Programme Specification

Section 1: Basic Data

Awarding institution/body	University of the West of England
Teaching institution	University of the West of England
Faculty responsible for programme	Applied Sciences
Programme accredited by	Institution of Environmental Sciences
Highest award title	MSc Environmental Consultancy
Default award title	
Interim award title	PGD Environmental Consultancy PGC Environmental Consultancy
Modular Scheme title (if different)	
UCAS code (or other coding system if relevant)	
Relevant QAA subject benchmarking group(s)	
On-going/valid until* (*delete as appropriate/insert end date)	
Valid from (insert date if appropriate)	September 2004

Authorised by… **Date:…**

Version Code 1.0

Section 2: Educational aims of the programme

Environmental Consultancy is a fast growing sector of the economy which demands structured academic and training provision for a growing workforce.

The MSc Environmental Consultancy provides a distinctive educational and training programme to meet the requirements of environmental consultancy practice for a higher and deeper level of expertise than that typically associated with a first degree qualification in science. The demonstration of the ability to meet the higher educational challenge demanded of a masters student provides for a distinct advantage to

i) those already in consultancy practice needing career development in new areas of knowledge and professional skills, and to
ii) those wishing to enter a range of environmental consultancy fields

The overall aim of the programme is to provide a broadly based vocational education at postgraduate level that is academically rigorous and relevant to the professional skills of the competent environmental consultant practitioner.

The programme provides an opportunity for science graduates and existing consultants to explore the theory and practice of contemporary environmental problems in depth and to develop both subject-specific and advanced practitioner skills, particularly project management, analytical, and communication skills.

Graduates from the programme will have acquired knowledge and skills, and obtained the necessary experience in decision-making to contribute at an advanced level to problem solving in environmental consultancy practice. Hence, they will be able to make a positive contribution to the development of practice and be able to respond to and initiate change in line with contemporary and emergent issues.

The design of the programme enables the student to:

- develop the knowledge, understanding and skills to produce new ideas, concepts and solutions.

- apply their learning in the workplace.

- pursue advanced level learning for career development in environmental consultancy.

The specific aims of the programme are:

- Provide the educational and resource environment which will enable students with a background in science at degree level to :-

  i) develop business skills required for environmental consultants.
  ii) acquire a technical expertise, or knowledge in alternative disciplines to those gained from a first degree.
  iii) experience through workplace learning the practice of short term project work typical of many consultancy activities.
  iv) study an area of professional practice in depth through a research and development project.
- Create a friendly and supportive atmosphere that will enable individual students to use the graduate learning experience at UWE and the Graduate School in the Faculty of Applied Sciences, to provide a postgraduate foundation for life long learning, continuing professional development and future careers
- Provide a curriculum that is enhanced by a balance of experience from research, consultancy and professional practice.

Section 3: Learning outcomes of the programme

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

This sub-section summarises broadly what a student, on successful completion of the proposed programme (or at different stages within it) is expected to know and understand about the subject matter.

Learning outcomes	Teaching, Learning and Assessment Strategies
A Knowledge and understanding of: • the need for both a multi-disciplinary and an interdisciplinary approach in applying knowledge and understanding of environmental systems. • environmental issues and sustainable and integrated approaches to management and resolution of problems • methods of acquiring, interpreting and analysing information and data with a critical understanding of the appropriate contexts for their use in practice. • operational and management systems, particularly project and business management for consultancy • the use of research and practice based inquiry to create, interpret and apply knowledge in the disciplines and in their own contexts.	**Teaching/learning methods and strategies:** *Achievement of learning outcomes is through a range of teaching and learning strategies including practice/work based learning; lectures and discussion; team working, simulation, modelling and action planning; case studies, problem based learning. Research and practice base enquiry is particularly addressed in the project module* *Throughout, the learner is encouraged to undertake independent reading and inquiry both to supplement and consolidate what is being taught/learnt and to broaden their individual knowledge and understanding of the subject.* **Assessment:** *Assessment of knowledge and understanding is through a range of assessed coursework and project work. This may include including presentations, work-based projects and portfolio, poster and written reports.*

Intellectual Skills

This sub-section indicates those intellectual (thinking) skills of which a student is expected to be able to give evidence on completion of the proposed programme.

