

ACADEMIC SERVICES

PROGRAMME SPECIFICATION

Part 1: Basic Data		
<b>Awarding Institution</b>	University of the West of England, Bristol	
<b>Teaching Institution</b>	University of the West of England, Bristol	
<b>Delivery Location</b>	University of the West of England, Bristol	
<b>Faculty responsible for programme</b>	Faculty of Health & Applied Sciences.	
<b>Department responsible for programme</b>	Department of Applied Sciences	
<b>Modular Scheme Title</b>		
<b>Professional Statutory or Regulatory Body Links</b>	None	
<b>Highest Award Title</b>	MSci Environmental Science	
<b>Default Award Title</b>		
<b>Fall-back Award Title</b>		
<b>Interim Award Titles</b>	BSc (Hons) Environmental Science BSc Environmental Science Diploma of Higher Education Environmental Science Certificate of Higher Education Environmental Science	
<b>UWE Progression Route</b>		
<b>Mode(s) of Delivery</b>	FT / SW / PT	
<b>Codes</b>	<b>UCAS:</b>	<b>JACS:</b>
	<b>ISIS2:</b>	<b>HESA:</b>
<b>Relevant QAA Subject Benchmark Statements</b>	Earth Sciences, Environmental Sciences and Environmental Studies (2014)	
<b>CAP Approval Date</b>	31/05/2016 31/05/2017 (v2)	
<b>Valid from</b>	September 2016 September 2017 (v2)	
<b>Valid until Date</b>		
<b>Version</b>	Version 2	

## Part 2: Educational Aims of the Programme

The MSci Environmental Science programme is a four year full-time or five year sandwich degree designed to provide graduates with the knowledge and skills necessary to work effectively in the field of environmental science, for example in environmental regulation, environmental consultancy or environmental biotechnology. It provides an opportunity for students to explore the theory and practice related to the subject of environmental science, and to develop advanced subject specific skills and important high level transferable graduate and post graduate skills, particularly analytical and communication skills. It aims to develop, in students, an in-depth understanding of the natural world and the potential consequences to the natural environment of a wide range of human activities. Students will also develop a broad understanding of the social, political and economic context within which environmental decisions are made. The final masters-level year provides students with the opportunity to develop advanced research skills by undertaking an extensive original research project, and to critically engage with knowledge and understanding that is at the forefront of their academic discipline.

The design of the programme enables the student to:

- Understand the systematic principles that govern biological, physical and human systems in an environmental context.
- Explore to an advanced level the impact of human activities on these systems, and appreciate the relationship between lifestyle choices (including their own) and the sustainable use of environmental resources at a local, regional and global scale.
- Develop subject-specific research and practical, analytical and communication skills which will equip them for future research and working in the environmental sector.
- Critically evaluate a range of innovative technological enhancements and sustainable adaptations required to meet global environmental challenges linked with increases in population, resource demands and intensification, not only from a scientific perspective, but also taking into account legislative and socio-economic factors and the role of education.

The specific aims of the programme are to:

- Provide the educational and resource environment which will enable students with a background in science to develop:
  - A strong scientific understanding of the principles and processes that underpin contemporary environmental issues.
  - An understanding of environmental issues from a multi-disciplinary and interdisciplinary perspective.
  - The field, laboratory and investigative skills necessary to undertake independent investigations and analyses of environmental problems at an advanced level, and the presentational skills necessary to communicate their findings to audiences with a variety of backgrounds.
  - The skills of a literate and numerate technologically agile student capable of independent learning.
- Create a friendly and supportive atmosphere that will enable individual students to use the learning experience at UWE to create a graduate foundation, on which they can develop their future careers and on-going social and educational development.
- Provide a curriculum that is enhanced by incorporating the latest research and



