UNIVERSITY OF
NEWCASTLE UPON TYNE

FACULTY OF
SCIENCE, AGRICULTURE & ENGINEERING

DEGREE PROGRAMME SPECIFICATION
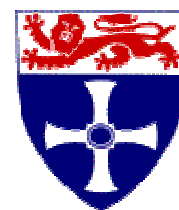
1.	**Awarding Institution**	University of Newcastle upon Tyne
2.	**Teaching Institution**	University of Newcastle upon Tyne
3.	**Final Award**	MSc
4.	**Programme Title**	Sustainable Land Management and Rural Development
5.	**Programme Accredited by:**	N/A
6.	**UCAS Code**	N/A
7.	**QAA Benchmarking Group(s)**	N/A
8.	**Date of production/revision**	1st December 2004

9. Programme Aims:

The primary educational purposes of this programme are to provide biology, agriculture, geography, earth science, environmental science and other natural science graduates with the theory and practice of scientifically assessing and managing land resources within an integrated environmental and development framework, with emphasis on sustainable rural development. The course will develop an interdisciplinary knowledge/technical skills base in soils, land use, sustainable livelihood analysis, and relevant aspects of soil and water conservation and environmental and rural resource economics, adopting a systems perspective for those interested in research, development and/or extension. Problems of soil and water management, land degradation and sustainability issues will be addressed from the farm to the catchment scale, with opportunities for specialisation in areas such as tree growth and management; land reclamation; land management in organic systems, integrated ecosystem management, and soils and sustainable farming systems in either tropical or temperate environments. Practical techniques are developed through field courses and the practical project. The overall aim is to offer students from a wide range of scientific backgrounds a systematic integrated approach so that appropriate land use technologies can be based on sustainable utilisation of soils and water resources leading to employment in policy making, advising and extension in sustainable land management and rural development. 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. The training will provide candidates with an appropriate but flexible knowledge and technical skills base required for them to follow successful careers in agricultural research or extension, environmental management and rural development, with European or overseas employment opportunities. It also forms an excellent holistic introduction to applied soil and land resource science for those with little previous experience wishing to follow a research or development oriented career path in this field.

Specifically, the course aims to provide an advanced understanding of:
(a) the assessment of land and water resources considering soils and hydrology in both natural and managed ecosystems and the sustainability of different land/habitat management systems;
(b) appropriate quantitative skills and a background to experimental design and data analysis;
(c) the principles of economic analysis as applied to environmental issues and the management of rural resources;
(d) the assessment of the sustainability of land use practices in the context of environmental change and sound sustainable development;
(e) the analysis of farming systems and agroecology in relation to sustainability and natural ecosystems;
(f) the principles and practices of soil and water conservation in vulnerable environments;
(g) the conceptual and analytical techniques necessary for understanding and evaluating sustainability of rural livelihoods

(h) a range of appropriate optional subject specialisations to suit personal interests and career positioning including: land reclamation; soil fertility in organic systems; sustainable land management; weed control; tropical environments, ecology and land use; trees- growth, management and environmental impacts; ecosystem management; wildlife conservation policy and practice; GIS and remote sensing; environmental systems modelling; and field techniques in environmental science.

In addition to these academic and technical skills, the course aims to equip its graduates with a suite of key skills including the ability to communicate effectively, the ability to employ IT and library resources appropriately, the ability to prioritise work and to meet deadlines, the ability to work alone and with others, and the ability to use initiative and to solve problems.

The course will address the needs of employers such as national environmental and hydrological agencies like the UK Environment Agency, departments of agricultural extension and rural development both overseas and in Europe, international development agencies such as the UK the Department for International Development (DFID), university departments and research institutes, non-governmental organisations (NGOs) in agricultural and rural development or sustainable land and environmental management, and international agricultural, hydrological and environmental consultancies. These organisations need suitably trained staff with a specialised interdisciplinary background to implement their research and development programmes. Graduates will be suitable employees because they will have:
(a) a systematic understanding of soil and hydrological processes and their influence on land and water resources, and a critical awareness of contemporary sustainability and conservation issues in land, water and environmental management;
(b) an understanding of economic theory and analytical techniques appropriate to understanding issues affecting sustainable development in the rural environment;
(c) originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to develop effective management plans for sustainable land and water management;
(d) 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.

