

Undergraduate Programme Specification

Session	2024/25	Last Modified	30/08/2024				
Named Award Title	BSc (Hons) Science S	Single					
Award Title for Each	BSc (Hons) Science						
Award	BSc Science						
	DipHE Science						
Date of Approval	Jan 2019	an 2019					
Details of Cohort Applies to	All new and existing co	horts					
Awarding Institution	University of the West of Scotland	Teaching University of the West of Scotland					
Language of Instruction	on & Examination	English					
Award Accredited by		N/A					
Maximum Period of Ro	egistration						
Duration of Study							
Full-time	4 years	Part-time	8 years				
Placement (compulsory)	N/A						
Mode of Study	∑ Full-time						
	□ Part-time						
Campus	Ayr	\times Lanarkshire	Online / Distance				
	☐ Dumfries	London	Learning				
		Paisley	Other (specify)				
School	Health and Life Scien	ces					
Divisional	Biological Sciences 1						
Programme Board	Diological Sciences F	ioattii					
Programme Leader	S Kelly						

Admissions Criteria

Candidates must be able to satisfy the general admission requirements of the University of the West of Scotland as specified in Chapter 2 of the University Regulatory Framework together with the following programme requirements:

SQA National Qualifications:
This is an exit award only.
Or GCE
This is an exit award only.
Or SQA National Qualifications / Edexcel Foundation
This is an exit award only.
Other Required Qualifications/Experience
Further desirable skills pre-application

General Overview

The BSc/BSc Honours in Science is an exit award only. The degree allows a broad choice of modules across a range of Science disciplines. Successful completion of the programme at level 8 (total of 240 points with at least 90 at level 8) allows students to exit with a DipHE or progress to L9. Successful completion of the programme at level 9 leads to the award of the BSc Science (total of 360 points with at least 90 at level 9) or at level 10 the Honours programme in Science, is awarded on successful completion of 480 points with at least 90 at level 10.

The curriculum is necessarily broad and includes options in Biology, Chemistry, Forensic Science, Health Science, Pharmaceutical Science, Mathematics and Physics.

The teaching strategy associated with the programme seeks to foster the following: 1. To develop critical, analytical problem-based learning skills and the transferable skills to prepare the student for employment or degree-level study. 2. To enable the student to engage in lifelong learning, study and enquiry, and to appreciate the value of education to society 3. To assist the student to develop the skills required for both autonomous practice and teamworking 4. To develop in the student a knowledge and understanding of the principles governing the sciences 5. To enable the student to acquire competence in a range of practical methods in the sciences. All of the modules that support the above utilize a blend of formal lectures and practical work. In addition, students are supported by personal tutors. Elearning is specifically enabled through the use of a Virtual Learning Environment. All modules within the programme use the VLE to support the delivery of material.

Typical Delivery Method

All modules will be delivered on-campus with one day per module nominally assigned.

Any additional costs

A laboratory coat and safety goggles will be required for some practical classes.

Graduate Attributes, Employability & Personal Development Planning

The development of UWS graduate attributes is embedded within all years of the programme. Our aim is to provide students at UWS with opportunities to develop academically, professionally and personally: to broaden their ambitions, extend their attitudes, challenge

their assumptions, and assist towards unlocking their potential to succeed in their studies and future lives.

Critical Thinker: The ability to evaluate yourself and your own thinking; assessing and evaluating complex information from different sources, challenging and questioning presented knowledge and facts, drawing reflective conclusions and articulating knowledge. Thinking reflectively and logically, being able to explain your thought processes, forming you own conclusions, constructing coherent arguments and taking actions based on your own thinking and relevant information.

Ethically Minded: Understanding ethical principles, awareness and appreciation of the values and beliefs of others in relation to own actions. Knowledge of moral decisions; respect for other people's beliefs and the environment; being non-judgmental.

Collaborative: Ability to work with a range of people, receptive to others' views and working well with others to reach shared goals. Being a good communicator, open-minded, flexible, empathetic, a good listener, and pro-active.

