PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	MSc
4	**Programme Title**	Environmental Resource Assessment
5	**UCAS/Programme Code**	5023F/P
6	**Programme Accreditation**	N/A
7	**QAA Subject Benchmark(s)**	N/A
8	**FHEQ Level**	7
9	**Date written/revised**	February 2013

10 Programme Aims

1. To provide agriculture, biology, geography, earth science, environmental science and other natural science graduates with a specialised advanced interdisciplinary training in the theory and practice of assessing the biological, physical and hydrological components of the natural environment, as well as the methodologies for assessing environmental impact.
2. To broaden the training and experience of students whose first degree covers only one of the main subject areas of biological sciences, earth sciences and hydrology, soil science or agriculture and land use. The programme includes an element of conversion to allow students from a wide range of backgrounds to progress to the advanced science training commensurate with the focus of this Masters degree and also aims to offer opportunities for personal subject specialisation to aid career positioning.
3. To provide candidates with an appropriate but flexible interdisciplinary knowledge and technical skills base required for them to follow successful careers in within the environmental assessment industry, or in governmental and non-governmental organizations with statutory involvement in the environment.
4. To address the needs of employers such as: agencies involved in environmental impact assessment and natural resource management (e.g. UK Environment Agency); international development agencies; university departments and research institutes; non-governmental organisations (NGOs) concerned with sustainable environmental management; and environmental consultancies. These organisations need suitably trained staff with a specialised interdisciplinary background to implement their environmental survey, monitoring and/or research programmes.
5. To equip graduates with: an advanced conceptual understanding of environmental resource assessment and the theoretical and practical background to an appropriate range of modern techniques in this field; practical skills in scientific survey and experimental techniques appropriate for application in the assessment of the physical and biological components of both natural habitats and modified ecosystems and the impacts of development upon them, including the use of geographical information systems (GIS); a critical awareness of contemporary sustainability and conservation issues in environmental management; and a practical understanding of how established techniques of research and enquiry are used to develop effective plans for environmental management.
6. To enable students to meet the Masters level (M, level 4) of the QAA framework for higher education qualifications for England, Wales and Northern Ireland.

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The

programme outcomes have references to the benchmark statements for (subject)

Knowledge and Understanding

On completing the programme students should:

A1 demonstrate an advanced knowledge and understanding of the theoretical background necessary to use modern GIS technologies for environmental resource assessment in a range of ecosystems from the boreal and temperate zones to the tropics

A2 have an understanding of the main components of the environmental resource base, including soils, vegetation, hydrology and animal populations

A3 have an understanding of the principles, applications and limitations of environmental impact assessment

A4 have a understanding of the principles, applications and limitations of scientific environmental survey including appropriate analytical and experimental techniques for analysing components of habitats and natural or managed ecosystems

A5 have an understanding of appropriate quantitative techniques, experimental design and data analysis and the application of a systems approach to analysing and modelling the environment;

A6 demonstrate an advanced knowledge and understanding of a range of appropriate optional subjects to suite personal interests and career positioning including: sustainable development; forest and woodland management; habitat mapping and ecosystem management; climatic and environmental change.

Teaching and Learning Methods

Teaching Strategy

A foundation knowledge and understanding of quantitative techniques and data analysis (A5) underpins the specialist material of the degree programme and is taught via lectures, practical and computer classes, and case studies in compulsory module ACE8022 in Semester 1. Specialist knowledge and understanding of the core material is taught via lectures (A1-A4), practical classes (A1, A2, A4), seminars (A1-A3), case studies (A1-A3) and field classes (A2, A4) in the compulsory modules BIO8014, ACE8028, ACE8060, ACE8061, ACE8045 and ACE8030. Compulsory field classes embedded within module ACE8030 allow students to experience a wide range of generic field techniques employed in professional environmental surveys (A4) for assessing soil conditions/variability, landscape hydrology, vegetation and wildlife ecology. The 70-credit MSc research project (ACE8098) together with the 10-credit preparatory module (ACE8093) enable survey, experimental design, systems analysis and/or development and management knowledge to be taught in the context of a location of interest to the student and gives them the opportunity to extend their knowledge and practical application of some of the material covered in A1-A6. Optional modules enable students to concentrate on advanced specialist material of individual interest (A6) such as forest and woodland ecology (ACE8024), ecosystem management (ACE8041), sustainable development (ACE8021) and climate change (ACE8049). The Diploma Dissertation (20 credits) allows Diploma candidates to be taught how to undertake a more in depth and critical analysis of any of topics A1-A6 based on library research or secondary data.