The programme will enable students to meet the Masters level (M, level 4) of the QAA framework for higher education qualifications for England, Wales and Northern Ireland.

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10. Intended Learning Outcomes; Teaching and Learning Strategies and Methods; Assessment Strategies and Methods

A Knowledge and understanding
A1   an advanced systematic and critical understanding of soils and their environmental/ecological relationships, land resource assessment principles, and the potential behaviour and conservation of soil and water resources under different land/environmental management systems

A2   a critical awareness and basic understanding of economic principles with particular reference to the environment and rural resources

A3   a critical awareness of contemporary issues of sustainability and environmental change in the context of agricultural development and environmental management

A4   an advanced systematic and critical understanding of farming systems in relation to their sustainability and their interaction with natural ecosystems and the agricultural economy and of appropriate analytical and experimental techniques for analysing agroecosystems

A5   an understanding of the application of a systems approach to analysing and rural environments, resources and sustainable livelihoods;

A6   an advanced knowledge and understanding of a range of appropriate optional subjects to suite personal interests and career positioning including: environmental systems and modelling; environmental survey techniques; tropical environments, ecology and land use; ecosystem management; land reclamation; sustainable land management; trees - growth and management; and GIS and remote sensing.

Teaching Strategy
A foundation knowledge and understanding of quantitative techniques, data analysis, and design (A4) underpins the specialist material of the degree programme and is taught via lectures, practical and computer classes, and case studies in a specific compulsory module AES827, with an option to extend this to environmental systems modelling (AES828) in Semester 1. Specialist knowledge and understanding of the core material is taught via lectures (A1-A5), practical classes (A1), seminars (A2-A5), case studies (A1-A5) and field classes (A1) in the compulsory modules AGR805, AES813, AES829, AGR804, AEF873 and AEF806. The 80-credit MSc research project AES893 enables 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 field techniques employed in professional environmental surveys for assessing soil conditions/variability, landscape hydrology, vegetation and

wildlife ecology (AES835), tropical environments and land resource management (AES838), environmental systems modelling (AES828), soil fertility management in organic systems (AGR335), sustainable land management in a European context (AGR330), tree growth, management and the impacts of trees on the environment (AES845), ecosystem management (AES854), impact of GMOs on crop protection (AES831), or techniques of weed control (AES840). The Diploma Dissertation AES794 (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, A4, A6) in AES827, AGR805, AES828, AES835, AES838 and AES845, seminars (A1-A6) in AES813, AGR804, AES829, AES838, AES845, AES831, AEF806 and AEF873 case studies (A1-A5, A6) in AGR804, AGR805, AES829, AES813, AES838, AEF806, or the Diploma Dissertation (AES794) for Diploma candidates (A1-A6), with active participation in fieldwork and a major research project (A1-A6) leading to the MSc thesis AES893 for MSc candidates, with some workshops (A6) and independent problem solving exercises (A4-A6) in AES827, AES828 and AES835.

Assessment strategy

Assessment of some modules (A1, A3 and A5) is entirely by in-course assessed work including practical class exercises , seminars, case studies, and problem solving exercises (AES827, AES829, AES813, AES845, AES854, AES831, AES846, AES840 and AEF806. Assessment of specialist knowledge and understanding is by formal unseen examinations (AGR804, AGR805, AEF873, AGR330, AGR335, AES835) 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 (AGR804, AGR805, AES829, AGR330, AGR335, AEF873, calculation (AES828), multi-part questions (AGR804, AGR805, AES835). Assessed coursework comprises practical exercises (AES827, AGR805, AES828, AES835, AES838, AES845, and AES846), seminar presentations (AGR804, AES829, AES813, AES838, AES845, AES831 and AEF873), case studies (AGR805, AES829, AES813, AES838, AES837, AEF806), literature reviews, scientific/technical reports and essays (AGR804, AES838, AES831, AES845, AES835, AEF873, AEF806, AES893 and AES794. Field class and other reports are also assessed (A4) for AGR805 and AES835. 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, or the Diploma Dissertation for Diploma candidates (A1-A6), and (at the discretion of the External Examiner) by *viva voce* examination.

B   Subject –specific/professional skills

A successful student will be able to:

B1   research and critically assess rural resources and quantitatively evaluate key environments and human livelihood strategies using a systems approach within an interdisciplinary, holistic framework.

