

PROGRAMME SPECIFICATION

Part 1: Information	
Awarding Institution	UWE
Teaching Institution	University Centre Weston (UCW).
Delivery Location	UCW, Knightstone Campus
Study abroad / Exchange / Credit recognition	N/A
Faculty responsible for programme	Health and Applied Sciences
Department responsible for programme	Applied Sciences
Professional Statutory or Regulatory Body Links	None
Highest Award Title	FdSc Biological Laboratory Sciences.
Default Award Title	
Interim Award Titles	Certificate of Higher Education
UWE Progression Route	BSc (Hons) Biological Sciences
Mode of Delivery	FT / PT
ISIS code/s	C11G
For implementation from	September 2018

Part 2: Description

The FdSc Biological Laboratory Sciences programme has a broad based curriculum encompassing the processes and mechanisms of life from the molecular to ecosystem level, in addition to developing in students the understanding of, and ability to engage with, the scientific process. The programme will require students to apply their scientific knowledge to practice-based scenarios, enabling them to plan and set up experiments, analyse results, propose solutions and solve problems. Laboratory tasks will be carried out using current scientific approaches and specialist equipment, whilst also showing an understanding of health and safety requirements.

Students will acquire practical experience in the following biological research methods:

- biochemical-testing,
- microscopy,
- enzyme assays,
- extraction of DNA and RNA,
- working with microbial cultures,
- detection and selection of specific microorganisms,
- DNA manipulations,
- cloning and recombinant DNA technology,
- expression and extraction of proteins,
- protein analysis
- immunological assays.

The FdSc programme has been designed to enable students to top- up to an Honours degree qualification on the BSc (Hons) Biological Sciences programme delivered by UWE.

The programme has been designed to:

- *generate highly experienced and well-skilled graduates within a biological laboratory setting. The laboratory skills developed range from calibrating laboratory equipment to performing genetic manipulations, gene cloning and protein analysis techniques.*
- *enable graduates to progress into laboratory settings within research institutes, biological sampling and analysis facilities or biotechnology/pharmaceutical industry. Graduates will be able to progress to a laboratory management role or to become a specialist technician within a particular area.*
- *cover a wide range of topics and practical skills within biosciences and is designed to enable graduates to be flexible with their future career choices and progress into employment or undertake further study.*

The specific aims of the programme are to:

- *provide an in-depth knowledge base in a wide variety of biosciences areas, linked to a strong provision of laboratory skills and molecular biology techniques.*
- *ensure that the learning taking place is inquisitive, challenging and successful during each session. The assessment strategy will include written and oral assessments under timed conditions or in a self-directed manner. Assessment types will ensure that students*

Part 2: Description
<p><i>develop excellent time-management, organisational self-management, team and independent working skills.</i></p> <ul style="list-style-type: none"><i>Use and interpret literature appropriate to the biological sciences with a full and critical understanding, while addressing such questions as content, context, aims, objectives, quality of information and its interpretation and application.</i><i>Provide a curriculum that is enhanced by the strong relationship between teaching, learning and professional practice that is expected by the work place.</i>
Programme requirements for the purposes of the Higher Education Achievement Record (HEAR)
<p>The FdSc Biological Laboratory Sciences programme has been designed to deliver both outstanding theoretical and practical laboratory learning. The programme aims to advance the students' knowledge and understanding of the complexities and diversities of life through the study of: human, molecular and ecological areas of the biological and laboratory sciences. It provides an opportunity for students to explore the theory and practice related to the biological sciences, and to develop subject-specific laboratory skills and important generic graduate attributes.</p>
Regulations
<p>A: Approved to University Regulations and Procedures</p>

Part 3: Learning Outcomes

The award route provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:

A. Knowledge and Understanding (subject specific)

A successful graduate will be able to:

1. Demonstrate knowledge and understanding of practical laboratory techniques, including data collection, analysis, interpretation and evaluation of the results, testing of hypotheses.
2. Place the experimental work in context and to suggest lines of further investigation.
3. Understand and explain biological phenomena at a variety of levels (from molecular to ecological systems) and how evolutionary theory is relevant to biological processes.
4. 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.
5. Understand and appreciate ethical issues within biosciences and how they underpin professional integrity and standards.
6. Understand the impact on society of advances in the biosciences.
7. Appreciate 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.
8. Have the ability to give a clear and accurate account of a subject, organise arguments in a sophisticated way and engage in debate and dialogue both with specialists and non-specialists, using appropriate scientific language.