Autonomous: Taking responsibility for own actions to help become an independent learner. Applying learning and knowledge outwith university, having confidence in self, taking responsibility for own actions and making informed decisions. Self-directed, disciplined, using initiative and being self-motivated.

Resilient: The ability to weather challenges and setbacks, utilising adversity to build new skills and support others in the future. Being determined, motivated, self-confident and demonstrating will-power. Not fearing failure.

Driven: Ambitious; highly motivated to achieve desired outcome; focussed. A willingness to work hard; committed to achieving objectives; highly engaged with self-determination. Pushing personal boundaries and having the confidence to gain new experience.

Problem Solver: Identifying what the problems are, including both what is known and what is unknown. Showing the application of knowledge to problematic situations/issues and evaluating a range of creative options; Identifying a problem and then finding solutions. Ability to be creative and knowledgeable enough to ask the right questions and to step up to take ownership of tasks/activities.

Effective Communicator: To adapt what you are communicating to a specific audience. Communicating effectively to present ideas, discuss, persuade, negotiate, debate and challenge. Possessing skills to communicate verbally and non-verbally in an engaging and articulate manner. Listening.

Ambitious: Aiming to achieve. Know where you want to be, setting goals, targets and making progress to accomplish these.

Individual modules will specify where opportunities to develop these skills occur.

Work Based Learning/Placement Details

The programme has optional work related learning modules at level 9.

Attendance and Engagement

In line with the <u>Student Attendance and Engagement Procedure</u>, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online

teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this programme, academic engagement equates to the following:

Attendance at all classes associated with the programme is required. This includes outdoor fieldwork as well as classes on campus in classrooms and laboratories.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: <u>UWS Equality, Diversity and Human Rights Code.</u>

There are no specific arrangements for this programme. The programme should be suitable for all students who are capable of attending formal lectures, working in computer laboratories and practical laboratories. Students may also need to be capable of undertaking outdoor fieldwork in natural habitats depending on module selections.

Programme structures and requirements, SCQF level, term, module name and code, credits and awards (Chapter 1, Regulatory Framework)

Learning Outcomes

	SCQF LEVEL 8
	Learning Outcomes
	Knowledge and Understanding
A1	Demonstrate a broad knowledge of the essential facts, major concepts, principles and core theories associated with selected science disciplines.
A2	Be able to formulate simple hypotheses appropriate to the science disciplines under study.
А3	
A4	
A5	
	Practice - Applied Knowledge and Understanding
B1	Use a range of basic and routine practical skills in the sciences.
B2	Formulate and test hypotheses using scientific methods.
В3	Detailed data collection in the science disciplines under study.
B4	Appreciate the importance of safety in laboratory and/or field environments when collecting scientific data.
B5	
	Communication, ICT and Numeracy Skills
C1	Be able to convey complex ideas to a range of different audiences including peers and academics.
C2	Routine use of IT for the presentation and manipulation of scientific data.
СЗ	Ability to interpret different types of information.
C4	
C5	
	Generic Cognitive Skills - Problem Solving, Analysis, Evaluation
D1	Evaluate scientific information appropriate to the disciplines under study.
D2	Use different approaches to formulate evidence-based solutions.
D3	
D4	
D5	
	Autonomy, Accountability and Working with Others
E1	Exercise initiative in undertaking laboratory reports and other written material.
E2	Be able to work in a team and to also follow instructions in relation to laboratory work.
E 3	Development of the ability to manage time in respect of laboratory practical work.