Learning Strategy

The understanding of lecture material is encouraged through independent reading (A1-A6) in all modules, assisted by the provision of prioritised reference lists. Such learning is reinforced by formative feedback provided by practical exercises (A1, A2, A4, A6) in BIO8014, ACE8022, ACE8028, ACE8030, ACE8060 and ACE8061; seminars (A1-A3, A6) in ACE8049, ACE8024 and ACE8061; case studies (A1-A3, A6) in ACE8028, ACE8021, ACE8049, BIO8014 or the Diploma Dissertation (ACE8097) for Diploma candidates (A1-A6), with active participation in fieldwork and a major research project (A1-A6) leading to the MSc thesis ACE8094 for MSc candidates, with some workshops (A6) and independent problem solving exercises (A4-A6) in ACE8060 and ACE8030.

Assessment Strategy

Assessment of some modules (A1, A3, A4) is entirely by in-course assessed work including practical class exercises , seminars, case studies, and problem solving exercises (ACE8022,

ACE8021, ACE8024, BIO8006, BIO8014, BIO8000 and ACE8093. Assessment of specialist knowledge and understanding is by formal unseen examinations (ACE8028, ACE8045) and by coursework exercises that provide a fuller test of student understanding of the relevant literature (A1-A2, A4, A6). Both employ a range of approaches in order to accurately assess student abilities. Written papers include essay and multi-part questions. Assessed coursework comprises practical exercises (BIO8014, ACE8022, ACE8028, ACE8023, ACE8024 and BIO8004), seminar presentations (ACE8023, ACE8024, ACE8049 and ACE8093), case studies (ACE8028, ACE8021, ACE8023, BIO8014 and BIO8004), literature reviews, scientific/technical reports and essays (ACE8093, ACE8024, ACE8030, ACE8049, BIO8014 and BIO8004. Field class and other reports are also assessed (A4) for ACE8028, BIO8000, BIO8006, ACE8030, ACE8045 and some of A1-A6, (depending on the topic of the MSc project or Diploma Dissertation, are also examined by means of a written MSc thesis (ACE8098), or the Diploma Dissertation (ACE8097) for Diploma candidates (A1-A6), and (at the discretion of the External Examiner) by *viva voce* examination.

Intellectual Skills

On completing the programme students should be able to:

B1 research and critically assess and monitor the functioning and management of natural and managed ecosystems within an interdisciplinary, holistic framework; to analyse the role of edaphic, biological, climatic and hydrological factors; and to assess the impact of human-induced development on the natural environment

B2 use modern GIS and remote sensing techniques in environmental resource assessment and to interpret such data to develop appropriate management systems for the sustainable use and conservation of environmental resources

B3 assess the sustainability of a range of agricultural and environmental management systems, including techniques for the development of indicators, benchmarks and critical thresholds, and to incorporate concepts of sustainable development into all stages of project management

B4 practice modern environmental survey techniques, experimental design, modelling and analytical techniques in a range of appropriate disciplines, and the ability to critically assess the data generated by these techniques and to present and summarise the results in professional reports

B5 plan a research project and to develop a logical framework for funding of a sustainable development project proposal

B6 practice a range of self-selected subject-specific specialised skills appropriate for specific career goals.