B2   assess soil and water resources and their potential under different land management systems, to analyse their function in relation to land management units, habitats or ecosystems from the local to the catchment level, and to consider appropriate management systems for their sustainable use;

B3   assess the sustainability of a range of agricultural, hydrological 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   research and critically assess the functioning and management of contemporary farming systems within an interdisciplinary, holistic framework and to analyse their interaction with edaphic, biological, climatic and hydrological components of agroecosystems and with socio-economic conditions, and their impact on the natural environment;

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

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

Teaching Strategy

Research, classification and critical assessment skills (B1- B4) are taught via lectures, seminars, case studies and practical classes within compulsory modules AGR804, AGR805, AEF873, AEF806, AES813, AES829 and AES835, with opportunities to specialise further in optional modules AES838, AES845, AES854, AES840 and AES831. 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 AES827 and AGR805, with further opportunities in optional modules AESS828 and AES835. These skills are consolidated by more advanced training in the lectures, practical classes and case studies of subject-specific specialised modules. Project planning skills (B5) are introduced as practical exercises to produce a logical framework and a full project proposal in the sustainable development module (AES829). Further specialised skills (B6), such as techniques in environmental survey (AES835), tropical land resource assessment (AES838), land reclamation (AGR806), siliviculture, tree mensuration and woodland conservation (AES845), ecosystem management (AES854), or weed control (AES840) 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

(AES893), 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 (AES794).

Learning Strategy
Independent reading of recommended references is important in understanding how knowledge is applied and techniques used (B1-B5). 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 AES827, AGR805 and AGR804 and later in Phase 2 modules AES829 and AES813, and through participation in field sampling, analysis and data interpretation in AGR805 and in the specialised field techniques in environmental survey optional module AES835. 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 AES893.

Assessment strategy
Formal examinations (B1, B2, B4) are used to assess some subject specific/professional skills, particularly when additional reading reinforces learning (AGR804, AGR805, AEF873). However, most of these skills are assessed by coursework reports and presentations (B1-B6). Some of the skills (B1-B6) are further practiced and assessed by means of the MSc thesis, (AES893) or the Diploma Dissertation (AES794), and (at the discretion of the External Examiner) by *viva voce* examination.

C   Cognitive skills
A successful student will be able to:
C1   critically evaluate current research and advanced scholarship in the area of land management and rural development
C2   critically evaluate the sustainability of land management systems and have a holistic awareness of current thinking and practice in rural development
C3   develop logical thinking and a structured approach to problem-solving
C4   comprehend and critically interpret a range of environmental, agro-ecological, and socio-economic 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 land resource, agro-ecological, socio-economic and sustainable livelihood surveys and develop integrated project proposals against different types of objectives
C6   formulate and test hypotheses using logical and consistent quantitative or qualitative criteria

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 (AES827, AGR805, AEF873), problem-solving exercises (AES827,and module option AES828) , case studies (AGR804) and field classes (AGR805 and optional module AES835). They are progressed in the specialised compulsory modules and in optional specialised modules in Phase 2, where they are applied to specific research or management issues, sometimes in a field-based environment (C5). Cognitive skills C1 and C2 are particularly developed in specific specialised compulsory modules through lectures, seminars (AGR804, AGR805, AES829, AES813, AEF806 and AEF873), and case studies (AGR805, AES829, AES813, AEF806) involving literature reviews, guided reading and critical analysis of presentations. The MSc project and thesis (AES893) allows cognitive skills C1-C6 to be applied to a specific research problem or issue guided by individual supervision,. The Diploma Dissertation (AES794) 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 AES829 (C2); through developing computer models to simulate environmental systems in optional module AES828 (C3); through experience of case studies, course work and discussion following seminars (C1-C6) in (AGR804, AES829, AES813, AEF806, AES838, AES845, AES831 and AEF873) ; and through designing a sampling and analysis strategy and analysing the data from fieldwork and reflecting on field exercises (C4-C5) in AGR805, AEF806 and optional module AES835. The design and practice of the MSc research project AES893 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 AES794 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 AGR804, AGR805, AEF873 and optional modules AES838, AGR330 and AGR335, by seminars in AGR804, AES829, AES813, AES838, AES845, AES831 and AEF873, by case study reports (C1-C4) in

AGR805, AES829, AES813, AES838 and AEF806, by survey or professional reports in AGR805, AES835, AES845, by project proposals (AES829, AES893) and by the MSc thesis AES893 (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.