E4	
E 5	

Level 8 Modules

OPTION

SCQF	Module	Module Title	Credit	Term		Footnotes	
Level	Code			1	2	3	
		120 credits from the module list below, subject to academic advice and any pre-requisites					
8	BIOL08001	Vertebrate Physiology	20	\boxtimes			
8	BIOL08002	Practical Skills in Biomed. and Env. Health	20				
8	BIOL08003	Human Biology	20				
8	BIOL08004	Introductory Microbiology	20				
8	BIOL08005	Cells & Sugars	20				
8	BIOL08012	Genetics	20				
8	BIOL08019	Core Biomedical Science	20				
8	BIOL08024	Legislative Framework in Practice	20	\boxtimes			
8	BIOL08025	Humans and the Global Biosphere	20				
8	BIOL08026	Forensic Evidence- Analysis and Retrieval	40				
8	BIOL08027	Animal Behaviour	20				
8	CEWM08001	Health & Hygiene	20		\boxtimes		
8	CEWM08003	Safety Technology	20				
8	CEWM08004	Working Environment	20				
8	CEWM08005	The Management of Risk	20				
8	CEWM08006	Legislative Framework	20	\boxtimes			
8	CEWM08007	Environmental Protection	20		\boxtimes		
8	CEWM08008	Managing Risks in Business	20	\boxtimes			
8	CHEM08001	Physical Chemistry 2	20				
8	CHEM08002	Organic Chemistry 2	20	\boxtimes			
8	CHEM08003	Inorganic Chemistry 2	20				
8	CHEM08004	Chemical Analysis & Evaluation	20		\boxtimes		
8	CHEM08005	Science Independent Study	20		\boxtimes	\boxtimes	
8	CHEM08007	Evaluating Forensic Evidence	20		\boxtimes		
8	CHEM08009	Analytical Measurement	20				
8	CHEM08013	Chemical Laboratory Techniques	20				

8	CHEM08015	Pharmacology, drugs & behaviour	20				
8	MATH08002	Differential Equations 1	20		\boxtimes		
8	PHYS08002	Optics & Electronics	20	\boxtimes			
8	PHYS08003	Oscillations, Waves & Fields	20				
8	PHYS08004	Properties of Matter	20				
8	PHYS08007	Classical Mechanics	20				
		Or any other L7/L8 Science or University-wide module to which timetable and entry prerequisites permit					
Footno	tes for Option N	1odules		•	•	ı	

Level 8

Criteria for Progression and Award

Please refer to <u>UWS Regulatory Framework</u> for related regulations

120 credits are required for progression to the next level and the prerequisites for the Modules in the programme at the next level must be satisfied. The exit award is the Diploma in Higher Education, the requirements for which are 240 credits with at least 90 credits at SCQF 8 or higher.

Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26).

	SCQF LEVEL 9
	Learning Outcomes (Maximum of 5 per heading)
	Knowledge and Understanding
A1	Demonstrate a broad and integrated knowledge of ideas, concepts and facts relating to selected science disciplines.
A2	Be able to formulate and to test hypotheses in selected disciplines and relate these to the generation of scientific data and knowledge.
А3	
A4	
A5	
	Practice - Applied Knowledge and Understanding
B1	Use a range of basic and routine practical skills, and a few specialized skills in the sciences.
B2	Show an ability to interpret experimental evidence.
В3	An understanding of different methods of data collection and recording in science.
B4	Appreciate the importance of safety and develop the skills required to carry out a risk assessment.
B5	
	Communication, ICT and Numeracy Skills
C1	Evaluate qualitative and quantitative data and recognize the difference between these data sets.
C2	Be able to convey complex ideas and to make formal presentations to a wide range of audiences.
C3	Be able to use appropriate IT to manipulate, statistically analyse, and present scientific data.
C4	
C5	
	Generic Cognitive Skills - Problem Solving, Analysis, Evaluation
D1	Critically evaluate and synthesize scientific information.
D2	Be able to identify routine technical, practical and ethical problems and issues that confront the professional scientist.
D3	
D4	
D5	Autonomy Accountability and Wardingswith Others
	Autonomy, Accountability and Working with Others
E1	Exercise initiative in undertaking laboratory reports and other written material.
E2	Be able to take responsibility for the work of others when undertaking group project work.
E 3	Be able to deal with ethical issues associated with selected disciplines.
E4	
E 5	