### Part 3: Learning Outcomes of the Programme

influence of human activities.																
3. Relevant terminology, nomenclature and classification systems	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
4. Methods of acquiring, interpreting and analysing information and data	X	X		X	X	X	X	X	X	X			X	X	X	
5. Sustainable use of resources.	X	X	X				X	X				X	X	X	X	
6. The contribution of the environmental sciences to debates on environmental issues	X	X	X				X	X			X	X	X	X	X	
7. The contribution of their subject to the knowledge of the world we live in.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8. The applicability of the environmental sciences to the world of work.			X	X	X								X	X		
<b>(B) Intellectual Skills</b>																
1. Using theories and paradigms	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
2. Analyse, synthesise, summarise information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3. Collect evidence, test/develop hypotheses				X	X	X	X			X	X	X			X	X
4. Apply knowledge to problems	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X
5. Independent learning, self manager				X	X				X	X	X	X	X	X	X	X
6. Appreciate moral, ethical issues around investigation	X	X	X	X	X	X	X	X			X	X	X	X	X	X
<b>(C) Subject/ Professional/Practical Skills</b>																
1. Plan, conduct report on investigation				X	X	X	X	X	X	X	X	X			X	X
2. Collect, record, analyse data	X	X		X	X	X	X	X	X	X	X	X	X			X
3. Deal with complex issues systematically and creatively,														X	X	X
4. Undertake lab, field investigations	X	X		X	X	X	X	X		X	X		X	X		X
5. Use of technology for mapping, analyzing data					X							X			X	
6. Undertake research project					X							X				X
7. Reference work appropriately	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<b>(D) Transferable skills and other</b>																

### Part 3: Learning Outcomes of the Programme

attributes																
1. Make sound decisions in complex and unpredictable situations														X	X	X
2. Use a variety of sources of information	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
3. Communicate appropriately using contemporary technologies				X	X						X			X	X	X
4. Appreciate issues of sample selection, accuracy, calibration, precision, replicability and uncertainty	X	X		X	X	X	X			X	X			X		X
5. Prepare, process, interpret data	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
6. Solve numerical problems	X	X		X	X	X	X			X	X	X				X
7. Use the internet and other electronic sources critically	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
8. Respect views of others	X	X	X	X	X	X	X	X	X	X	X			X	X	X
9. Evaluate individual performance		X		X	X						X			X		X
10. Develop skills for life-long learning	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
11. Personal, academic and career development.				X	X						X			X	X	X
12. Develop an adaptable, flexible and effective approach to study and work.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

### Part 4: Student Learning and Student Support

The MSci Environmental Science programme is an interdisciplinary degree which combines a sound scientific understanding of environmental systems with the analysis of those socio-economic and political factors which determine the context within which environmental decisions are made. Hence its teaching is supported by tutors from not only a wide range of disciplines within the Faculty of Health & Applied Sciences, but also by staff from other Faculties, including the Faculty of Environment and Technology. The sustainable use of natural resources is a theme which is integrated across the programme, as is the importance of interdisciplinarity, which is also developed explicitly through dedicated modules.

All students follow a core first year which is designed to provide a broad underpinning to the environmental sciences. Core modules in the second year focus on the application of environmental theory to problems in the real world, and help develop students' independent learning skills, particularly those relating to the planning, implementation, analysis and communication of environmental research. In the third year, all students undertake an independent project, working alongside researchers at the leading edge of the environmental sciences, or developing their own ideas with the guidance of expert tutors. They also study compulsory modules that focus on the key environmental issues of the day, as well as exploring

#### **Part 4: Student Learning and Student Support**

the relationships between science and enterprise. Optional modules at level three allow students to focus their degree studies around a number of themes, including: the quantification and diversity of the living environment; the analysis of the physical environment and sustainable exploitation of earth resources; the management of human: environment interactions in business and industry. Alternatively, students may choose to pick a broad range of modules to match their interests and career aspirations

The final, research-focused advanced year offers an extended research project in an area of the student's choice, working within a UWE-based research team, with a nationally or internationally-recognised conservation organisation, in industry, or with a government or non-governmental organisation. Research projects will be tailored to a student's interests and needs. This research project is supported by masters-level research skill training, including advanced practical skills for environmental science (eg. Climate modelling, coding and remote sensing), as well as project management, science communication and outreach skills.