D   Key (transferable) skills
A successful student will 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 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 (AGR804, AES829, AES813, AES838, AES845, AES831 and AEF873). All skills (D1-D8) are important in planning, carrying out, presenting and being examined in the research project and MSc thesis AES893. Field classes (D1-D4) in AES835, AGR805 and AES845, development of project proposals (D1, D3-D5, D7 and D8) in AES829, AES893 and independent problem solving (D2-D8) in AES827, AES828, AES835 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 (AGR805, AES835, AES845), case studies (D1-D4, D6-D8)) in AGR805, AES829, AEF873, AES813, AES838, AEF806, the MSc research project (AES893) or Diploma Dissertation (AES794) (D1-D8), seminars (D1, D3-D5, D7) in AGR804, AES829, AES813, AES838, AES845, AES831 and AEF873, problem solving exercises in AES827, AES828, AES835 and logical framework development in AES829 (D2-D8) and communicating information in short oral presentations in AGR804, AES829, AES813, AES838 and the MSc project (D1).

Assessment strategy
Key skills are rarely assessed by formal examination (D5-D7). Scientific/technical reports (D1-D8) in AGR805, AES835, AES829, AES813, AES845, project proposals (AES893, AES829), a logical framework for a development project (AES829), the MSc thesis (AES893) and oral examination, or the Diploma Dissertation (AES794), and other elements of assessed coursework (D1-D4, D6-D8) are the main methods of assessment. Assessed seminar presentations seminars (AGR804, AES829, AES813, AES838, AES845, AES831 and AEF873) test oral communication and presentation skills, as does the final *viva voce* examination of the MSc thesis. (D1).

11   Programme Features, Structure and Curriculum

A   Programme Features

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 100 credits in the taught component, with approximately 60 credits in MSc Phase 1 (September-January) and 40 credits in MSc Phase 2 (January-March). A research project worth a further 80 credits, is undertaken in MSc Phase 3 (April-September)**.** Of the taught modules, 70 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. 60 or 70 credits of taught modules are normally taken during Semester 1 (MSc Phase 1) and most are examined in January. These consist mainly of compulsory modules (40 credits), with 20 or 30 credits of module options that may include a 20 credit field techniques in environmental survey module. Further compulsory specialist modules (30 credits) and module options (10 or 20 credits) are given over a shorter 8 week period in Semester 2 (MSc Phase 2). All taught modules given in MSc Phase 2 are assessed by coursework only**.** The MSc thesis has to be submitted by 31 August.

Students will have to satisfy the standard University regulations that apply to MSc degrees in Agricultural and Biological Sciences. 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.

The MSc degree utilises a wide range of environmental, agricultural, economic and social expertise available in the Faculty of Science, Agriculture and Engineering. It is innovative in adopting an holistic, scientific, systems-based, approach taught across Schools, combining agricultural, environmental and economic approaches to sustainable land management and rural development from catchment to farm scale that is biophysically sound, ecologically sensitive and socio-economically acceptable, as judged from a sustainable livelihoods perspective. Additionally it offers opportunities for students to develop skills in framing sound rural development projects and to understand how their expertise might be used in subsequent employment.   The MSc project provides a unique opportunity for students to gain first-hand practical experience, much in demand from employers in research, development and consultancy, and to apply their newly learnt skills in field situations. In this context, students usually undertake their project with an existing research group, or in collaboration with an overseas research institution. Practical skills are also emphasised in laboratory classes and field courses, with options in environmental survey techniques.

B   Programme Structure

Four compulsory modules (40 credits) are given during Phase 1 (September-January). These include AGR805 Environmental Assessment: Land and Water Resources (10 credits); AGR804 Farming Systems and Agroecology (10 credits) and AEF873 Environmental and Rural Resource Economics (10 credits) that form key components of the programme.   These progress to further compulsory modules in Sustainable Development and Environmental Change (AES829), Sustainable Livelihoods Analysis (AEF806) and Soil and water Conservation (AES813) in Phase 2 (January-March). 20 or 30 credits of specialist optional modules are normally taken in Phase 1 and another 10 or 20 credits in Phase 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. AES827 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).   AGR805 Environmental Assessment: Land and Water Resources (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 (A1-A4, B2, B4, C1, C3, C5).   AEF873 Environmental and Rural Resource Economics provides students having little or no economics training with a basic understanding of economic principles with particular reference to the rural environment (A2, B1, C1, C4, D3).