Level 9 Modules

OPTION

Level Code	SCQF	Module	Module Title	Credit	Term			Footnotes
BIOL09005 Applied Microbiology 20					1		3	
9 BIOL09006 Proteins: Form & Function 20 □								
9 BIOL09008 Animal Diversity 20 □ </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Щ</td> <td></td>							Щ	
9 BIOL09009 Bio-Case Study 20 □ <td>9</td> <td>BIOL09006</td> <td>Proteins: Form & Function</td> <td>20</td> <td></td> <td></td> <td></td> <td></td>	9	BIOL09006	Proteins: Form & Function	20				
9 BIOL09010 Biological Conservation 20 □	9	BIOL09008	Animal Diversity	20				
9 BIOL09011 Bio-Professional Practice 20 □	9	BIOL09009	Bio-Case Study	20		\boxtimes		
9 BIOL09013 Entomology & Parasitology 20 □	9	BIOL09010	Biological Conservation	20	\boxtimes			
9 BIOL09014 Factors Facing Drug Addition 20 □	9	BIOL09011	Bio-Professional Practice	20				
9 BIOL09015 Forensic Analytical Techniques 20	9	BIOL09013	Entomology & Parasitology	20	\boxtimes			
9 BIOL09016 Forensic Investigation 20 □ <	9	BIOL09014	Factors Facing Drug Addition	20		\boxtimes		
9 BIOL09020 Pure & Applied Genetics 20 □	9	BIOL09015	Forensic Analytical Techniques	20	\boxtimes			
9 BIOL09022 Work Related Learning 20 20 □	9	BIOL09016	Forensic Investigation	20		\boxtimes		
9 BIOL09023 Work Related Learning 40 40 □	9	BIOL09020	Pure & Applied Genetics	20		\boxtimes		
9 BIOL09028 Professional Laboratory Training in BMS 40 □ <td< td=""><td>9</td><td>BIOL09022</td><td>Work Related Learning 20</td><td>20</td><td></td><td></td><td></td><td></td></td<>	9	BIOL09022	Work Related Learning 20	20				
Training in BMS	9	BIOL09023	Work Related Learning 40	40				
Biomedical Science	9	BIOL09028		40				
9 BIOL09033 Molecular & Cellular Pathology 20	9	BIOL09029		20				
9 BIOL09034 Infection and Immunity 20	9	BIOL09032	Intermediate Blood Sciences	20				
9 BIOL09035 Field Biology 20	9	BIOL09033	Molecular & Cellular Pathology	20	\boxtimes			
9 BIOL09037 Wildlife Biology 20	9	BIOL09034	Infection and Immunity	20				
9 CEWM09001 Safety Case Study 20	9	BIOL09035	Field Biology	20				
9 CEWM09002 Safety Management Skills 20 Image: Cew Mo9003 Image: Cew Mo9003 Managing Health & Safety 20 Image: Cew Mo9003 Image: Cew Mo9004 Image: Cew Mo9004 Image: Cew Mo9004 Image: Cew Mo9004 Image: Cew Mo9005 Image: Cew Mo9005 Image: Cew Mo9004 Image: Cew Mo9004 <t< td=""><td>9</td><td>BIOL09037</td><td>Wildlife Biology</td><td>20</td><td></td><td>\boxtimes</td><td></td><td></td></t<>	9	BIOL09037	Wildlife Biology	20		\boxtimes		
9 CEWM09003 Managing Health & Safety 20	9	CEWM09001	Safety Case Study	20	\boxtimes		\boxtimes	
9 CEWM09004 Environmental Responsibilities 20	9	CEWM09002	Safety Management Skills	20	\boxtimes			
9 CEWM09005 Managing Business Risks 20	9	CEWM09003	Managing Health & Safety	20		\boxtimes		
9 CEWM09009 SHE Work Related Learning 20	9	CEWM09004	Environmental Responsibilities	20		\boxtimes	\boxtimes	
9 CEWM09010 Food Inspection and Food Safety 9 CEWM09011 Environmental Health Professional Practice 1 9 CHEM09001 Inorganic Chemistry 3 9 CHEM09002 Analytical Chemistry 9 CHEM09003 Physical Chemistry 3 20	9	CEWM09005	Managing Business Risks	20				
Safety 9 CEWM09011 Environmental Health Professional Practice 1 9 CHEM09001 Inorganic Chemistry 3 9 CHEM09002 Analytical Chemistry 9 CHEM09003 Physical Chemistry 3 20	9	CEWM09009	SHE Work Related Learning	20		\boxtimes	\boxtimes	
Professional Practice 1 9 CHEM09001 Inorganic Chemistry 3 9 CHEM09002 Analytical Chemistry 9 CHEM09003 Physical Chemistry 3 20	9	CEWM09010	•	20				
9 CHEM09002 Analytical Chemistry 20	9	CEWM09011		20				
9 CHEM09003 Physical Chemistry 3 20 🖂 🗌	9	CHEM09001	Inorganic Chemistry 3	20				
	9	CHEM09002	Analytical Chemistry	20				
9 CHEM09004 Organic Chemistry 3 20 TIMI	9	CHEM09003	Physical Chemistry 3	20				
	9	CHEM09004	Organic Chemistry 3	20				