#### **Transition to HE and student support**

MSci Environmental Science is managed as part of a suite of programmes within the Biological and Environmental Sciences & Science Communication Subject Group. Year handbooks are provided at each level providing information on the Faculty, the University, its regulations and procedures. Detailed information is distributed in guides for each module. At the start of the programme, students undertake a comprehensive induction programme and are introduced to university regulation, aims of the programme, laboratory working, support systems (e.g. Drop-ins, PAL) and their personal tutor. Students are allocated a personal tutor and become part of a tutor group (typically < 15 tutees). Adjusting to university life is challenging for First year students and to help with this transition students attend a short residential field course early in Semester one. Students are supported during their time at UWE by a personal tutor, student advisors and module leaders. Guidance on year issues is overseen by the Programme Manager, who is supported by the Teaching Team and Associate Heads of Department. Issues relating to groups of students are dealt with through the Student Rep / Staff Forum (SRSF) that includes student representatives, who also meet with the Programme Manager on a regular basis. Students who elect to undertake a placement year, are allocated a placement tutor who will maintain contact, plan a visit where possible and provide support and liaise with work supervisors. For all students, access to academic staff and the student advisors is via e-mail or by personal access, with most staff offering an office-hours policy facilitating the booking of appointments. The central University counselling and support services provide assistance and guidance for students with special needs. The programme welcomes mature students and students with disabilities. When possible, and following individual consultation, adjustments are made to practical and field work to allow all student to achieve the learning outcomes of the programme.

#### **Teaching and Learning facilities**

The university library provides an extensive range of literature that supports the programme. Additional material is held in the Field Studies Resource Room and in the library at Bristol Zoo. Students have 24-hour access to computers, and IT support services are available within the University's Computing Helpdesk. The University's Virtual Learning Environment, hosted by Blackboard has been developed to enhance the student's learning experience and provide comprehensive support on a module-by-module basis. Support includes, access to teaching materials, links to relevant online resources and background reading, facilities for interaction and coordination during group work (e.g. blogs, wiki's) and communication between tutors and students. The Faculty has a well-equipped range of general and specialist laboratories, a dedicated field laboratory, large glasshouse used for teaching and project work, dedicated project laboratory a wide range of specialist scientific equipment that is available for use by the students at appropriate stages in their study programme.

#### **Part 4: Student Learning and Student Support**

The university's campus at Frenchay covers over 60 hectares, and provides a wide range of habitats that can be utilized by students for formal and informal learning, including ponds, grassland, woodland, and the built environment which includes some buildings that incorporate cutting-edge sustainable building design and micro-generation technologies. In addition, the geographical location of Bristol gives access to a wide variety of natural and man-made environments and provides students with opportunities for fieldwork that enhance their learning experience. Local sites that are frequently utilized in teaching and research include the Severn Estuary, the Somerset Levels, Wick Quarry, Gordano Valley, Bristol City Centre and Harbour, Newport Wetlands and a range of local rivers.

In addition to programme-specific facilities, the university offers a wide range of opportunities for learning and participation outside of the formal curriculum. These include: research talks by visiting experts and UWE research staff, and access to research seminars hosted by other organisations in Bristol, for example Bristol Zoo; a wide range of student societies, some which are particularly targeted at environmental issues; a wide range of volunteering opportunities including working with local environmental organisations and supporting pupils in local schools; and opportunities to get involved with entrepreneurial projects, publish their own work, or take part in environmental, conservation, or development projects at home and abroad. Such extra-curricular activities can now be formally recognised through the UWE Bristol Futures Award.

#### **Preparation for the world of work**

An aim of this programme is to produce graduates that are ready for the world of work.

Environmental Science graduates have a long track record in gaining employment across a number of different professions including environment-based industries. This is due to the wide range of skills they develop in the study of the subject through hands-on learning activities such as fieldwork, laboratory work and team-based projects. Working in the natural environment provides opportunities and constraints on project work that are different, unexpected and more challenging than those found in classroom-based activities. The skills and qualities developed through studying Environmental Science are highly transferable into a variety of roles and different working environments, including the ability to think through issues, analyse situations and problems and come up with creative solutions, and to work with others in sometimes difficult and tight timeframes, and unfamiliar environments.

Students are introduced to the world of work through their taught modules, especially the 'Skills' modules at levels One and Two, and especially through their group and one-to-one tutor sessions at all three levels. These sessions focus on the identification of career aspirations, analysis of skills gaps and acquisition planning, C.V. preparation and the job application process. Students are encouraged to take the Placement Year to build up their work experience skills and this occurs between year 2 and year 3. Scientific and generic careers events are organised throughout the year for student at all levels and careers advice is available from academic staff and the university's Careers Service. Enterprise, social enterprise and consultancy are all key topics delivered in the optional Final Year module 'Scientific Frontiers and Enterprise'.

