

## MSc in Environmental Management

### For students entering in 2010

Awarding Institution:	The University of Reading
Teaching Institution:	The University of Reading
Faculty of Science and Faculty of Life Sciences	
Programme length:	12 months
Date of specification:	June 2010
Programme Director:	Dr L. J. Shaw
Board of Studies:	Prof. Stephen Nortcliff (chair), Dr Steve Robinson (deputy chair), Dr. L.J. Shaw, Dr C.D. Collins, Dr. S.R. Mortimer, Dr N. Branch.
Accreditation:	none

### Summary of programme aims

This MSc aims to provide a thorough understanding of the key scientific and socio-economic principles of environmental management and their relationships with current policy and regulatory processes. It also aims to equip students with relevant technical, research and business skills that underpin the application of environmental management in society, industry and government.

### Transferable skills

The following skills are provided: information technology; quantitative and qualitative problem-solving; communication in written, visual and oral forms.

### Programme content

The following profile states which modules must be taken (the compulsory part).

		<i>Credits</i>	<i>Level</i>	<i>Term</i>
APME58	Resource and Environmental Economics	10	7	1 and 2
SSMWEM	Soils, Waste and Environmental Management	10	7	2
APMA91	Environmental Management: Principles and Practice	10	7	1
SSMBES	Entrepreneurship and Business Skills	10	7	1 and 2
IDM073	Environment and Development: Problems and Policies	10	7	1
SSMLE	Land evaluation	20	7	1 and 2
LWMTEE	Environmental Law	10	7	1
SSMRPEM	Research Project	60	7	3 and summer vac

Students should choose 40 credits from the optional modules listed in the appendix to this specification. Students must choose the optional modules in consultation with the Programme Director, avoiding clashes on their timetable, with no less than 160 credits out of the total 180 for the degree being at level 7. When choosing modules, students are encouraged to align their options to one of the streams (1-3) specified in the appendix.

### Part-time/Modular arrangements

Part time participants may either follow all the modules taught in the Autumn term in their first year and all the modules taught in the Spring term in their second years or alternatively may follow half the modules from the Autumn and Spring terms in both their first and second years. The most appropriate arrangements for the individual applications will be discussed with the Course Director. Part time students will be encouraged to consider running a long-term research

project over the two years that they are registered on the course but may carry out their research project in either their first or second year, again as is appropriate to their circumstances.

### **Progression requirements**

None

### **Summary of teaching and assessment**

Teaching is through a combination of lectures, seminars, practicals, computer-based self-taught exercises, site visits and talks by invited speakers. Assessment is through a combination of exams, assessed practicals, essays, scientific reports and presentations.

The University's taught postgraduate marks classification is as follows:

#### Mark Interpretation

70 – 100% Distinction

60 – 69% Merit

50 – 59% Good standard (Pass)

#### Failing categories:

40 – 49% Work below threshold standard

0 – 39% Unsatisfactory Work

#### *For Masters Degrees*

To pass the MSc students must gain an average mark of 50 or more overall including a mark of 50 or more for the dissertation. In addition the total credit value of all modules marked below 40 must not exceed 30 credits and for all modules marked below 50 must not exceed 55 credits.

Students who gain an average mark of 70 or more overall including a mark of 60 or more for the dissertation and have no mark below 40 will be eligible for a Distinction. Those gaining an average mark of 60 or more overall including a mark of 50 or more for the dissertation and have no mark below 40 will be eligible for a Merit.

#### *For PG Diplomas*

To pass the Postgraduate Diploma students must gain an average mark of 50 or more. In addition the total credit value of all modules marked below 40 must not exceed 30 credits and for all modules marked below 50 must not exceed 55 credits.

Students who gain an average mark of 70 or more and have no mark below 40 will be eligible for the award of a Distinction. Those gaining an average mark of 60 or more and have no mark below 40 will be eligible for a Merit.

#### *For PG Certificate*

To pass the Postgraduate Certificate students must gain an average mark of 50 or more. In addition the total credit value of all modules marked below 40 must not exceed 10 credits.

Normally, candidates registered for a diploma will complete the taught courses offered in the Autumn and Spring terms and candidates registered for a certificate will complete the taught courses offered in the Autumn or Spring term.

### **Admission requirements**

Entrants to this programme are normally required to have obtained a good (upper second) honours degree in a related field, e.g. Environmental Science, Earth / Geoscience, Chemistry, Biology,

Geography and Agriculture. Applications from those with no first degree but who have previous experience may also be considered.

Admissions Tutor: Dr. A. Verhoef/ Dr. L. J. Shaw

All candidates are normally interviewed by two members of staff.