Teaching and Learning Methods

Teaching Strategy

Research, classification and critical assessment skills (B1- B3) are taught via lectures, seminars, case studies and practical classes within compulsory modules BIO8014, ACE8028, ACE8060, ACE8061, ACE8045 and ACE8030, with opportunities to specialise further in optional modules ACE8021, ACE8024, ACE8040, ACE8049, ACE8054, BIO8004 and BIO8006 Experimental design, survey and analytical techniques, and data handling, presentation and appraisal (B4) are taught initially in hands-on computer or laboratory-based practical or problem solving classes and in field classes within the Phase 1 modules ACE8022, ACE8028, and ACE8045. These skills are consolidated by more advanced training in the lectures, practical classes and case studies of subject-specific specialised modules and in the field classes for environmental survey techniques (ACE8030) and the ecological survey options (BIO8000). Project planning skills (B5) are introduced as practical exercises to produce a logical framework and a full project proposal in the sustainable development module (ACE8021). Further specialised skills (B6), such as techniques in ecological survey and identification (ACE8045) are taught within optional specialised modules. More advanced training in several of skills B1-B6 is provided on an individual basis during the MSc thesis project (ACE8098), for which students usually work within the existing research group. Individual training for some of the skills B1-B6 are provided for Diploma candidates in the Diploma Dissertation (ACE8097).

Learning Strategy

Independent reading of recommended references is important in understanding how knowledge is applied and techniques used (B1-B3). However, students are encouraged to acquire skills through active participation in project planning, experimental and survey design and data interpretation as part of the coursework covered initially in the Phase 1 modules ACE8022, ACE8028 and later in Phase 2 optional modules, and through participation in field sampling, analysis and data interpretation (B4) in field techniques in modules ACE8030 and ACE8045. Learning is reinforced and further developed, in either temperate or tropical environments, as MSc students apply their skills in data collection, analysis, interpretation and presentation (B1-6) in their MSc project and thesis (ACE8098).

Assessment Strategy

Formal examinations (B1, B2, B4) are used to assess some subject specific/professional skills, particularly when additional reading reinforces learning (ACE8028, ACE8045). However, most of these skills are assessed by coursework reports and presentations (B1-B6) in BIO8004, ACE8021, ACE8030, ACE8024, ACE8045, BIO8014, and BIO8004. Some of the skills (B1-B6) are further practiced and assessed by means of the MSc thesis, (ACE8098) or the Diploma Dissertation (ACE8097) and (at the discretion of the External Examiner) by *viva voce* examination.

Practical Skills

On completing the programme students should be able to:

C1 critically evaluate current research and advanced scholarship in the area of environmental resource and impact assessment in a range of ecosystems from the boreal and temperate zones to the tropics

C2 critically evaluate the sustainability of environmental management systems and have a holistic awareness of current thinking and practice in development

C3 develop logical thinking and a structured approach to problem-solving, using and developing computer models where appropriate

C4 comprehend and critically interpret a range of environmental and ecological data, present and summarise such data to critically assess its significance, using statistical techniques where appropriate, and produce a reasoned argument

C5 formulate and design environmental and ecological surveys and impact assessments and to develop integrated project proposals against different types of objectives

C6 formulate and test hypotheses using logical and consistent quantitative or qualitative criteria

Teaching and Learning Methods

Teaching Strategy

The cognitive skills C1-C6 are developed initially in the degree programme's Phase 1 modules through a combination of lectures, practical classes exercises (ACE8021, ACE8022, ACE8028 and ACE8045); problem-solving exercises (ACE8022, ACE8030); case studies (ACE8028, ACE8021) and field classes (ACE8028, ACE8045). They are progressed in the Phase 2 compulsory modules and in optional specialised modules, where they are applied to specific research or management issues (ACE8024, ACE8049) sometimes in a field-based environment (C5) as in ACE8030, BIO8000 and BIO8006. Cognitive skills C1 are particularly developed in specific specialised compulsory modules through lectures, seminars (ACE8021 and ACE8028) and case studies (BIO8014, ACE8028, ACE8021) involving literature reviews, guided reading and critical analysis of presentations. The MSc project and thesis (ACE8098) allows cognitive skills C1-C6 to be applied to a specific research problem or issue guided by individual supervision, sometimes in a tropical location. The Diploma Dissertation (ACE8097) teaches the use of cognitive skills C1-C6 in the context of an in-depth and critical review of research results.

Learning Strategy

Students are encouraged to acquire cognitive skills in a variety of ways including: the development of a project proposal and development of a logical framework for a development project during their sustainable development module ACE8021 (C2); through experience of case studies, course work and discussion following seminars (C1-C6) in ACE8023, ACE8024, ACE8049, ACE8054 and BIO8004; and through designing a sampling and analysis strategy and analysing the data from an environmental field survey and reflecting on field exercises (C4-C5) in ACE8030 and ACE8045 and some options. The design and practice of the MSc research project ACE8098 is also important and is particularly useful for further developing all these cognitive skills but particularly for understanding the development of and testing of hypotheses (C6). The Diploma Dissertation (ACE8097) is useful in developing some of the cognitive skills C1-C5.