9	CHEM09005	Safety, Health, Env Protection	20	Ш	\bowtie	Ш	
9	CHEM09008	Trace Evidence & Microscopy	20				
9	CHEM09009	Forensic Laboratory	20				
		Techniques					
9	CHEM09023	Designer Drugs	20				
9	PHYS09001	Advanced Optics	20		\boxtimes		
9	PHYS09003	Electromagnetism	20	\boxtimes			
9	PHYS09007	Thermodynamics & Statistical	20		\boxtimes		
		Physics					
9	PHYS09008	Quantum Mechanics	20	\boxtimes			
9	PHYS09009	Imaging & Nuclear Medicine	20		\boxtimes		
		Or any other L8/L9 Science or					
		University-wide module to					
		which timetable and entry					
		prerequisites permit.					
Footno	tes for Option M	1odules					

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Criteria for Progression and Award

Please refer to <u>UWS Regulatory Framework</u> for related regulations

6 modules at grade C are required for progression to next the level and the prerequisites for the Modules in the programme at the next level must be satisfied. The exit award is the BSc Science, the requirements for which are 360 credits with at least 90 credits at SCQF 9 or higher.

Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26)

	SCQF LEVEL 10
	Learning Outcomes (Maximum of 5 per heading)
	Knowledge and Understanding
A1	Show an awareness of current developments in selected areas of science and its applications, noting philosophical and ethical issues that have arisen and which affect the quality and sustainability of life.
A2	Demonstrate knowledge of the applicability of scientific skills and methods to career development.
А3	Demonstrate a critical understanding of key principles, theories, and concepts within the selected science disciplines.
A4	Develop specific hypotheses for testing in a research project.

A5	
	Practice - Applied Knowledge and Understanding
B1	Use a wide range of basic and routine practical skills, and a few specialized skills in selected disciplines.
B2	Execute a defined research project. Be able to accurately collect and record specific data as it relates to the discipline under study.
В3	Identify and retrieve scientific information.
B4	Undertake a risk assessment and costing as it relates to a research project.
B5	Present information clearly and accurately.
	Communication, ICT and Numeracy Skills
C1	Be able to convey complex ideas and to make formal presentations on specialised topics to a wide range of audiences.
C2	Be able to use different software and statistical packages to analyse, manipulate and present data sets as appropriate.
C3	
C4	
C5	
	Generic Cognitive Skills - Problem Solving, Analysis, Evaluation
D1	Be able to identify routine professional problems and issues and to offer professional insights and interpretations.
D2	Critically identify, define and conceptualize issues within the sciences.
D3	Be able to review and consolidate knowledge and to make judgments where the information available is limited.
D4	
D5	
	Autonomy, Accountability and Working with Others
E1	Exercise substantial initiative in undertaking an honours research project.
E2	Evidence of the development of independent research work and associated management of time.
E 3	Be able to deal with complex ethical issues in the science discipline under study.
E4	
E5	