### **Support for students and their learning**

University support for students and their learning falls into two categories. Learning support includes IT Services, which has several hundred computers, and the University Library, which across its three sites holds over a million volumes, subscribes to around 4,000 current periodicals, has a range of electronic sources of information and houses the Student Access to Independent Learning (S@il) computer-based teaching and learning facilities. There are language laboratory facilities both for those students studying on a language degree and for those taking modules offered by the Institution-wide Language Programme.

Student guidance and welfare support is provided by Personal Tutors, School Senior Tutors, the Students' Union, the Medical Practice and the Student Services Directorate. The Student Services Directorate is housed in the Carrington Building and includes the Careers Advisory Service, the Disability Advisory Service, Accommodation Advisory Team, Student Financial Support, Counselling and Study Advisors. Student Services has a Helpdesk available for enquiries made in person or online ([www.risisweb.reading.ac.uk](http://www.risisweb.reading.ac.uk)), or by calling the central enquiry number on (0118) 378 5555. Students can get key information and guidance from the team of Helpdesk Advisers, or make an appointment with a specialist adviser; Student Services also offer drop-in sessions on everything from accommodation to finance. The Carrington Building is open between 8:30 and 17:30 Monday to Thursday (17:00 Friday and during vacation periods). Further information can be found in the Student website ([www.reading.ac.uk/student](http://www.reading.ac.uk/student)).

### **Career prospects**

On completion of this course, graduates may expect to find employment in the “Environmental Sector”, specifically within consultancies, local government and government research agencies, industry and within academia.

### **Opportunities for study abroad or for placements**

During their research projects, students may be based abroad or with the UK at consultancies, governmental agencies, research institutes or industrial bodies provided the Course Director is satisfied that suitable facilities and supervision are available to them.

### **Educational aims of the programme**

The MSc aims to provide a thorough understanding of the key scientific and socio-economic principles of environmental management and their relationships with current policy and regulatory processes. It is intended that students will gain an understanding of (i) the human impact on the natural environment and natural resources; and, (ii) how that impact can be managed from a natural and social science perspective. The MSc also aims to equip students with relevant technical, research and business skills that underpin the application of environmental management in society, industry and government.

## Programme Outcomes

### *Knowledge and Understanding*

#### **A. Knowledge and understanding of:**

1. The interrelated nature of diverse components of the earth system and how to model and predict environmental cycles and processes
2. Environmental and natural resource problems arising from the activity of humans
3. Scientific and socioeconomic principles of the management of human impacts on natural environments
4. Managed environments and the ecosystem services they provide
5. Techniques and processes involved in site investigation and risk assessment
6. Sources, processing and disposal of waste materials
7. Issues associated with population change, pollution, resource use, poverty and climate change at global and local scales
8. Key areas of environmental law and regulation in England and Wales and Europe
9. Statistical methods and their application to environmental data
10. Experimental design and sampling strategy

#### **Teaching/learning methods and strategies**

Lectures, laboratory and field practicals, seminars, group discussions, videos, presentations by industrial practitioners, site visits, data handling exercises, computer-based exercises.

#### *Assessment*

Practical reports, examination, essays, computer and laboratory-based practicals

### *Skills and other attributes*

**B. Intellectual skills – able to:**

1. Explain how the diverse components of the Earth system interact with consequences for biogeochemical cycles and global climate.
2. Explain how environmental economics can be used to understand the processes which have given rise to environmental problems and identify appropriate policy measures to contradict them.
3. Explain the main issues and concepts associated with sustainable development and assess the process of change to more sustainable systems
4. Evaluate ecosystem services provided in a range of environments and the impact of human activities on their provision.
5. Outline strategies and procedures for site investigation, risk assessment and environmental management
6. Illustrate sources of and disposal routes for industrial and domestic waste
7. Discuss key areas of environmental law and regulation in England and Wales, including the impact of EU law
8. Plan and carry out a research project

## Teaching/learning methods and strategies

Lectures, laboratory and computer based practicals

## Assessment

Exams (1-7), essays (1,3,6,7), team debates (3), written reports (2,4,5), project thesis and presentation (5 and 8).

**C. Practical skills – able to:**

1. Analyse environmental data using classical and spatial statistical methods
2. Use computer packages to graphically present field data
3. Carry out risk assessments and site investigations
4. Use laboratory skills to characterise the biological, physical and chemical components of the environment
5. Plan and carry out a research project

**Teaching/learning methods and strategies**

Laboratory practicals, seminars, lectures, independent research project

*Assessment*

Laboratory and/or field reports (1-4), project thesis and presentation (5).

These skills are assessed primarily with reference to specific modules (see module descriptions for details) and (4) will depend on choice of optional modules and topic of research project.

