/ English

Extra Entry Requirements