B Intellectual Skills	**Teaching/learning methods and strategies**
• critically evaluate current research and advanced scholarship. • apply relevant theories to the analysis of and management of processes and outcomes. • create, identify and evaluate options and provide original solutions to work-based problems sometimes with incomplete data. • challenge the status quo by demonstrating intellectual flexibility and lateral thinking. • learn through reflection on practice and experience. • evaluate methodologies, develop critiques of them and where appropriate propose new hypotheses. • design a consultancy or research programme, analyse the findings, draw conclusions and make recommendations.	*Intellectual skills are developed through discussion, team exercises, case studies critical analysis and reflection of the research and practice evidence base. Throughout the programme students are encouraged to undertake independent inquiry to develop and to broaden their individual knowledge and intellectual skills. Specific training in research and development skills is provided within the project module.* **Assessment** *A variety of assessment methods is employed. All assess a learner's ability to demonstrate intellectual skills, and their application, assessment is through assessed coursework, project work, including presentations, work-based projects, portfolio, poster and written commentary.*

C Subject, Professional and Practical Skills

This sub-section indicates subject-specific, professional or practical skills that are expected to be developed by a student successfully completing the programme.

C Subject/Professional/Practical Skills	**Teaching/learning methods and strategies**
• apply learning on the programme to environmental consultancy practice. • engage creatively in project development. • participate effectively in a consultancy project programme. • design and implement a consultancy research programme. • participate in communicating project progress, strategies and outcomes • devise costs and draw up tenders for project work. • engage in client management and communications.	*Achievement of learning outcomes is through a range of teaching and learning strategies including practice/work based learning; team working, simulation, action planning; case studies, role play, problem based learning. The project module particularly addresses research design, methods and implementation.* *Throughout, the learner is expected to bring relevant knowledge to the programme to develop and consolidate programme content and to ground his/her individual knowledge and understanding of the subject within the context of professional practice.* *Additional support during workplace based training is provided through sponsors and subject experts.* **Assessment** *Skills are assessed by project work and portfolio grounded in professional practice and by role-play.*

D Transferable Skills and other attributes

This sub-section indicates the general skills which successful completion of the programme is likely to enhance.

D Transferable skills and other attributes	**Teaching/learning methods and strategies**
• demonstrate self-direction and originality in tackling and solving problems • act autonomously in planning and implementing tasks • demonstrate interpersonal skills of effective listening, negotiating and persuasion • demonstrate self-awareness and sensitivity to diversity in people and different situations. • perform effectively in a team and project environment • communicate effectively in a range of contexts • understand the importance of working within a resource parameter • seek , process and critically evaluate information and data effectively and disseminate in appropriate formats • demonstrate the ability to make decisions in complex and unpredictable situations • demonstrate the independent learning ability required for continuing professional development • application of IT skills in professional and technical practice.	*Acquisition of learning outcomes is through a range of teaching and learning strategies including:- practice and work based learning:- team working, simulation, action planning; case studies, role play, problem based learning.* **Assessment** *All of the transferable skills are encapsulated within the modules. Students will be encouraged to consider how they might apply them outside their experience of their current studies. Skill assessment is individual and in the context of team and project based learning.*

Section 4: Programme structure

STRUCTURE DIAGRAM

MODULES STUDIED FOR MSc ENVIRONMENTAL CONSULTANCY

ALL MODULES ARE COMPULSORY

Environmental Business Skills **USSJFP-30-M** **30 Credits**	**Advanced Topics in Environmental Sciences** **USSJFN-30-M** **30 Credits**

Professional Practice in Environmental Sciences
USSJFQ-60-M
60 Credits
Work Based Learning

Project USI907TM
60 credits

Master of Science

Compulsory modules

Environmental Business Skills USSJFP-30-M (30 credits)
Advanced Topics in Environmental Sciences USSJFN-30-M (30 credits)
Professional Practice in Environmental Sciences USSJFQ-60-M (60 credits)
Project USI907TM (60 credits)

Interim Awards:

Post Graduate Certificate 60 credits
Environmental Business Skills (30 credits)
Advanced Topics in Environmental Sciences (30 credits)

Post Graduate Diploma 120 Credits
Environmental Business Skills (30 credits)
Advanced Topics in Environmental Sciences (30 credits)
Professional Practice in Environmental Sciences (60 credits)

Award/s:

Master of Science 180 Credits
Environmental Business Skills (30 credits)
Advanced Topics in Environmental Sciences (30 credits)
Professional Practice in Environmental Sciences (60 credits)
Project (60 credits)

Section 5: Entry requirements

Students entering the programme will typically have an honours degree in a science subject suitable for developing an advanced understanding of environmental science and technology and its application to environmental consultancy problems. The programme will build upon the scientific background of students and integrate this with technological, economic, managerial and professional practice considerations of environmental consultancy. Entry is open to those who:

i. hold a first degree, normally of lower second class classification or above, in a science based discipline OR

ii. hold a first degree, normally of lower second class classification or above in other disciplines and can otherwise demonstrate that they have attained equivalence to the science based discipline areas necessary for this programme.