Assessment Strategy

Cognitive skills C2-C3 are assessed by coursework (case studies, problem-solving exercises, in-course tests, scientific/practical reports, project proposals, seminars and presentations). Cognitive skills C1-C6 are further assessed in specialised modules by written formal examination (C1-C5) in ACE8028, ACE8045; seminars in ACE8024, ACE8049 and BIO8004; and case study reports (C1-C4) in ACE8028, BIO8014 and ACE8021; field survey or professional reports (ACE8028, ACE8030, ACE8024), project proposals (ACE8021, ACE8093) and the MSc thesis ACE8098 (C4-C6). Many other of the skills C1-C6 are also examined by means of the MSc thesis and (at the discretion of the External Examiner) by *viva voce* examination. Diploma candidates skills C1-C5 are also tested by means of the Diploma Dissertation (ACE8097).

Transferable/Key Skills

On completing the programme students should be able to:

D1 communicate conclusions clearly to specialist and non-specialist audiences;
D2 plan, organise and prioritise work activities in order to meet deadlines;
D3 show originality and initiative in tackling and solving problems;
D4 act autonomously in planning and implementing tasks at a professional or equivalent level;
D5 take personal responsibility to independently advance their knowledge and understanding, and to develop new skills to a high level;
D6 use library and other information sources skilfully and appropriately;
D7 use IT resources skilfully and appropriately;
D8 to make decisions in complex and unpredictable situations.

Teaching and Learning Methods

Teaching Strategy

The teaching of transferable skills is an important part of the MSc and Diploma throughout many modules. Verbal presentation skills and dealing with critical feedback are developed in seminars (D1) associated with several modules seminars (ACE8021, ACE8023, ACE8024, BIO8014 and ACE8049). All skills (D1-D8) are important in planning, carrying out, presenting and being examined in the research project and MSc thesis ACE8098. Field classes (D1-D4) in ACE8030, ACE8045, ACE8028 and ACE8024, development of project proposals (D1, D3-D5, D7 and D8) in ACE8021, ACE8093 and independent problem solving (D2-D8) in ACE8060 and ACE8030 teach students about the importance of communication skills, information sources and originality and independence in the professional implementation of their knowledge.

Learning Strategy

A wide range of methods is used to reinforce the teaching of key skills and aid understanding. Whilst there is some recommended reading (D1-D8) most key skills (D1-D6) are better developed though field work (ACE8028, ACE8045, ACE8030, ACE8024, BIO8006); case studies (D1-D4, D6-D8) in ACE8028, ACE8021, BIO8014, and the MSc research project (ACE8098) or Diploma Dissertation (D1-D8); seminars (D1, D3-D5, D7) in ACE8021, ACE8024, ACE8054 and BIO8014; problem solving exercises in ACE8022, ACE8030 and logical framework development in ACE8021 (D2-D8) and communicating information in short oral presentations in ACE8049, ACE8021, ACE8030 and the MSc project (D1).

Assessment Strategy

Key skills are rarely assessed by formal examination (D5-D7). Scientific/technical reports (D1-D8) in ACE8028, ACE8030, ACE8021, ACE8024 and ACE8045 project proposals (ACE8021), a logical framework for a development project (ACE8021), the MSc thesis (ACE8098) and oral examination, or the Diploma Dissertation (ACE8097) and other elements of assessed coursework (D1-D4, D6-D8) are the main methods of assessment. Assessed seminar presentations (ACE8054, ACE8049, ACE8024) test oral communication and presentation skills, as does the final *viva voce* examination of the MSc thesis. (D1).