Level 10 Modules

CORE

SCQF	Module	Module Title	Credit	Term		Footnotes	
Level	Code			1	2	3	
		One from the following:					
10	BIOL10006	Bioscience Research Project	40				
10	PHYS10003	Project & Professional Skills	40		\boxtimes		
10	CHEM10001	Science Project	40		\boxtimes		

10	CEWM10004	Safety, Health, Environmental Honours Project	40		
10	CEWM10006	Honours Project (Safety, Health, Environment)	60	\boxtimes	
10	BIOL10026	Environmental Research Project	60		
Footno	tes for Core Mo	dules			

Level 10 Modules

OPTION

SCQF	Module	Module Title	Credit	Term		Footnotes	
Level	Code			1	2	3	
	BIOL10004	Applied Aquatic Ecology	20		Ш		
	BIOL10001	Biology of Disease	20				
	BIOL10008	Clinical Immunology	20	\boxtimes			
	BIOL10009	DNA Technology	20		\boxtimes		
	BIOL10015	Pest Management	20	\boxtimes			
	BIOL10011	Behavioural Ecology	20		\boxtimes		
	BIOL10002	Public Health Microbiology	20		\boxtimes		
	CHEM10002	Advanced Analytical Techniques	20				
	CHEM10004	Physical & Inorganic Chemistry 4	20				
	CHEM10003	Organic Chemistry 4	20	\boxtimes			
	CHEM10010	Forensic Biology	20		\boxtimes		
	CHEM10008	Forensic Evidence	20				
	PHYS10001	Nuclear & Particle Physics	20	\boxtimes			
	PHYS10005	Surface Analysis & Detectors	20	\boxtimes			
	PHYS10010	Research Topics in Nuclear Physics	20				
	PHYS10009	Solid State Physics	20		\boxtimes		
	BIOL10018	Clinical Genetics	20				
	BIOL10023	Housing, Acoustics & Health	20	\boxtimes			
	BIOL10017	Integrative Human Physiology	20		\boxtimes		
	BIOL10014	From Crime Scene to Court	20		\boxtimes		
	BIOL10025	Food and Environmental Microbiology	20				
	CEWM10005	Health and Wellbeing	20				
	CEWM10001	Control Of Pollution	20				
		Or any other L9/L10 Science or University-wide module to					

		which timetable and entry prerequisites permit					
Footnotes for Option Modules							

Level 10

Criteria for Award

Please refer to <u>UWS Regulatory Framework</u> for related regulations

Successful completion of the level 10 programme leads to the award of the BSc Honours Science, the requirements for which are 480 credits with at least 90 credits at SCQF 10 or higher.

No Distinction is awarded at Honours level (Regulation 3.25).

Regulations of Assessment

Candidates will be bound by the general assessment regulations of the University as specified in the <u>University Regulatory Framework</u>.

An overview of the assessment details is provided in the Student Handbook and the assessment criteria for each module is provided in the module descriptor which forms part of the module pack issued to students. For further details on assessment please refer to Chapter 3 of the Regulatory Framework.

To qualify for an award of the University, students must complete all the programme requirements and must meet the credit minima detailed in Chapter 1 of the Regulatory Framework.

Combined Studies

There may be instances where a student has been unsuccessful in meeting the award criteria for the named award and for other more generic named awards existing within the School. Provided that they have met the credit requirements in line with the SCQF credit minima (please see Regulation 1.21), they will be eligible for a Combined Studies award (please see Regulation 1.61).

For students studying BA, BAcc, or BD awards the award will be BA Combined Studies.

For students studying BEng or BSc awards, the award will be BSc Combined Studies.

Version no: 1

Change/Version Control

What	When	Who