In the case of entry under ii above, the applicant is required to prepare a portfolio of evidence for an admission interview

Section 6: Assessment Regulations

MAR 3.0

Section 7: Student learning: distinctive features and support

7.1 Curriculum Design, Content and Organisation

This is a flexible advanced training programme that provides for the development of new knowledge, skills and techniques for environmental consultancy practice in a supportive learning environment. Delivery of the programme utilises the wide range of expertise of academics and professionals from two faculties, the Faculty Of Applied Sciences and the Faculty of the Built Environment.

Programme flexibility occurs through provision of a choice of technical and project topics enabling students to enhance skills in areas they wish to develop. Flexibility is further provided through a modular programme that provides qualifications from a Postgraduate Certificate, to a Postgraduate Diploma, to a Masters Degree and through optional modes of study as full time or part-time students. This supports the range of student needs from those wishing to become environmental consultants, to those already employed in the sector who require knowledge and skill development to advance their careers and support their continuing professional development.

The programme has induction events that introduce the programme and its organisational context, distribute reading and other materials in advance of modules and provide training workshops. Training workshops in induction will cover the use of all appropriate university facilities, for example the virtual learning resources and communications and administrative and training support structures. Induction training events are principally designed to make sure students know how to learn effectively, using the facilities they will need to support their learning.

Student learning for each module is structured as appropriate to the module and will include for example, study preparation, workshop or practical sessions, lecture, seminar discussion, project work, practice based learning, independent learning, assessment.

The curriculum is delivered through four compulsory modules, normally taken in the following order:

Environmental Business Skills
Advanced Topics
Professional Practice in Environmental Science
Project

To achieve the award of Master of Science the student must complete all of the above modules. Students may opt to complete their studies at Postgraduate Certificate or Postgraduate Diploma interim award level, dependent on circumstances and needs.

The Postgraduate Certificate is designed to be delivered through 2 × 30 modules, Environmental Business Skills and Advanced Topics in Environmental Sciences. The Environmental Business Skills module enables students to gain and appreciate the economic, sales, marketing, project and environmental skills essential to the success of a consultancy practice. The module includes accounting, project costing and personnel management.
The Advanced Topics in Environmental Sciences module, provides an opportunity for development of technical skills by presenting students with a choice of advanced study topics. The topics are included in the Department of Trade and Industry, JEMU (Joint Environmental Markets Unit) classification of the environmental technology sector and are developed in line with current knowledge, training needs and market trends. The indicative topics that are offered include:

Environmental Modelling
Waste Management
Ecological Survey and Land Management
Ecotoxicolgy
Contaminated Land and Remediation
Integrated Pollution Prevention & Control (IPPC)
Risk and Hazard Management and Assessment
Environmental Auditing
Environment and Health Impact Assessment
Air Pollution Management
Noise Monitoring and Pollution
Geographic Information Systems (GIS)

The 60 credits of study are delivered over one semester study period, for example October to January and require 600 hours of student learning.

The Postgraduate Diploma is delivered in 2 × 30-credit and 1 × 60-credit modules sequentially. The Environmental Business Skills and Advanced Topics in Environmental Sciences modules are combined with the work place based learning module Professional Practice in Environmental Sciences. The work place learning module provides students with an opportunity to apply skills in the practice of a short consultancy project or activity.
The 60 Credits of work based learning require 600 hours of student learning and is usually phased over a three month period between February and May.

The Master of Science is delivered in 2 x 30 credit, 1 X 60 credit modules as above together with a 60 credit project module requiring 600 hours of student learning. This module includes a research methods programme of study. The project work is undertaken when a student has completed the other modules and allows the student to develop and demonstrate their intellectual skills. The student will be able to take advantage of the opportunity to develop new and enhanced approaches to consulting, for example through project development or improvements to professional practice.

The Masters degree can be completed in one year by full time study. A part time student could complete the programme in three years, studying 60 credits per year, but might take up to five years depending on employment and study circumstances. A mixed mode of study is possible for students finding circumstances have changed during their study period.

7.2 Teaching Learning and Assessment

All of student learning is undertaken through modules that integrate the development of knowledge, understanding, intellectual and transferable skills. The programme includes workshops, problem based and advanced topic study designed to be stimulating and challenging. In all cases students are supported in achieving the learning outcomes of the module as a whole. Students are required to undertake additional reading and inquiry to develop their knowledge and understanding, to prepare for the workshops and practice and to enable them to define and complete their assessment tasks. Students have access to on-line resources for modules, the UWE library, which provides tailored services for remote and part-time students and to the environmental learning resources and postgraduate resource facilities of the Faculty of Applied Sciences. Induction events ensure that students understand how to use the appropriate support facilities.