Field work is of fundamental importance to the development of employability skills and understanding in wildlife conservation, and occurs across a range of modules at all levels, including half-day, whole day, and residential visits. In particular, residential field trips take place in Year 1 (compulsory), Year 2 (compulsory) and Year 3 (optional modules). The costs associated with compulsory field trips are generally met by the Faculty; however, optional trips may incur an additional cost. All third Year students undertake an independent research project. This is supported by compulsory modules at Levels 1 and 2 during which students develop the skills to project plan, self-manage, collect data, analyse and interpret data and write scientific reports. In addition, in their final (Master-level) year, students undertake an extended research

#### Part 4: Student Learning and Student Support

project, developing the advanced research skills required to take on PhD or other research-based post-graduate opportunities.

In addition to the practical work experience opportunities throughout this programme, technology is used to enhance teaching, learning and employability. Environmental scientists are often required to communicate and disseminate their findings through a variety of modern media, to a range of audiences. A number of the technologies incorporated within this programme link directly to feedback from employers on relevant graduate skills (e.g. GIS, data bases, webpages, blogs, new media).

#### **Teaching and Learning, Technology Enhanced Learning (TEL)**

In order to support students during their transition to HE and to help students become independent learners, taught sessions in Year 1 are a mixture of interactive lectures, tutorials, workshops, laboratory, field and computer practical's. During this year students are taught the skills necessary to engage with appropriate technologies to allow a gradual move towards facilitated learning in Years 2, 3 and 4. The taught sessions at UWE utilise TEL to support pedagogy of Inductive Learning where the students engage in facilitated activities such as debates, problem based learning, group working, research etc. Integral to this programme is the use of subject based as well as generic use of technologies. For instance, data analysis and modelling, mapping (GIS), wildlife film-making, communication for conservation, are subject areas reliant on a range of contemporary technologies. In addition modern technologies are incorporated as vehicles of learning (e.g. blogs, web pages, data bases) and as vehicles for learning through assessment (e.g. online portfolio's, online tests, wiki's, press releases etc.)

At UWE, Bristol there is a policy for a minimum average requirement of 12 hours/week contact time over the course of the full undergraduate programme. This contact time encompasses a range of face to face activities as described below. In addition a range of other learning activities will be embedded within the programme which, together with the contact time, will enable learning outcomes to be achieved and demonstrated.

On the Environmental Science programme, teaching is a mix of scheduled learning, independent learning and placement learning.

**Scheduled learning** includes interactive lectures, lectorials, tutorials, seminars, project supervision, demonstration, laboratory, computer and field practical classes and workshops; fieldwork; external visits; film-making and work based learning. Scheduled sessions may vary slightly depending on the module choices made.

**Independent learning** includes hours engaged with essential reading, case study preparation, scientific research activity, attending professional seminars, assignment preparation and completion, revision etc.

**Placement learning:** Students have the option to undertake a professional practice placement year.

#### **Description of any Distinctive Features**

The Environmental Science programme has been developed in consultation with a range of stakeholders and has the following key features:

- An interdisciplinary and multi-disciplinary approach to the study of environmental science



#### Part 4: Student Learning and Student Support

- Field work and field experience at local, national and international locations.
- The opportunity to spend a year working with leading environmental organisations, at home and abroad
- Delivery by experts in their field, drawn from across the university
- High emphasis on the development of practical skills, with excellent laboratory facilities and fieldwork equipment to support student learning
- A range of Year 3 options which, along with the research projects in both Years 3 and 4, allow students to tailor their degree to their specific areas of interest
- Built-in enterprise skills and an understanding of the world of work.
- Familiarisation with both local and global partners/employers
- Attractive bespoke modules on Earth System Science, Scientific Frontiers and Enterprise
- Built in key skills such as GIS, IT, Modelling, identification, communication, contemporary environmental science and technology and optional skills in SCUBA and remote sensing.
- Opportunities to develop advanced research skills including cutting-edge techniques for handling and modelling data, environmental science research and technological innovation, and advanced analytical techniques.