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. AES829 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 (A1, A3, B1, B3, B5, C2, D2, D4, D8).
AEF806 introduces the principles of, and a framework for, 'Sustainable Livelihoods Analysis' in the context of diversification and rural change, including aspects of poverty and income distribution, farm productivity, sustainablility and gender issues, and examines how these principles are applied to practical development issues and problems (A3-A5, B1,B3, B4, C2-C5, D3-D5). AES813 Soil and Water Conservation examines the need for improved soil and water conservation at a global scale and describes conservation measures that might be used to enable the assessment of farming operations with a view to improving the sustainable management of soil and water resources (A1, B2, B4, C1-C3, C5-C6, D3, D4, D8). AGR805 Farming Systems and Ecology (10 credits) examines the interface between farm management practices, techniques and technologies and the environment from a systems perspective and considers the degree to which farming systems are shaped by agro-ecological constraints and/or socio-economic factors (A1-A3, B1-B3, C1-C2, D6, D8).

Optional modules allow students to develop specialised interests and to enhance their employment opportunities in specific fields of sustainable land management and rural development. One particular feature of the programme is the opportunity to specialise in the tropics through opting for AES838 Tropical Environments, Ecology and Land Use (10 credits). This module reviews the environmental characteristics of the major tropical ecosystems, their vegetation, soils and land use systems, treating soils as components of both natural and managed ecosystems, and assesses the sustainability of land use practices and threats to ecological stability under low input and more intensive land management systems (A2-A4, B1-B4, C1-C2, C4-C5, D1-D6). AES835 Field Techniques in Environmental Survey (20 credits) provides students with the theoretical background and field techniques to design and carry out integrated environmental, ecological, soils and hydrological surveys. It includes a 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, CC4-C6, D1-D8). Other module options include a range land management topics including: AGR806 Land Reclamation; AGR335 Soil Fertility in Organic Systems; AGR330 Sustainable Land Management; AES828 Environmental Systems Modelling; and more ecologically orientated options including: AES854 Ecosystem Management; AES 845 Trees, Growth and Management; AES 840 Weeds and Their Control; and AES813 Genetically Modified Organisms: impact, evaluation and crop protection (A6, B6, C1-C6, D1-D8).

C   Programme Curriculum

The curriculum for this MSc programme, and for related programmes in 'Agricultural and Environmental Science' and 'Environmental Resource Assessment' appear together in the University Regulations as shown below.

Agricultural and Environmental Science MSc: 5021; Diploma: 3307
Environmental Resource Assessment MSc: 5023; Diploma: 3302
Sustainable Land Management and Rural Development MSc: 5025; Diploma: 3311

1. (a) All candidates on all three degree programmes shall take the following compulsory foundation modules:

Code	Credits	Descriptive title
AGR805	(10)	Environmental Assessment
AES827	(10)	Quantitative Techniques, Experimental Design and Data Analysis
AES829	(10)	Sustainable Development and Environmental Change

(b) Candidates on the Environmental Resource Assessment degree in addition to the compulsory foundation modules listed in 1(a) above must also take the following compulsory modules:

Code	Credits	Descriptive title
AES806	(10)	GIS and Remote Sensing
AES835	(20)	Field Techniques in Environmental Survey
AES828	(10)	Environmental Systems and Modelling

(c) Candidates on the Agricultural and Environmental Science degree in addition to the compulsory foundation modules listed in 1(a) above must also take the following compulsory modules:

Code	Credits	Descriptive title
AES835	(20)	Field Techniques in Environmental Survey
AES828	(10)	Environmental Systems and Modelling

AGR804 (10)   Farming Systems and Agroecology

(d) Candidates on the Sustainable Land Management and Rural Development degree in addition to the compulsory foundation modules listed in 1(a) above must also take the following compulsory modules:

Code	Credits	Descriptive title
AES835	(20)	Field Techniques in Environmental Survey
AES836	(10)	Land-Water Interface
AES838	(10)	Soils in the Tropical Environment
AEF806	(10)	Sustainable Rural Livelihoods Analysis
AES813	(10)	Soil and Water Conservation
AES873	(10)	Environmental and Rural Resource Economics
AGR804	(10)	Farming Systems and Agroecology

(e) All candidates shall select, subject to the approval of the Degree Programme Director, further modules to a total value of 30 credits, normally chosen from the following:

Code	Credits	Descriptive title
AES845	(10)	Trees: Growth, Management and Environmental Impacts
BIO803	(10)	Wildlife Conservation: Policy and Practice
AES831	(10)	Genetically Modified Organisms: Impact Evaluation and Crop Protection
AES854	(10)	Ecosystem Management
AES837	(10)	Pesticides: Uses and Environmental Properties
AES838	(10)	Tropical Environments, Ecology and Land Use
AES846	(10)	Techniques in Pest Management
AES856	(10)	Ecological Survey and Identification Field Class
AES840	(10)	Weeds and Their Control
AGR802	(10)	Tropical Animal Production
AGR330	(10)	Sustainable Land Management
CIV958	(10)	Hydroecology
AGR335	(10)	Soil Fertility Management in Organic Systems
AGR806	(10)	Land Reclamation

Students may also, subject to the approval of the Degree Programme Director, elect to choose optional modules from the lists given in 1(b), 1(c) and 1(d) depending on their degree programme.

Note: not all modules will necessarily be available in every year. Alternative modules may, subject to the approval of the Degree Programme Director, be substituted for any of the optional modules listed.

(f) All candidates shall undertake the following 80 credit research project:

AES893 (80) MSc Thesis

Details of the assessment are provided in the Degree Programme Handbook.

2. MSc programmes are normally 12 months' full-time study but with the permission of the Degree Programme Director, can also be taken part time.

3. Diploma programmes normally require nine months' full-time study and require the candidate to undertake study equivalent to 120 credits. Diploma students would not do a research project but, with the approval of the Degree Programme Director, would be expected to take additional optional modules from the lists given in paragraph 1(e) above, or undertake a short, library-based dissertation (AES794). With the permission of the Degree Programme Director, the Diploma programme may also be taken part time.

	Development of specific Intended Learning Outcomes occurs through the following modules (compulsory modules in bold text, optional modules in normal, italic text)	
A1	An advanced systematic and critical understanding of soils and their environmental/ecological relationships, land resource assessment principles, and the potential behaviour and conservation of soil and water resources under different land/environmental management systems	**AGR805**; **AES813**; *AES838*
A2	A critical awareness and basic understanding of economic principles with particular reference to the environment and rural resources	**AEF873**
A3	A critical awareness of contemporary issues of sustainability and environmental change in the context of agricultural development and environmental management	**AES829**; *AES838; AGR804;AEF806*
A4	An advanced systematic and critical understanding of farming systems in relation to their sustainability and their interaction with natural ecosystems and the agricultural economy and of appropriate analytical and experimental techniques for analysing agroecosystems	**AGR804; AEF806;** *AES838; AES835*
A5	An understanding of the application of a systems approach to analysing rural environments, resources and sustainable livelihoods	**AEF806; AES893**
A6	An advanced knowledge and understanding of a range of appropriate optional subjects to suite personal interests and career positioning including: tropical environments, ecology and land use; environmental survey techniques; trees, growth, management and environmental impacts; environmental systems modelling; weed control; GMOs; tropical animal production; ecosystem management; land reclamation; soil fertility in organic systems; sustainable land management	*AES838;* AES835; *AES845; AES828; AES840; AES831; AES854; AGR806; AGR335; AGR330;*
B1	Research and critically assess rural resources and quantitatively evaluate key environments and human livelihood strategies using a systems approach within an interdisciplinary, holistic framework.	**AGR804; AGR805; AEF873; AEF806;** *AES838; AGR806*
B2	Ability to assess soil and water resources and their potential under different land management systems, to analyse their function in relation to land management units, habitats or ecosystems from the local to the catchment level, and to consider appropriate management systems for their sustainable use	**AGR805;AES813; AES829; AGR804; AEF806; AEF873** *AES838; AGR806; AGR330; AGR335; AES835*
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	**AES829; AGR804; AEF806**; *AES838; AGR330; AGR335*
B4	Ability to research and critically assess the functioning and management of contemporary farming systems within an interdisciplinary, holistic framework and to analyse their interaction with edaphic, biological, climatic and hydrological components of agroecosystems and with socio-economic conditions, and their impact on the natural environment	**AGR804; AGR805; AES829; AES813;** *AES838; AEF873; AEF806*
B5	Ability to plan a research project and to develop a logical framework for funding of a sustainable development project proposal	**AES829; AES893; AES794**
B6	A range of subject-specific specialised skills appropriate for specific career goals	**AES893; AES794;** *AES838; AES835; AES845; AES840; AES831; AES854; AEF873; AGR806; AGR335; AGR330*
C1	Critically evaluate current research and advanced scholarship in the area of land management and rural development	**AGR804; AGR805;AEF806; AEF873; AES893;** *AES854; AES845; AGR806; AGR330; AGR335*
C2	Critically evaluate the sustainability of land management systems and have a holistic awareness of current thinking and practice in rural development	**AGR804; AES829; AEF806; AEF873;** *AES838; AES845; AES854; AGR330*
C3	Develop logical thinking and a structured approach to problem-solving	**AES827; AEF806; AES813; AGR805; AES893;** *AES828;*