<p><b>D. Transferable skills – able to:</b></p> <ol style="list-style-type: none"> <li>1. Produce word documents containing tables, numbered and bulleted lists, a variety of fonts, graphics and pictures.</li> <li>2. Sort data and perform basic arithmetic and statistical procedures within Excel</li> <li>3. Produce charts and graphs in a variety of formats using Excel</li> <li>4. Produce slides for a presentation within the PowerPoint package that include text, bullet points, drawings, use of pre-set animations for the appearance of text</li> <li>5. Give clear presentations on science and social science topics</li> <li>6. Effectively use library and internet resources to search and retrieve information</li> <li>7. Produce clearly-written scientific reports</li> <li>8. Work in teams</li> <li>9. Plan and carry out research projects including managing time in an efficient fashion</li> <li>10. Reflect and evaluate own academic progress and its implications for career planning</li> </ol>	<p><b>Teaching/learning methods and strategies</b></p> <p>Lectures, self-taught computer packages, seminars, tutorials, individual research projects, data exercises, team-based presentations</p> <p><i>Assessment</i></p> <p>Transferable skills are largely assessed indirectly through individual assignments (essays, scientific reports). Skill 9 is assessed through the individual research project and skill 10 is assessed directly for those students choosing the entrepreneurship and business skills option (see MDF for more details).</p>
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**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 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 each module can be found in the module description and in the programme handbook. The University reserves the right to modify this specification in unforeseen circumstances, or where the process of academic development and feedback from students, quality assurance processes or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.**

## Appendix

### Optional modules<sup>1</sup>

#### Stream 1: Contaminated and urban environments

code	title	convenor	credits	Level
SSMQAD	Quantitative analysis of spatial data	Denise lambkin	10	7
SSMBIO	Soil microbiology and biotechnology	Liz Shaw	10	7
SSMCON	Soil contaminants	Chris Collins	10	7
SSMTPS	Transport processes in soil	Anne Verhoef	10	7
SSMREM	Remediation	Chris Collins	10	7
SSMSIR	Site investigation and risk management	Chris Collins	10	7
SSMPSIA	Practical site investigation and assessment	Chris Collins	20	7
SSMSWQ	Soils and water quality	Steve Robinson	10	7
BIMEY8	Living landscapes	Ross Cameron	10	7

#### Stream 2: The changing environment

code	title	convenor	credits	Level
ES3I8	Carbon in the environment	tbc	10	6
GG3AP	Air Pollution: Effects and Control	Richard Skeffington	20	6
GG342	Environmental modelling	Andrew Wade	20	6
GG362	Water resources	Alan Howard	10	6
APMA90	Climate change and food systems	Timothy Wheeler	10	7
SSMESS	Earth Systems Science	Mark Hodson	10	7
MT2CC1A	The science of climate change	Nigel Arnell	10	5
GG3CC	Climate change	Maria Shahgedanova	20	6
IDM068	Extractive Industries	Gavin Hilson	10	7
BIMEL7	Plants and Climate	Michael Dennett	10	7
BIMWB2	Aquatic Resources	Amanda Callaghan	10	7
APME68	Climate change economics	Nick Bardsley	10	7
CEMRE	Energy and the environment	Anne Wheldon	10	7
CEMRC	Carbon management	David Shipworth	10	7

#### Stream 3: Agricultural and rural environments

code	title	convenor	credits	Level
APMA41	Agriculture in the tropics	Peter Craufurd	10	7
APMA89	Water, agriculture and irrigation	Peter Craufurd	10	7
APMA90	Climate change and food systems	Tim Wheeler	10	7
APMA92	Rethinking agricultural development	Amir Kassam	10	7
APME55	Agricultural project planning and management in developing countries	Srinivasan	10	7
APME61	Appraisal of agricultural and rural planning	Srinivasan	10	7
IDM074	Environment and development: Case studies	Gavin Hilson	10	7
BIMER5	Ecological aspects of environmental assessment	Jonathon Mitchley	10	7
BIMEX7	Community and landscape	Ross Cameron	10	7
BIMEC4	Ecology and management of plant diseases	Michael Shaw	10	7

<sup>1</sup> This list is not final– to be confirmed subject to information concerning module availability in 2010-11 and timetabling



BIMEA7	Environmental and ecological weed management	Bob Froud-Williams	10	7
BIMWH1	Practical wildlife management	Graham Holloway	10	7
BIMWJ2	Sustainable agriculture and land management	Ross Cameron	10	7
BIMWC1	The management of invertebrates for conservation	Colin Prescott	10	7
BIMHA1	Tropical environments	Michael Dennett	10	7