#### Part 5: Assessment

Approved to [University Regulations and Procedures](#)

##### **Assessment Strategy**

A range of assessment methods are employed to monitor student attainment of the full range of Learning Outcomes. Assessment incorporates the Department's assessment strategy and The QAA Code of Practice on Assessment of Students. The principles, procedures and processes of assessment for each module are described in the module booklet, which is provided to each student and available online at the start of the module. Further, these assessments are summarised in the Assessment Calendar provided via the UWE Portal, which also facilitates the appropriate scheduling of assessment loading. The third Year optional modules (15 credits) have semester based delivery. This allows assessments to be spread across both semesters for even loading. In the final, masters-level year, all three modules are taught concurrently.

Effective learning is achieved by employing a range of assessment approaches across the suite of modules that recognise differential approaches to learning. These include opportunities for placements, field work, and "real-world" assignments. The development of a flexible, inclusive and accessible curriculum ensures a high quality learning experience for all students. The programme incorporates a range of innovative and novel assessments, many utilizing new technologies.

Technology Enhanced Learning (TEL) is integral to the subject matter within this programme



## Part 5: Assessment

	Microbial World	(50)						(50)		
Compulsory Modules Level 3	<b>USSK5K-30-3</b> Research Project				A (20)		A (20)	A (60)		
	<b>USSKBC-30-3</b> Dissertation Project				A (20)		A (10)	A (70)		
	<b>USSKBE-30-3</b> Resource Security & Sustainability	A (60)					B 2x (20)			
	<b>USSKCC-15-3</b> Energy Technologies	A (60)					B (40)			
Optional Modules Level 3	<b>USSKN6-15-3</b> Global Forest Systems	A (60)					B (40)			
	<b>USSK55-15-3</b> Marine Ecosystems	A (60)					B (40)			
	<b>USSK58-15-3</b> Remote Sensing & GIS				A (60)		B (40)			
	<b>USSK59-15-3</b> Tropical Expedition			A P/F			B (30)	B (70)		
	<b>USSKCF-15-3</b> Scientific Frontiers & Enterprise					A (40)			B (60)	
	<b>USSKCD-15-3</b> Environmental Forensics	A (60)					B (40)			
	<b>USSK57-15-3</b> Professional Practice in Applied Sciences <i>(study &amp; assessments for this module are carried out whilst on placement)</i>				A P/F	A P/F	B P/F		B P/F	
	<b>USSKCE-15-3</b> Science Communication				A (60)		B (40)			
	<b>USSKNB-15-3</b> Sustainable Food Production	A (60)						B (40)		
	<b>USSKN9-15-3</b> Environmental Microbiology	A (60)							B (40)	
	Compulsory Modules Level 4	<b>USSKM6-60-M</b> Research in Practice					A (30)		A (20, 50)	
		<b>USSKM5-30-M</b> Research with Impact					A (40)	B (24)		B (36)
<b>USSKM8-30-M</b> Sustainable Futures							B (25)	A (50)	B (25)	

\*Assessment should be shown in terms of either **Written Exams**, **Practical exams**, or **Coursework** as indicated by the colour coding above.

## Part 6: Programme Structure

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

ENTRY				
Year 1	Compulsory Modules	Optional Modules	Interim Awards	
	<b>USSK5C-30-1</b> Life on Earth	None	Certificate of Higher Education: Environmental Science  Other requirements: 120 credits of which not less than 100 are at Level 1 or above.	
	<b>USSJFB-30-1</b> The Earth			
	<b>USSKAB-30-1</b> Environment and Society			
	<b>USSK5B-30-1</b> Field Skills			
	Year 2	Compulsory Modules	Optional Modules	Interim Awards
		<b>USSK5F-30-2</b> Ecology and Ecosystem Protection	<b>USSKN5-15-2</b> Earth Science	Diploma of Higher Education: Environmental Science  Other requirements: 240 credits at which not less than 100 are at Level 2 or above and 120 are at Level 1 or above.
		<b>USSK5G-30-2</b> Environmental and Field Techniques	<b>USSKN8-15-2</b> Environmental Impacts and Mitigation	
		<b>USSKN4-15-2</b> Atmosphere and Climate		
		<b>USSKNA-15-2</b> Hydrology to Oceanography		
	<b>USSKN7-15-2</b> The Microbial World			
<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p><b>Year Out:</b> 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.</p> </div>				