12 Programme Curriculum, Structure and Features

Basic structure of the programme

This is a one-year, fulltime modular Masters degree programme (180 credits) based in the School of Agriculture, Food and Rural Development. It conforms to the modular structure of other MSc programmes taught in the School of Agriculture, Food and Rural Development and the School of Biology over three 'Phases', and is delivered through inter-school collaboration. It consists of 110 credits in the taught component, with approximately 65 credits in MSc Phase 1 (September-January) and 45 credits in MSc Phase 2 (January-March). A research project worth a further 70 credits, is undertaken in MSc Phase 3 (April-September)**.** Of the taught modules, 80 credits are compulsory modules appropriate to the focus of the degree, whilst the remaining 30 credits are chosen from options offering flexibility and opportunity for personal specialisation and career positioning. 65 credits of taught modules are normally taken during Semester 1 (MSc Phase 1) and most are examined in January. These include mainly compulsory modules (55 credits). A further 10 credit compulsory module and options (20 credits) are given over a shorter 8 week period in Semester 2 (MSc Phase 2), followed by a compulsory field class (10 credits). All taught modules given in MSc Phase 2 are assessed by coursework only**.** The MSc thesis has to be submitted in September.

Students will have to satisfy the standard University regulations given in Examination Conventions for Taught Postgraduate Masters' Programmes. Decisions on fail, pass, diploma, MSc merit and MSc distinction awards will be made by the Joint MSc Board of Examiners in late September and will be based on overall performance in all aspects of the subject.

Five compulsory modules (45 credits) are given during Phase 1. These include ACE8028, ACE8045, ACE8060 and ACE8022 which are key components of the programme. A further 35 credits of compulsory modules (including BIO8014, ACE8061 and ACE8030) are taken in

Phase 2. A further 30 credits of specialist optional modules are spread over Phases 1 and 2. Most taught 'compulsory' and 'optional' modules given over Phase 1 are assessed both by coursework and written examinations in January. All modules given over Phase 2 are assessed by coursework only. The learning outcomes described previously in Section 10 are mapped against module synopses below.

Certain compulsory modules delivered in Phase 1 provide an element of conversion, to allow students from a wide range of backgrounds to take each module, and the necessary scientific knowledge and skills base to progress with more advanced specialised compulsory modules. They also include vocational elements to provide a suitable background and skills for employment. ACE8022 Quantitative Techniques, Experimental Design and Data Analysis (10 credits) provides students with the expertise necessary to design field and laboratory experiments, to give them the skills necessary to analyse observational and experimental data using a variety of statistical software, and to understand and interpret the results of their analyses (A4, B4, C4, C6, D3). ACE8028 Environmental Assessment (10 credits) provides an introduction to soils and water resources; the environmental variables influencing soil and hydrological processes; the assessment of data sources and methods of interpretation; progressing to an analysis of soil variability, land use potential and habitat assessment, and culminating in a case study involving land suitability and/or environmental impact assessment (A2-A4, B2, B4, C1, C3, C5).

Other compulsory taught specialised modules continue to provide a conversion element but proceed to advanced science training commensurate with Masters-level teaching and include vocational elements appropriate to the specific aims and objectives of the degree programme. BIO8014 GIS and Remote Sensing (10 credits) is a key module that provides the theoretical background and practical experience necessary to use modern GIS technologies and remotely sensed data in environmental resource assessment and management. An emphasis is placed on using GIS, both in practicals and project assignments, whilst the lectures provide a thorough grounding in the different types of GIS and standard GIS analytical techniques, especially when linked to aerial photography and satellite imagery (A2,A4,B2,B4, C5, D2-8). ACE8045 Ecological Field Techniques (10 credits) and ACE8030 Environment and Habitat Assessment Field Class (10 credits) provide students with the theoretical background and field techniques to design and carry out integrated environmental, ecological, soils and hydrological surveys. It includes a programme of field classes that allow students to gain experience in specialist field techniques and develop skills in the analysis and interpretation of data (A4, B4, C4-C6, D1-D8). ACE8021 Sustainable Development and Environmental Change (10 credits) evaluates concepts of sustainability and their application in agricultural and environmental management in the context of development in a dynamic, changing biophysical, economic and socio-cultural environment. A holistic and interdisciplinary approach is adopted to examine how natural resources can be better managed to maintain or increase productivity, profitability and stability, whilst still conserving or enhancing the resource base (A2, A3, B1, B3, B5, C2, D2, D4, D8).