7.3 Student Support and Guidance

Student learning is supported by academics from the Faculty of Applied Sciences and Faculty of the Built Environment. Each module leader provides a module guide before the module starts and this includes pre-reading, the module teaching and learning plan and the module assessment. Faculty of Applied Sciences technical staff support practical laboratories and the environmental learning resource facilities.

In relation to support for the work based learning phase for the Professional Practice in Environmental Sciences module, the module leader has overall responsibility for delivery, management and support of student learning. Additional specific support is provided by the Faculty of Applied Sciences' placement administrative staff and the Faculty placement tutor together with online placement support resources. Support and guidance is provided to students, their trainers and employers. A member of academic staff is allocated to the student whilst on work based training to support and maintain contact with the student and training provider.

Students who are not in relevant employment on entry to the programme will negotiate their own work based placement and are supported in this process. Support includes guidance on application, contractual matters and includes access to the facultys' database of environmental employers and placement providers. In the event that a student is unable to secure a work based learning placement, the Faculty of Applied Sciences is able to provide consultancy project based experience to enable completion of the requirements of the module.

The Faculty provides a student advisor system and the Faculty's Graduate School and dedicated postgraduate student facilities provide a supportive and creative environment for all postgraduate students studying in the Faculty of Applied Sciences.

Section 8 Reference points/benchmarks

This specification sets out how external and internal reference points have been drawn upon in programme design.

1. QAA reference points

The programme has been developed in accordance with QAA statements on postgraduate qualifications, and in relation to QAA Masters level descriptors. As yet QAA benchmark statements are not available for disciplines relevant to Masters level for this programme. However, the structure of the proposed degree is fully consistent with the QAA position statement on postgraduate qualifications.

2. External reference points are government environmental and business development policy, industrial and consultancy business advice and professional body requirements.

   Specifically:-

   - Industrial and consultancy sector indication of strong employment demands and environmental skill shortages in key areas and discussions with environmental consultancies including Casella Group, one of the largest UK environmental consultancies. The Casella Group are a leading external consultee for this programme development.
   - Nationally the Department of Trade and Industry (DTI) Joint Environmental Monitoring Unit (JEMU) and the Environment Agency, and regionally the South West Regional Development Agency and SW Enviroskills and the South West Regional Assembly, have set out the skill shortage and education and training needs for the environmental technology sector.
   - Staff external activities and links to the academic subject centre GEES, Geography Earth and Environmental Sciences, including a staff member of the board.
   - Professional body requirements, the Institution of Environmental Sciences (IES) that influence the academic and professional context of developments in environmental sciences and the new proposals for development of Chartered Environmentalist status through the Society for the Environment, SocEnv.

3. Internal reference points are the Faculty of Applied Sciences planning and academic programme planning objectives (2004-7) for postgraduate development and the newly established Graduate School, together with the programme teams expertise, experience and professional links, drawn from two faculties:- the Faculty of Applied Sciences (FAS) and the Faculty of the Built Environment (FBE).

   Specifically:-

   - FAS development of postgraduate provision, supported by the newly established Faculty Graduate School and postgraduate study facilities.
   - FAS and FBE academic strengths in the advanced topic areas which are in demand for knowledge and skill development - in environmental technology and management.
   - FAS established professionally accredited and vocational environmental sciences undergraduate and postgraduate programmes which command a high reputation amongst employers
   - FAS applied interdisciplinary research, consultancy and professional practice. This includes work with national and regional government agencies, local authorities, the professions, business and industry. For example: DEFRA, Environment Agency, Health Protection Agency, SW Regional Development Agency, Regional Observatory (and Public Health Observatory), Casella Group, WSP consultancy, SW local authorities, Eden Project, Arkive, Wildwalk@bristol, British Ecological Society, English Nature, Society of Chemical Industry and Royal Society of Chemistry, IES (Institution of Environmental Sciences), CIEH (Chartered Institute of Environmental Health), IOSH (Institute of Occupational Safety and Health).

4. QAA precepts and Masters level descriptors

The programme has been designed to reflect the QAA precept that there *is a balance between a strong and effective skills base relevant to the expectations of future employers and knowledge of current theory, practice and research.* The proposed programme emphasises the development of both personal and professional skills, in particular those enunciated by employers as essential for the practice of environmental consultancy. The programme takes as its foundation knowledge base that provided by a first degree in science. It builds upon this base to develop a critical awareness and reflection in students that encourages a flexible, creative and original approach to practice. A framework that is both constructed and elaborated by advanced understanding of established and evolving theoretical paradigms, research and practice based evidence and awareness of professional and ethical guidelines enables this approach.