	Compulsory Modules	Optional Modules	Interim Awards
Year 3	<b>USSK5K-30-3</b> Research Project  <b>OR</b>	<b>USSKCF-15-3</b> Scientific Frontiers and Enterprise	BSc Environmental Science  300 credits of which at least 60 must be at level 3, a further 100 at Level 2 or above and a further 140 at Level 1 or above  BSc (Hons) Environmental Science  360 credits of which not less than 100 are Level 3 or above, and 100 are at Level 2 or above, and 140 are Level 1 or above
	<b>USSKBC-30-3</b> Dissertation Project	<b>USSKCC-15-3</b> Energy Technologies	
	<b>USSKBE-30-3</b> Resource Security and Sustainability	<b>USSK55-15-3</b> Marine Ecosystems	
		<b>USSK59-15-3</b> Tropical Expedition	
		<b>USSKCD-15-3</b> Environmental Forensics	
		<b>USSKN6-15-3</b> Global Forest Systems	
		<b>USSK58-15-3</b> Remote Sensing and GIS	
		<b>USSKCE-15-3</b> Science Communication	
		<b>USSK57-15-3</b> Professional Practice in Applied Sciences	
		<b>USSKNB-15-3</b> Sustainable Food Production	

		<b>USSKN9-15-3</b> Environmental Microbiology	
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	Compulsory Modules	Optional Modules	Interim Awards
Year 4	<b>USSKM5-30-M</b> Research with Impact	None	<b>Highest Award</b>  MSci Environmental Science  480 credits of which not less than 100 are Level 4, and not less than 100 are Level 3 or above, and 100 are at Level 2 or above, and 140 are Level 1 or above
	<b>USSKM8-30-M</b> Sustainable Futures		
	<b>USSKM6-60-M</b> Research in Practice		

## GRADUATION

<b>Part 7: Entry Requirements</b>
<p>The University's Standard Entry Requirements apply. The UCAS points tariff will be reviewed on a regular basis and published for new applicants. However, an applicant to this programme will typically have a minimum of A-level Grade C (or equivalent) in a science subject (Biology, Chemistry, Geology or Physics are preferred) and have GCSE's in English Language, Maths and Double Science at grade C or above.</p> <p>Non-standard applicants without appropriate A-levels, or an equivalent qualification, will be considered on a case-by-case basis.</p>

<b>Part 8: Reference Points and Benchmarks</b>
<p><u>The Framework for Higher Education Qualifications</u></p> <p>The learning outcomes have been developed with reference to the qualification descriptors used in the QAA Framework for Higher Education Qualifications. In particular, the learning outcomes for the modules in the final (Masters) year are considered consistent with the QAA's descriptor for a higher education qualification at level 7: Master's degree. Graduates of the programme achieving an MSci classification will have developed a systematic understanding and critical awareness of current problems and new insights in key aspects of a complex body of knowledge related to the environmental sciences, much of which is at, or informed by, the forefront of the academic discipline. In addition, graduates will have developed a comprehensive understanding of how established techniques of research and enquiry are used to create and interpret knowledge in their discipline.</p> <p>The environmental programme is underpinned by the Faculty's and the University's 2020 strategy. The programme is based around a research-led, student-centred approach to the acquisition and creation of knowledge, with students taking responsibility for their learning, whilst tutors take responsibility for facilitating that learning.</p>

## Part 8: Reference Points and Benchmarks

### Subject Benchmark Statements

This programme maps to the benchmark statements for Earth Sciences, Environmental Sciences and Environmental Studies. The benchmarking statement identifies four key features which should characterise degree programmes in the Environmental/Earth Sciences:

'a holistic, multi-disciplinary and inter-disciplinary approach'. This is evident in this programme from the breadth of the subject matter, the range of subject specialisms of the tutors involved (in both the analytical and social sciences) and the existence of integrating, 'issues' or case-study based modules and student work.

'the integration of fieldwork, experimental and theoretical investigations'. In Years 1 and 2 of this programme, students spend typically around 50% of their time involved in practical work of all types (field or laboratory based work, library or internet investigations) and all year 3 projects involved a high degree of investigation, be they practical or more theoretical (desk-based) in nature.