B. Intellectual Skills

A successful graduate will be able to:

1. Recognise and apply subject-specific theories, paradigms, concepts or principles.
2. Seek and analyse, synthesise and summarise information critically, including published research or reports.
3. Obtain and integrate several lines of subject-specific evidence to formulate and test hypotheses.
4. Apply subject knowledge and understanding to address familiar and unfamiliar problems.
5. Synthesising knowledge as an independent learner and a manager of self.
6. Recognise the moral and ethical issues of investigations and appreciate the need for ethical standards and professional codes of conduct.
7. 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.

C. Subject/Professional/Practical Skills (subject specific)

Biosciences graduates will be able to:

1. Design, plan, conduct and report on investigations, which may involve primary or secondary data (for example from a survey database)
2. Obtain, record, collate and analyse data using appropriate techniques in the field and/or laboratory, working individually or in a group, as is most appropriate for the subject under study
3. Undertake laboratory investigations of living systems in a responsible, safe and ethical manner.
4. Explain and justify the impact of investigations on the environment, on the organisms or subjects under investigation, and on other stakeholders.
5. Use and interpret a variety of sources of information: textual, numerical, verbal, graphical
6. Carry out sample selection; record and analyse data in the field and/or the laboratory; ensure validity, accuracy, calibration, precision, replicability and highlight uncertainty and possible bias during collection.
7. Interpret and present data, using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programmes for presenting data visually.

D. Transferable Skills and other attributes (generic)

A successful graduate will be able to:

1. Analyse, synthesise and summarise information critically from a variety of sources using appropriate referencing methods.
2. Understand the importance of academic and research integrity.
3. Receive, respond to and problem solve using a variety of methods and sources of information: textual, numerical, verbal, graphical
4. Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles, in particular those being developed through practical, laboratory and/or field studies
5. Work effectively within teams.
6. Develop the skills necessary for independent lifelong learning (for example working independently, time management, organisational, enterprise and knowledge transfer skills)

		USSKNH-30-1: Laboratory skills and data analysis for biosciences	USSKNE-15-1: Core Chemistry	USSKNG-30-1: Practical Cell Biology and Biochemistry	USSKNF-15-1: Microbiology	USSKNC-15-1: Anatomy and Physiology	USSKND-15-1: Environmental Sciences	USSKNK-15-2: Work based Learning	USSKNL-30-2: Ecology and Eco-systems	USSKNN-30-2: Research skills and Laboratory project	USSKNM-30-2: Practical applications of molecular biology and biotechnology	USSKNU-15-2: Human Health and Diseases	
	Learning Outcomes:												
	A) Knowledge and understanding of:												
	Demonstrate knowledge and understanding of practical laboratory techniques, including data collection, analysis, interpretation and evaluation of the results, testing of hypotheses.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Place the experimental work in context and to suggest lines of further investigation	✓								✓	✓	✓	
	Understand and explain biological phenomena at a variety of levels (from molecular to ecological systems) and how evolutionary theory is relevant to biological processes			✓	✓	✓	✓		✓	✓	✓	✓	
	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	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Understand and appreciate ethical issues within biosciences and how they underpin professional integrity and standards									✓	✓	✓	
	Understand the impact on society of advances in the biosciences									✓	✓	✓	
	Appreciate 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		✓	✓	✓	✓							

