

Programme Specification

BSc Water and Environmental Management

1	Awarding institution/body	University of Worcester
2	Teaching institution University	University of Worcester
3	Programme accredited by	Not applicable
4	Final award	BSc Hons
5	Programme title	Water and Environmental Management
6	Pathways available	Single Honours only
7	Mode and /or site of delivery	Standard taught programme at University of Worcester, St. John's Campus.
8	Mode of Attendance	Full time or part time: Semester 1 start only
9	UCAS Code	DFK8
10	Subject Benchmark statement	None
11	Date of PS preparation/revision	October 2006, Updated 2008, Revised Sept 2010

12 Educational aims of the programme

The aims of the Water and Environmental Management course complement those of the Undergraduate Regulatory Framework as a whole. Students are offered the opportunity to follow an intellectually challenging programme of study that requires sustained independent work at Honours degree level, and prepares them for entry into a wide range of potential occupations.

In particular, the course aims to:

- i. provide a contemporary curriculum and a supportive learning environment which acknowledges and responds to the diversity of student backgrounds and experiences;
- ii. provide students with the opportunity to study water and environmental management at a depth and level appropriate to honours degree standard;
- iii. develop the knowledge, skills and aptitudes of physical geography and environmental management;

- iv. encourage students to develop a range of subject-specific and transferable skills appropriate to graduate employment and/or postgraduate study;
- v. promote the University's Learning and Teaching Strategy by providing students with the opportunity to become individual, autonomous and reflective learners, and achieve the outcomes set out in the Student Qualities Profile and the Effective Learning Programme.

13 Intended learning outcomes and teaching, learning and assessment methods.

All learning outcomes apply to the Single Hons pathway available. The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes. At the end of their course, students who have successfully completed their studies should demonstrate:

Knowledge and understanding of:

- a) Natural and human-induced environmental processes and interrelationships between the various systems with a particular emphasis on river systems.
- b) Spatial variations in the distributions of a variety of physical and human phenomena, and the explanations that underlie these.
- c) Subject-specific terminology, nomenclature and classification.
- d) Methods of acquiring, interpreting and analyzing information with a critical understanding of the applications to environmental management and the water environment in particular.
- e) Issues concerning the availability and sustainability of resources.
- f) A range of approaches and methods appropriate for effective water and environmental management.
- g) The diverse manners of representation of the human and physical worlds, including maps, texts, images, GIS and remote sensing.
- h) The relevance of the knowledge and skills acquired on their course to professional activity, responsible citizenship and the world of work.
- i) All modules deliver a range of subject specific material incorporating concepts and issues in those areas of Water and Environmental Management appropriate to the award programme.

Knowledge and understanding: examples of learning, teaching and assessment methods employed.

The content of mandatory modules ensures that students are well versed in the essential knowledge and applications of the subject. Modules GEOG1011, GEOG1002, ENVS1010,

ENVS1100, GEOG1012 and GEOG1003 provide the introductory subject knowledge and context at Level 4 and these are complemented by the optional modules available. Development and applications of the subject is continued at Level 5 with the mandatory modules GEOG2003, GEOG2013, ENVS2104, GEOG2010, GEOG2004, GEOG2005, ENVS2001, GEOG2017. GEOG2004 prepares students for their Independent study at Level 6, and GEOG2010 prepares them for the specialist Mountain Environments Field Course (GEOG3004) at Level 6. At Level 6 advanced material and applications are studied in GEOG3013 and ENVS3004 with a synoptic optional module, ENVS3105, which allows integration of subject material, reflection and aspects of preparation for employment also available. The Independent study modules GEOG3001/2 is a major enterprise which allows the student to plan, design and carry out a project which will employ the knowledge and skills acquired on the course.

Students are able to select optional modules to study aspects of water and environmental management and skills of particular interest to them at Level 4 and Level 6.

Learning and teaching methods are varied providing progression through the levels of study to ensure appropriate and effective delivery of material in a style which is readily accessible to the students. Learning and teaching methods include lectures, seminars, tutorials, laboratory practicals, IT practicals, fieldwork exercises and online activities. Assessments are varied, with a strong coursework element. Examples of assessment include essays, fieldwork reports, laboratory practical write-ups; poster presentations. Details of assessments are given in the module specifications and a table in the Students' Handbook. Students are encouraged to be interactive in sessions through various questioning methods, class exercises and quizzes.