'quantitative and qualitative approaches to acquiring and interpreting' data. These approaches are integrated both in the practical work of the student as highlighted above, and through the lecture and assessment components of the programme, which encourage the students to develop skills in the objective analysis of all type of information and data, in order to recognise, understand and challenge current theories and paradigms. Examples include: the analysis of legal case material; the conducting of public opinion surveys; conducting literature searches and summarising bodies of evidence and opinion.

'the exploration for, and exploitation of, physical and biological resources in the context of sustainability'. The diversity and extent of physical and biological resources are introduced in year 1 through the compulsory modules, which also begin the exploration of issues relating to unwise or overexploitation of these resources. These themes are further explored in year 2 in all modules, which consider the social, economic, legal and political aspects of resource exploitation, as well as its physical consequences (loss of biodiversity, land degradation, pollution). In year 3 more emphasis is placed on precisely defining the impacts of over-exploitation and on investigating appropriate techniques for remediation.

The benchmarking statement also specifies the subject knowledge it expects to be covered to some degree of depth in an Environmental Science degree programme:

'The Earth as a system' which is dealt with explicitly in compulsory modules in year 1 and 2 but more implicitly throughout the suite of modules taken.

'Human systems and their interactions with global systems' which are explored in detail via the interdisciplinary and 'issues' based modules and a knowledge of which is underpinned by the compulsory modules in years 1 and 2. Human impacts on environmental systems forms an important theme in most year 3 modules, as well as underpinning most of the research topics investigated as part of the year 3 Research Project.

'Inter-disciplinary/multi-disciplinary context' which is implicit in the structure of the programme, as well as being dealt with explicitly in a range of modules at all four levels.

'Activities, patterns, processes, impacts and responses' including environmental impact assessment, management and sustainable development. These themes are integrated

## Part 8: Reference Points and Benchmarks

throughout the programme, with knowledge and understanding of activities, patterns and processes typically being obtained in year 1, whilst impacts and responses are investigated in greater breadth and depth in years 2, 3 and 4.

'Temporal and spatial scales' which are dealt with in all modules. It is a specific aim of the programme for students to gain an understanding of the interactions between local issues and actions, and regional and global consequences

### SEEC credit level descriptors (2016)

SEEC credit level descriptors have been used to establish the level of the programme and its modules, and to inform the learning outcomes and assessment criteria at level 4 (Cert. HE), level 5 (Dip. HE), level 6 (BSc), and level 7 (MSci)..

These credit levels descriptors inform the following areas:

- The development of subject specific knowledge and understanding, generic cognitive and intellectual skills, key/transferrable skills, and subject specific practical skills;
- Teaching, learning and assessment strategies that deliver, ensure and assess the attainment of these levels;
- The programme level learning outcomes that are reinforced by the modular learning outcomes, teaching, learning and assessment strategies described in individual module specifications.

### **Consideration of feedback from stakeholders: schools & colleges, current students, graduates and employers.**

To ensure the programme is fit for purpose and to gain an in-depth knowledge of the needs of employers, key personnel from a range of environmental organisations (local, national and international) have been consulted. These discussions highlighted the key skills required to produce an employable graduate ready to work in this field. Common themes emerging from these consultations were the need for proficiency in Geographical Information Systems (GIS), data analysis, scientific writing, use of data bases, field-based skills and communication skills.

In addition, the current BSc Environmental Science programme has been subject to regular (annual) and periodic (every six years) reviews which have considered the content, learning outcomes, and assessment strategy of the Environmental Science programme, to ensure that it remains current and fit for purpose. These reviews have been informed by external advice from industry (periodic reviews), as well as feedback from our placement providers and alumni.

In addition, a recent UWE survey of over 80 employers in the South-West identified transferable skills as top of their list of requirements from any graduate job applicant. These skills included all forms of communication (report writing, oral communication, Powerpoint presentation, data handling, summarising information, lay and scientific, and appropriate communication with peers and seniors) plus all elements of project management (such as planning, working to deadlines, managing multiple tasks, prioritising, working under pressure).

Furthermore, existing students on the BSc (Hons) Environmental Science programme were consulted about the MSci programme. Whilst not all wishing to continue to a Masters level, the students appreciated the flexibility and degree of choice that the MSci structure offers, and recognized that it provides a useful underpinning for those wishing to go into further research on graduating.



## Part 8: Reference Points and Benchmarks

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of individual modules can be found in module specifications, available on the [University's website](#).

### FOR OFFICE USE ONLY

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