Have the ability to give a clear and accurate account of a subject, organise arguments in a sophisticated way and engage in debate and dialogue both with specialists and non-specialists, using appropriate scientific language.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(B) Intellectual Skills												
Recognise and apply subject-specific theories, paradigms, concepts or principles.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Seek and analyse, synthesise and summarise information critically, including published research or reports.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Obtain and integrate several lines of subject-specific evidence to formulate and test hypotheses.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Apply subject knowledge and understanding to address familiar and unfamiliar problems.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Synthesising knowledge as an independent learner and a manager of self.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Recognise the moral and ethical issues of investigations and appreciate the need for ethical standards and professional codes of conduct									✓	✓	✓	
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.	✓							✓	✓	✓	✓	
(C) Subject/Professional/Practical Skills												
Design, plan, conduct and report on investigations, which may involve primary or secondary data (for example from a survey database)	✓	✓	✓	✓					✓	✓	✓	
Obtain, record, collate and analyse data using appropriate techniques in the field and/or laboratory, working individually or in a group, as is most appropriate for the subject under study	✓	✓	✓	✓					✓	✓	✓	
Undertake laboratory investigations of living systems in a responsible, safe and ethical manner.	✓	✓	✓	✓					✓	✓	✓	
Explain and justify the impact of investigations on the environment, on the organisms or subjects under investigation, and on other stakeholders.	✓	✓	✓	✓					✓	✓	✓	
Use and interpret a variety of sources of information: textual, numerical, verbal, graphical	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carry out sample selection; record and analyse data in the field and/or the laboratory; ensure validity, accuracy,	✓	✓	✓	✓		✓			✓	✓	✓	

[illegible]

Part 4: Programme Structure

This structure diagram demonstrates the student journey from Entry through to Graduation for a typical **full time undergraduate student** including:

- level and credit requirements
- interim award requirements
- module diet, including compulsory and optional modules

ENTRY	Level 1	Compulsory Modules	Optional Modules	Awards
		Laboratory skills and data analysis for biosciences USSKNH-30-1	<i>No Optional Modules.</i>	Interim award: Certificate of Higher Education (120 credits) Biological Laboratory Sciences
		Core Chemistry USSKNE-15-1		
		Practical Cell Biology and Biochemistry USSKNG-30-1		
		Microbiology USSKNF-15-1		
		Anatomy and Physiology USSKNC-15-1		
		Environmental Sciences USSKND-15-1		
	Level 2	Compulsory Modules	Optional Modules	Interim Awards
		Work based Learning USSKNK-15-2	<i>No Optional Modules.</i>	
		Ecology and Eco-systems USSKNL-30-2		
		Research skills and Laboratory project USSKNN-30-2		
		Practical applications of molecular biology and biotechnology USSKNM-30-2		
		Human Health and Diseases USSKNJ-15-2		

Part time:

The following structure diagram demonstrates the indicative student journey from Entry through to Graduation for a typical **part time student**.

ENTRY		Compulsory Modules	Optional Modules	Awards
Year 1	Level 1	Laboratory skills and data analysis for biosciences USSKNH-30-1	<i>No Optional Modules.</i>	Interim award: Certificate of Higher Education (120 credits) Biological Laboratory Sciences
		Core Chemistry USSKNE-15-1		
		Practical Cell Biology and Biochemistry USSKNG-30-1		
		Microbiology USSKNF-15-1		
Year 2		Anatomy and Physiology USSKNC-15-1		
		Environmental Sciences USSKND-15-1		
Year 2		Compulsory Modules	Optional Modules	Interim Awards
	Level 2	Work based Learning USSKNK-15-2	<i>No Optional Modules.</i>	
Year 2		Ecology and Eco-systems USSKNL-30-2		
		<i>Human Health and Diseases (15 credits)</i> USSKNJ-15-2		
Year 2		Practical applications of molecular biology and biotechnology USSKNM-30-2		
Year 3		Research skills and Laboratory project USSKNN-30-2		

Part 5: Entry Requirements

The University's Standard Entry Requirements apply

Tariff points as appropriate for the year of entry - up to date requirements are available through the [courses database](#).

Part 6: Reference Points and Benchmarks

Set out which reference points and benchmarks have been used in the design of the programme:

[QAA UK Quality Code for HE](#)

- Framework for higher education qualifications (FHEQ)
- Subject benchmark statements
- Qualification characteristics for [Foundation degrees](#) and [Master's degrees](#)

[Strategy 2020](#)

[University policies](#)

Staff research projects

Any relevant PSRB requirements

Any occupational standards

UWE Enhancement Framework

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First SUVP Approval Date	17/05/2018			
Revision Approval Date		Version	1	Link to ID 4662
Next Programme Enhancement Review due date	2024-25			
Date of last Programme Enhancement Review	6 November 2019			