Optional modules allow students to develop specialised interests and to enhance their employment opportunities in specific fields of environmental assessment and management. One particular feature of the programme is the opportunity to specialise in environmental change through opting for a combination of ACE8021, ACE8024 and ACE8049. These modules review different aspects of change in natural and managed ecosystems, and assess the sustainability of different development strategies (A2-A4, B1-B4, C1-C2, C4-C5, D1-D6). Another theme is the assessment of plant and animal communities in the context of ecosystem management covered in options ACE8024 Trees, Ecology Management and Environmental Impacts, and ACE8045 Ecosystem Management (A6, B6, C1-C6, D1-D8).

Key features of the programme (including what makes the programme distinctive)

1. The MSc degree utilises a wide range of environmental expertise available in the Faculty of Science, Agriculture and Engineering and elsewhere in the Newcastle University, and draws upon the close collaboration achieved between, in particular, the Schools of Agriculture, Food and Rural Development; Biology; and Civil Engineering and Geosciences.
2. It is innovative in adopting an holistic interdisciplinary approach taught across several

Schools, including elements of environmental law and economic analysis, but is strongly underpinned by science. This approach combines a sound grounding in the environmental resource base (soils, climate, hydrology, vegetation and animal communities) with practical experience of modern techniques in field and laboratory based assessment, emphasizing appropriate field survey techniques, GIS, remote sensing and predictive environmental modelling.

3. Optional modules allow students to develop specialised interests and to enhance their employment opportunities in specific fields of environmental assessment and management, including the opportunity to specialise in the tropical environment.
4. The programme offers opportunities for students to develop skills in framing sound environmental assessment and development projects and to understand how their expertise might be used in subsequent employment.
5. An emphasis on practical skills in laboratory classes, field courses and the MSc project that provide essential experience in environmental survey and research techniques.
6. A substantial 4 month MSc project provides a unique opportunity for students to gain first-hand environmental experience, much in demand from employers, and to apply their newly learnt skills in field situations. In this context, students usually undertake their project with an existing university research group or national environmental institution or consultancy, or in collaboration with an overseas research or survey institution.

Programme regulations (link to on-line version)

13 Criteria for admission

Entry qualifications
A 2nd class degree from a UK University, or its overseas equivalent, is normally the minimum qualification for entry. Preferred first-degree subjects are biology, geography, environmental science or agriculture. Other relevant science degrees, or an economics degree are also acceptable.

Admissions policy/selection tools
Offers of places will be made to suitably qualified candidates based on information provided in the application form and will be conditional upon a satisfactory reference and upon the applicant achieving a minimum of a 2nd class degree, if they do not hold such a degree at the time of the application.

Non-standard Entry Requirements
Applicants who hold non-standard qualifications, and/or have relevant experience, will be considered on an individual basis.

Additional Requirements
None

Level of English Language capability
Applicants for whom English is not a first language must provide evidence of a satisfactory command of English, preferably by means of a TOEFL score of 575 or greater, or by an IELTS score of 6.5 or greater.

14 Support for Student Learning

The Student Services portal provides links to key services and other information and is available at: *http://www.ncl.ac.uk/students/*

Induction
During the first week of the first semester students attend an induction programme. New students will be given a general introduction to University life and the University's principle support services and general information about the School and their programme, as

described in the Degree Programme Handbook. New and continuing students will be given detailed programme information and the timetable of lectures/practicals/labs/ tutorials/etc. The International Office offers an additional induction programme for overseas students.

Study skills support
Students will learn a range of Personal Transferable Skills, including Study Skills, as outlined in the Programme Specification. Some of this material, e.g. time management is covered in the appropriate Induction Programme. Students are explicitly tutored on their approach to both group and individual projects.

Numeracy support is available through Maths Aid and help with academic writing is available from the Writing Development Centre (further information is available from the Robinson Library).

Academic support
The initial point of contact for a student is with a lecturer or module leader, or their tutor (see below) for more generic issues. Thereafter the Degree Programme Director or Head of School may be consulted. Issues relating to the programme may be raised at the Staff-Student Committee, and/or at the Board of Studies.

Pastoral support
All students are assigned a personal tutor whose responsibility is to monitor the academic performance and overall well-being of their tutees. In addition the University offers a range of support services, including one-to-one counselling and guidance or group sessions / workshops on a range of topics, such as emotional issues e.g. Stress and anxiety, student finance and budgeting, disability matters etc. There is specialist support available for students with dyslexia and mental health issues. Furthermore, the Student Union operates a Student Advice Centre, which can provide advocacy and support to students on a range of topics including housing, debt, legal issues etc.