At the end of their course, students who have successfully completed their studies should demonstrate:

Cognitive and intellectual skills:

- a) Recognize and use subject-specific theories, paradigms, concepts and principles.
- b) Search for, analyze, synthesize and summarize information critically, including past research.
- c) Collect and integrate several lines of evidence to formulate and test hypotheses.
- d) Apply knowledge and understanding to complex and multidimensional problems in familiar and unfamiliar contexts.
- e) Recognize moral and ethical issues of investigations and appreciate the need for professional codes of conduct.
- f) Contribute to debates on environmental issues particularly with respect to water and river management issues.
- g) Use scientific information to inform decision making processes in water and environmental management.
- h) Critically examine concepts and applications of sustainability and sustainable development.

Cognitive and intellectual skills: examples of learning, teaching and assessment methods employed:

All modules involve the development of cognitive and intellectual skills. A table indicating which skills are specifically addressed in each module can be found in the Students' Handbook.

Intellectual skills are, of course, practised and developed throughout the programme. All modules encourage learners to engage in discussion of key issues and application of key concepts. This is achieved through fieldwork, seminars, presentations, tutorials, laboratory work, project work, and online activities. In particular, the development of fieldwork and research skills in mandatory modules (ENVS1010 Introduction to Environmental Science; GEOG1002 Mapping the Environment; GEOG1003 Field Investigations; GEOG2003 Residential Field Course; GEOG2004 Research Methods; GEOG3004 Mountain Environments Residential Field Course) is a key approach within the programme to developing intellectual skills. Examples of assessment types include: Laboratory Practical Folder, Fieldwork Folder, essay, exam, seminar presentation, small research projects, Independent Study.

At the end of their course, students who have successfully completed their studies should demonstrate:

Practical skills relevant to employment:

- a) Plan, conduct and report on investigations, including the use of secondary data.
- b) Collect record and analyze data using appropriate techniques in the field and the laboratory.
- c) Undertake field and laboratory investigations in a safe and responsible manner, completing and responding to risk assessment, rights of access, relevant health and safety regulations and sensitivity to the impact of investigations on the environment and stakeholders.
- d) Design and/or evaluate management plans for sustainable management of landscapes.

Practical skills relevant to employment: examples of learning, teaching and assessment methods employed:

Many modules involve the development of practical skills. A table indicating which skills are specifically addressed in each module can be found in the Students' Handbook.

Most modules incorporate an element of field and/or laboratory work. This is one of the key features of the course. Skills are taught and practised so that students become competent and confident in the selection and use of the skills thus promoting their employability. Assessment is principally through the production of field and laboratory reports and files, field note books and sketches, production of environmental assessment and management plans. The Independent Study is a major piece of work in which the students use the many subject specific and personal skills that they have developed and report on results according to scientific practice.

At the end of their course, students who have successfully completed their studies should demonstrate:

Transferable/key skills:

- a) Receive and respond to a variety of information sources (e.g. textual, numerical, verbal, graphical).

- b) Communicate appropriately to a variety of audiences in written, verbal and graphical forms.
- c) Appreciate issues of sample selection, accuracy, precision and uncertainty during collection, recording and analysis of data in the field and laboratory.
- d) Prepare process, interpret and present data using appropriate quantitative and qualitative techniques and packages.
- e) Solve numerical problems using computer-based and non-computer-based techniques.
- f) Use the internet critically as a means of communication and a source of information.
- g) Identify individual and collective goals and responsibilities and perform accordingly.
- h) Recognize and respect diverse views and opinions.
- i) Evaluate own and team performance.
- j) Develop skills for self-management, identification and attainment of targets and a flexible approach to study and work.

Transferable/key skills: examples of learning, teaching and assessment methods employed:

All modules involve the development of transferable/key skills. A table indicating which skills are specifically addressed in each module can be found in the Students' Handbook. These skills are introduced at Level 4 and are developed and reinforced throughout the course.

The transferable/key skills are explicitly addressed at Level 4 in the dedicated skills modules (GEOG1002 Mapping the Environment; GEOG1003 Field Investigations), which are assessed through the submission of practical folders and a fieldwork research report. The Geography Tutorial Programme, although not formally assessed, focuses on information literacy and personal development planning. The mandatory module at Level 4 ENVS1010 (30 credit module) incorporates a large element of skills teaching and practice, and formative assessment is ongoing by the use of frequent short in-class tests.