The QAA Masters level descriptors reference the programme learning outcomes and enable students to have demonstrated the following knowledge and understanding:

- systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study, or area of professional practice;
- comprehensive understanding of techniques applicable to their own research or advanced scholarship;
- originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline;
- conceptual understanding that enables the student:

  - to evaluate critically current research and advanced scholarship in the discipline; and
  - to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.

holders of the qualification will be able to demonstrate skills that**:**

- deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences;
- demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level;
- continue to advance their knowledge and understanding, and to develop new skills to a high level

and will have:

- the qualities and transferable skills necessary for employment requiring:

  - the exercise of initiative and personal responsibility;
  - decision-making in complex and unpredictable situations;
  - the independent learning ability required for continuing professional development.

- **The University's mission statement**

‘The development of this programme reflects well institutional policies and is fully consistent with the University's commitment to *'advance an inclusive, civilised and democratic society and its enrichment through education, research, consultancy and public service''* and with its commitment *to the SW region and enhancing its reputation amongst employers*. By studying

environmental systems and complex problems this programme aims to produce postgraduates who are able to make a positive contribution to society through resolving and minimising environmental problems and societal impacts in an environmental consultancy context. Practice based and teamwork encourage inclusivity and an appreciation of other's cultures and beliefs. The university's committee structure including student representation at all levels, together with the Faculty of Applied Sciences Graduate School encourages an appreciation of democracy and a feeling of ownership and responsibility. The needs of the SW region for environmental skill and career development are explicitly supported by the programme.

- **University teaching and learning policies**

In line with the University's teaching and learning policies, this programme takes a student-centred approach to learning by allowing students to take control of aspects of their learning to develop individual participation and autonomy in learning. A stimulating and collegiate postgraduate environment is provided, facilitated through tutor support and the facultys' Graduate school. A variety of assessment methods are incorporated within the programme to cater for a diversity of student strengths and abilities. Although this document focuses on summative assessment, the course team recognises the importance of both summative and formative assessment activity and feedback, including reflective work and practice based learning, as an integral part of the learning and teaching process. All assessments comply with the University Assessment Policy and MAR.

- **Research, consultancy and professional practice.**

Research

Staff in the faculties involved are research and consultancy active and consequently programme development, formal teaching and project work is underpinned and informed by current work. Thus staff contributing to the programme have an established record in supervising postgraduate research-based projects, and students may have the opportunity to carry out their projects working alongside research staff at post-doctorate level. Furthermore, there is on-going interdisciplinary research and practice which is encouraged and maintained by faculty Research centres and groups.

Research Groups Expertise

<u>Faculty of Applied Sciences</u>

Centre for Research in Environmental Sciences (CRES)

Air Quality
Bioremediation & Contaminated Land
Biofuels Group
Severn Estuary
Water Quality

Unit of Applied Epidemiology – environment and health

AQMRC- Air Quality Management Resource Centre

Air Quality Management

Centre for Research in Analytical, Materials and Sensor Science (CRAMSS)

Analytical Sciences
Advanced Sensors

TALKS – Teaching and Learning for Knowledge and Skills

– *research and professional practice in teaching and learning, pedagogy*

Faculty of the Built Environment

Centre for Environment and Planning
Cities Research Centre
Construction and Property Research Centre
WHO Collaborating Centre for Healthy Cities and Urban Policy

Professional Practice and Consultancy Experience

- Professional Practice is facilitated through close work with the professional bodies, the Institution of Environmental Science, the Institute of Occupational Safety and Health, the Institute of Acoustics, the Chartered Institute of Environmental Health and the National Society for Clean Air. Staff links with environmental consultancies, organisations and environmental training support networks, for example SITA and Enviroskills also support practice and consultancy development. Staff are members or associates of many of the institutions and from time to time serve on the managing and local section committees of many of these bodies.
- Staff have excellent links and collaborate on research and practice development with national, regional and local government, agencies and the industrial and consultancy sector as indicated under section 8 (3) above.
- Members of the teaching staff are practising consultants and are advising on a variety of environmental projects to various clients. The AQMRC group has significant consultancy experience in air quality management. Clients include local authorities, government agencies and commercial companies.

Conclusion

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. These are available on the University Intranet.

Programme monitoring and review may lead to changes to approved programmes. There may be a time lag between approval of such changes/modifications and their incorporation into an authorised programme specification. Enquiries about any recent changes to the programme made since this specification was authorised should be made to the relevant Faculty Administrator.