Support for students with disabilities
The University's Disability Support Service provides help and advice for disabled students at the University - and those thinking of coming to Newcastle. It provides individuals with: advice about the University's facilities, services and the accessibility of campus; details about the technical support available; guidance in study skills and advice on financial support arrangements; a resources room with equipment and software to assist students in their studies.

Learning resources
The University's main learning resources are provided by the Robinson and Walton Libraries (for books, journals, online resources), and Information Systems and Services, which supports campus-wide computing facilities.

All new students whose first language is not English are required to take an English Language Proficiency Test. This is administered by INTO Newcastle University Centre on behalf of Newcastle University. Where appropriate, in-sessional language training can be provided. The INTO Newcastle University Centre houses a range of resources which may be particularly appropriate for those interested in an Erasmus exchange.

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

Module reviews
All modules are subject to review by questionnaires which are considered by the Board of Studies. Changes to, or the introduction of new, modules are considered at the Board of Studies and/or the School Teaching and Learning Committee. Student opinion is sought at the Staff-Student Committee and/or the Board of Studies. New modules and major changes to existing modules are subject to approval by the Faculty Teaching, Learning and Student Experience Committee.

Programme reviews
The Board of Studies conducts an Annual Monitoring and Review of the degree programme

and reports to Faculty Teaching, Learning and Student Experience Committee. The FTLSEC takes an overview of all programmes within the Faculty and reports any Faculty or institutional issues to the University Teaching, Learning and Student Experience Committee.

External Examiner reports
External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Teaching, Learning and Student Experience Committee. External Examiner reports are shared with institutional student representatives, through the Staff-Student Committee.

Student evaluations
All modules, and the degree programme, are subject to review by student questionnaires. Informal student evaluation is also obtained at the Staff-Student Committee, and the Board of Studies. The results from student surveys are considered as part of the Annual Monitoring and Review of the programme and any arising actions are captured at programme and School / institutional level and reported to the appropriate body.

Mechanisms for gaining student feedback
Feedback is channelled via the Staff-Student Committee and the Board of Studies.

Faculty and University Review Mechanisms
The programme is subject to the University's Internal Subject Review process. Every six years degree programmes in each subject area are subject to periodic review. This involves both the detailed consideration of a range of documentation, and a one-day review visit by a review team which includes an external subject specialist in addition to University and Faculty representatives. Following the review a report is produced, which forms the basis for a decision by University Teaching, Learning and Student Experience Committee on whether the programmes reviewed should be re-approved for a further six year period.

Accreditation reports
None of the programmes are accredited.

16 Regulation of assessment

Pass mark
The pass mark is 50%

Course requirements
Progression is subject to the University's Masters Degree Progress Regulations, Taught and Research and Examination Conventions for Taught Masters Degrees. Limited compensation up to 40 credits of the taught element and down to a mark of 40% is possible and there are reassessment opportunities, with certain restrictions.

The University employs a common marking scheme, which is specified in the Taught Postgraduate Examination Conventions, namely:

Summary description applicable to postgraduate Masters programmes		**Summary description applicable to postgraduate Certificate and Diploma programmes**	
<50	Fail	<50	Fail
50-59	Pass	50 or above	Pass
60-69	Pass with Merit		
70 or above	Pass with Distinction		

Role of the External Examiner
An External Examiner, a distinguished member of the subject community, is appointed by Faculty Teaching and Learning Committee, following recommendation from the Board of Studies. The External Examiner is expected to:

i. See and approve assessment papers
ii. Moderate examination and coursework marking
iii. Attend the Board of Examiners
iv. Report to the University on the standards of the programme

In addition, information relating to the programme is provided in:

The University Prospectus: http://www.ncl.ac.uk/postgraduate/

The School Brochure http://www.ncl.ac.uk/marketing/services/print/publications/ordering/

Degree Programme and University Regulations: http://www.ncl.ac.uk/regulations/docs/

The Degree Programme Handbook

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided. The accuracy of the information contained is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Annex