At a more advanced level, students acquire a range of skills from various specialist modules including use of VLE Blackboard, GIS, mapping, laboratory skills, research design and management skills, field mapping and survey skills etc. Additionally, numerical, data processing and statistical skills are taught and practised (for example in GEOG2013, GEOG2004, GEOG2017 and GEOG3001/2). Students are strongly encouraged to undertake voluntary work with local environmental organizations and become student members of recognized Institutions, for example, the Institute of Ecology and Environmental Management (IEEM). Additionally students are able to take a work placement module in which existing and new skills are practised and their work assessed at the end of the placement period. Incorporation of group and team work into practical, project and field sessions promotes a range of interpersonal skills and those of self-management.

All students are required to communicate effectively through a variety of media. Assessments include the use of oral presentations, use of PowerPoint and posters, written work in a range of formats. Full details are given in the individual module specifications.

Assessment points occur throughout the semester after an introductory period for each module. All modules include both formative and summative assessments. Formative assessments may take a number of different formats and be conducted informally in practical and field situations or more formally in classrooms or via VLE. Modules throughout the course use a range of summative assessment methods to ensure that students have an opportunity to excel and none are disadvantaged through over-reliance on one type. Most modules have two summative assessment items. Students are notified at the start of the semester about the contents of their assessments to allow them to organise their study effectively. Details of assessment briefs are included in the module handbooks distributed at the beginning of the semester and are also available on Blackboard. Additional supporting resources are also made available on Blackboard in many instances.

Assessment types include formal examinations, essays, practical files, field notebooks, writing and evaluation of management plans, short tests and species identification exercises. Additional opportunities are provided within the modules for formative assessment and may take the form of multiple choice questions, quizzes, discussion and question-and-answer sessions.

Throughout all modules, assessments are made in line with assessment criteria (given as subject-specific criteria and descriptors) and in accordance with the University's Assessment Policy and make full use of the UW grade descriptors when awarding grades. A table demonstrating how assessment methods at each level are mapped to modules is included in the student handbook for this course.

15 Programme structures and requirements.

The degree programme has three levels corresponding to the three years of the full-time course, although a few modules can be studied at either Level 5 or Level 6 (with different codes, assessments and learning outcomes; these are indicated in the following tables by 'L5/L6'). Each module is worth 15 credits with the exception of the first year Introduction to Environmental Science module and third year Independent Study which are worth 30 credits. This course, which can be studied in full or part-time modes, is only available as a single honours route, with two prescribed subjects required at Level 4.

Level 4 Modules				
Module Code	Module Title	Credits	Status: Single Honours Only	Prerequisites
GEOG1011	Earth Systems and Processes	15	Mandatory	None
GEOG1002	Mapping the Environment	15	Mandatory	None
ENVS1100	Introduction to Ecology	15	Mandatory	None
ENVS1010	Introduction to Environmental Science	30	Mandatory	None
GEOG1012	Landforms and Landscapes	15	Mandatory	None

GEOG1003	Field Investigations	15	Mandatory	None
ENVS1101	Environmental Issues	15	Optional	None
GEOG1014	An Introduction to the Science and Politics of Climate Change	15	Optional	None

Students (all single honours) must take the 6 mandatory modules and may select one optional module from the list above or alternatively students can take a 'free choice' modules from within the URF in place of the above options; these do not have to be drawn from Physical Geography or Environmental Management.

Level 5 Modules				
Module Code	Module Title	Credits	Status: Single Honours Only	Prerequisites
GEOG2003	Residential Field Course (Highlands)	15	Mandatory	GEOG1002
GEOG2013	River Processes	15	Mandatory	None
ENVS2104	Ecology of Fresh Waters	15	Mandatory	ENVS1100
GEOG2010	Mountain Geomorphology	15	Mandatory	GEOG1002, GEOG1012
GEOG2004	Research Methods	15	Mandatory	None
GEOG2005	Geographical Information Systems	15	Mandatory	None
ENVS2001	Analysis of Environmental Samples	15	Mandatory	ENVS1010 or ENVS1100 or GEOG1011
GEOG2017	Hydrological Monitoring *	15	Mandatory /Optional	None
GEOG2015	Meteorology and Climate	15	Optional	None
ENVS2103	Field Techniques in Ecology	15	Optional	ENVS1100

Students (all single honours) must take the 7 mandatory modules listed above. * GEOG2017 Hydrological Monitoring will normally be taken as a 2nd year module. However, this module has been validated as a dual 2nd/3rd year module (GEOG3010 Hydrological Monitoring) and so if the module is not offered during the 2nd year, then students will be required to take GEOG3010 Hydrological Monitoring as a mandatory module as part of your 3rd year programme. In this case students must select one of the optional modules listed above.

Level 6 Modules				
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Module Code	Module Title	Credits	Status: Single Honours Only	Prerequisites
GEOG3001/2	Independent Study	30	Mandatory (double module); must be in a topic relating to water and environmental management	GEOG2004
GEOG3004	Mountain Environments Field Course	15	Mandatory	GEOG2010
GEOG3010	Hydrological Monitoring*	15	Mandatory/Optional	None
GEOG3013	River Conservation and Management	15	Mandatory	None
ENVS3004	Environmental Pollution and its Management	15	Mandatory	ENVS2001
ENVS3106	Landscape Ecology	15	Optional	ENVS 1100 ENVS 2100 ENVS 1102 or ENVS 2103
GEOG3007	Work Placement	15	Optional	None
GEOG3018	Hazard Mapping Virtual Field Course	15	Optional	GEOG 2009, GEOG2010
ENVS3102	Environmental Impact Assessments	15	Optional	ENVS 1100 and ENVS 1102 or ENVS 1010 and ENVS 2103 or ENVS 2001
ENVS3105	Project Management	15	Optional	None
GEOG3017	Mountain Glaciers and Landscape	15	Optional	GEOG2010
GEOG3019	Applied GIS and Remote Sensing	15	Optional	GEOG2005
GEOG3027	Countryside Conservation and Agricultural Change	15	Optional	None

* GEOG2017 Hydrological Monitoring will normally be taken as a 2nd year module. However, this module has been validated as a dual 2nd/3rd year module (GEOG3010 Hydrological Monitoring) and so if the module is not offered during the 2nd year, then students will be required to take GEOG3010 Hydrological Monitoring as a mandatory module as part of your 3rd year programme.

In addition to mandatory modules, students must choose two optional modules from the above table up to a total of 8 modules studied in the year.

The course design has also been informed by the Framework for HE Qualifications to produce graduates with the knowledge and skills required for this subject area by careful choice of module.

17 Support for students and their learning

- Water and Environmental Management students experience a wide variety of learning and teaching methods e.g. lectures, seminars, group work, field work, laboratory and computer practicals and tutorials.
- Comprehensive course handbook.
- All students have a personal tutor who guides completion of the Personal Development Profile and offers general support.
- A full week's induction programme at the start of the course.
- All modules provide module handbooks for the students as paper copies and also on-line.
- The University VLE 'Blackboard' has a section dedicated to the Environmental and Geography subject areas. Additionally most modules also provide VLE opportunities through Blackboard.
- Information and Learning Services (ILS) induction and information and study skills packages.
- Students have the opportunity to study abroad for one semester under the ERASMUS scheme in the second year.
- Study skills development facilitated by Geography and Environmental Management staff and separately by the ILS
- The University's Careers Service provides training opportunities for career planning.

18 Admissions Policy, Criteria and Procedures

Admissions Policy

The University aims to be accessible; it is committed to widening participation and encouraging diversity in the student population. The Institute of Science and the Environment works closely with central student support services, including the Admissions Office, the Disability and Dyslexia Service and the International Office, to support students from a variety of backgrounds. We actively encourage and welcome people from the widest range of economic and cultural backgrounds, and value the contribution of mature learners. Admission to the course is in Semester 1 only of the academic year.

Entry requirements

The University's standard entry requirements apply: 4 GCSEs at Grade C or above plus a minimum of 2 and maximum of 3½ A Levels or equivalent Level 3 qualifications. The current UCAS Tariff requirements for entry to the course are published in the prospectus.

Details of acceptable level 3 qualifications, policy in relation to mature students or applicants with few or no formal qualifications can be found in the prospectus or on the University webpages. Information on eligibility for accreditation of prior learning for the purposes of entry or advanced standing is also available from the University webpages or from the Registry Admissions Office (01905 855111).