Mapping of Intended Learning Outcomes onto Curriculum/Modules

A1	An advanced knowledge and understanding of the theoretical background necessary to use modern GIS technologies and remote sensing for environmental resource assessment in a range of ecosystems from the boreal and temperate zones to the tropics	**BIO8014**; *ACE8028*
A2	An understanding of the main components of the environmental resource base, including soils, vegetation, hydrology and animal populations	**ACE8028;ACE8045; ACE8030***; ACE8060; ACE8061*
A3	an understanding of the principles, applications and limitations of environmental impact assessment	**BIO8014**
A4	An understanding of the principles, applications and limitations of scientific environmental survey and of appropriate analytical and experimental techniques for analysing components of (agro) ecosystems	**ACE8045; ACE8030; ACE8028**
A5	An understanding of appropriate quantitative techniques, experimental design and data analysis	**ACE8022;**
A6	An advanced knowledge and understanding of a range of appropriate optional subjects to suite personal interests and career positioning including: sustainable development; forest and woodland management; habitat mapping and ecosystem management; climatic and environmental change.	*ACE8021; ACE8024; ACE8041; ACE8049; BIO8004; BIO8006*
B1	Research and critically assess and monitor the functioning and management of natural and managed ecosystems within an interdisciplinary, holistic framework; to analyse the role of edaphic, biological, climatic and hydrological factors; and to assess the impact of human-induced development on the natural environment	**ACE8028; BIO8014; ACE8021; ACE8030**; *ACE8049*
B2	ability to use modern GIS and remote sensing techniques in environmental resource assessment and to interpret such data to develop appropriate management systems for the sustainable use and conservation of environmental resources	**BIO8014; ACE8028; ACE8030**
B3	Ability to assess the sustainability of a range of agricultural and environmental management systems, including techniques for the development of indicators, benchmarks and critical thresholds, and to incorporate concepts of sustainable development into all stages of project management	**ACE8021;** *ACE8049;*
B4	Practical experience in modern environmental survey techniques, experimental design, modelling and analytical techniques in a range of appropriate disciplines, and the ability to critically	**ACE8045; ACE8030; ACE8022; ACE8028; BIO8014;** *; ACE8024; BIO8004*

	assess the data generated by these techniques and to present and summarise the results in professional reports	
B5	Ability to plan a research project and to develop a logical framework for funding of a sustainable development project proposal	**ACE8021; ACE8093**
B6	Practice a range of self-selected subject-specific specialised skills appropriate for specific career goals	*ACE8021; ACE8024; ACE8041; ACE8049*
C1	Ability to use modern GIS and remote sensing techniques in environmental resource assessment and to interpret such data to develop appropriate management systems for the sustainable use and conservation of environmental resources	**BIO8014; ACE8028; ACE8030;**
C2	Critically evaluate the sustainability of agricultural and environmental management systems and have a holistic awareness of current thinking and practice in development	**ACE8021;** *; ACE8024; ACE8049;*
C3	Develop logical thinking and a structured approach to problem-solving, using and developing computer models where appropriate	**ACE8021; ACE8028;**
C4	Comprehend and critically interpret a range of environmental and ecological data, present and summarise such data to critically assess its significance, using statistical techniques where appropriate, and produce a reasoned argument	**ACE8022; ACE8030; ACE8028;** BIO8004; BIO8006
C5	Formulate and design environmental and ecological surveys and develop integrated project proposals against different types of objectives	**ACE8045; ACE8030; ACE8028; ACE8021; ACE8093;**
C6	Formulate and test hypotheses using logical and consistent quantitative or qualitative criteria	**ACE8022; ACE8028; BIO8014**
D1	Communicate conclusions clearly to specialist and non-specialist audiences	**ACE8028; ACE8021; ACE8030;** *ACE8024; BIO8004*
D2	plan, organise and prioritise work activities in order to meet deadlines	
D3	show originality and initiative in tackling and solving problems	
D4	act autonomously in planning and implementing tasks at a professional or equivalent level	
D5	take personal responsibility to independently advance their knowledge and understanding, and to develop new skills to a high level	
D6	use library and other information sources skilfully and appropriately	All modules
D7	use IT resources skilfully and appropriately	All modules
D8	to make decisions in complex and unpredictable situations	**ACE8030; ACE8045**