Admissions procedures

Full-time applicants apply through UCAS (DFK8)

Part-time applicants apply directly to University of Worcester (UW)

Admissions/selection criteria

Students will be selected according to their qualifications (or predicted qualifications at A level or equivalent). Students with other qualifications will be selected on the submission of an essay and/or interview.

19 Methods for evaluating and improving the quality and standards of teaching and learning

- Annual evaluation of the Water and Environmental Management programme.
- External Examiner reports.
- Each module provides opportunities for student evaluation.
- Staff-Student Committee considers student feedback.
- The Learning, Teaching and Student Experience Committee and Academic Development and Practice promotes learning and teaching across the institution.
- Peer assessment of teaching by staff.
- New staff complete the Postgraduate Certificate in Learning and Teaching in HE.

20 Regulation of assessment

Requirements to pass modules

- Modules are assessed using a variety of assessment activities which are detailed in the module specifications.
- The minimum pass mark is D- for each module.
- Students are required to submit all items of assessment in order to pass a module, and in some modules, a pass mark in each item of assessment may be required.
- Some modules have attendance requirements (this will be detailed in the module handbook if applicable).
- Full details of the assessment requirements for a module, including the assessment criteria, are published in the module outline.

Submission of assessment items

- Students who submit course work late but within 5 days of the due date will have work marked, but the grade will be capped at D- unless an application for mitigating circumstances is accepted.
- Students who submit work later than 5 days but within 14 days of the due date will not have work marked unless they have submitted a valid claim of mitigating circumstances.
- Students who fail to submit an item of assessment lose their right to reassessment in that module, and will be required to retake the module.
- For full details of submission regulations see URF.

Retrieval of failure

- Students are entitled to resit failed assessment items for any module that is awarded a fail grade, unless the failure was due to non-attendance or non-submission.
- Reassessment items that are passed are graded at D-.
- If a student is unsuccessful in the reassessment, they have the right to retake the module (or, in some circumstances, take an alternative module).

Requirements for Progression

- Students at Level 4 may be permitted to progress to Level 5 when they have passed at least 90 credits at Level 4.
- Students at Level 5 may be permitted to progress to Level 6 when they have passed at least 90 credits at Level 5.
- A student who fails 90 credits or more due to non-submission will be required to withdraw from the University.
- Students who pass less than 90 credits but have submitted all items of assessment will be required to retake modules.

Requirements for Awards

Award	Requirement
CertHE	Passed 120 credits at Level 4 or higher
DipHE	Passed a minimum of 240 credits with at least 105 credits at Level 5 or higher
Degree (non-honours)	Passed a minimum of 300 credits with at least 105 credits at Level 5 or higher and a minimum of 60 credits at Level 6
Degree with honours	Passed a minimum of 360 credits with at least 105 credits at Level 5 or higher and a minimum of 120 credits at Level 6

Classification

The honours classification will be determined by whichever of the following two methods results in the higher classification:

- classification determined on the profile of the best 3 module (45 credits) grades attained at Level 5 and the best 8 module (120 credits) at Level 6 or
- classification determined on the best 8 module (120 credits) grades attained at Level 6 only

Institute-level Assessment Boards review and confirm results for modules, and the Board of Examiners considers students' mark profiles to make decisions about progression, awards and degree classifications as appropriate

21 Indicators of quality and standards

- The course underwent a successful periodic review in February 2010 and a number of commendations were made.
- Geography underwent a successful internal review and was re-approved in 2009.
- In November 2005, the University was audited by the Quality Assurance Agency. The audit confirmed confidence in the University's management of the quality of its academic programmes and the standards of its awards. The QAA particularly commended the University's supportive ethos and range of departmental and central services provided to students and staff in support of its mission to deliver an excellent inclusive higher education. The University will be audited next in 2011.
- The University has been awarded the accreditation of Investors in People (renewed in 2008).

22 Career Opportunities and Links with Employers.

Water and Environmental Management students at UW have the opportunity to develop a unique and diverse range of intellectual, practical and social skills that will stand them in good stead for a wide range of career destinations. Graduates are likely to enter the following occupations: environmental consultancy, hydrometric officer, development-control officer, hydro-ecologist, water resource planner, flood forecasting officer, conservation officer, countryside ranger, postgraduate study, and teaching. Close links are maintained with the Environment Agency and other employers in the sector.

Please Note: 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 s/he 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 each module can be found in the study module guide and course handbook. The accuracy of the information contained in this document is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.