C4	Comprehend and critically interpret a range of environmental, agro-ecological, and socio-economic data; present and summarise such data to critically assess its significance, using statistical techniques where appropriate, and produce a reasoned argument	**AES827; AGR805; AEF873; AES893; AES813;** *AES838;AGR806; AES840; AES831; AES854*
C5	Formulate and design environmental and land resource, agro-ecological, socio-economic and sustainable livelihood surveys and develop integrated project proposals against different types of objectives	**AGR804; AGR805; AES829; AEF873; AES893; AEF806;** *AES835;*
C6	Formulate and test hypotheses using logical and consistent quantitative or qualitative criteria	**AES827; AGR805; AGR804; AEF873; AEF806; AES893; AES813;** *AES840; AES831*
D1	Communicate conclusions clearly to specialist and non-specialist audiences	**AGR804; AGR805; AES829; AES835; AES893; AEF806;** *AES838; AES845;* **AES813***; AES831;*
D2	plan, organise and prioritise work activities in order to meet deadlines	**AGR804, AGR805, AES827,** *AES828,* **AES829,** *AES835,* **AES893**
D3	show originality and initiative in tackling and solving problems	**AES827, AEF806;** *AES828, AES835,* **AES893**
D4	act autonomously in planning and implementing tasks at a professional or equivalent level	**AGR805, AES829, AES835**
D5	take personal responsibility to independently advance their knowledge and understanding, and to develop new skills to a high level	**AGR804, AGR805, AES829, AES813; AEF806; AES835, AES893**
D6	use library and other information sources skilfully and appropriately	All modules
D7	use IT resources skilfully and appropriately	**AGR805, AES827,** *AES828,* **AES829,** *AES835,* **AES893, AES794,** *AES838*
D8	to make decisions in complex and unpredictable situations	**AEF806; AES893**

12   Criteria for Admission:

GCSEs required   N/A

A-Level Subjects and Grades   N/A

Alternative 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
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.

Arrangements for non-standard entrants
Applicants who hold non-standard qualifications, and/or have relevant experience, will be considered on an individual basis.

Any Additional Requirements.
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.

13   Support for Students and their Learning:

Induction
The first week of the first term/semester is an Induction Week with no formal teaching. During this period all students will be given detailed programme information relating to their Stage and the timetable of lectures/practicals/labs/ tutorials/etc. In

particular all new students will be given general information about the School and their course, as described in the Degree Programme Handbook. The International Office offers an additional induction programme for overseas students (see http://www.ncl.ac.uk/international/coming_to_newcastle/orientation.phtml).

Induction includes

- An introduction to the modular MSc and Diploma Programme from the Degree Programme Director and meeting with other staff and students.

- An interview with the degree Programme Advisor/Personal tutor.
- Registration in the Agricultural and Environmental Science Department with the Degree Programme Director – collect Degree Programme Handbook etc..
- Tour of Department and the City of Newcastle.
- Language Centre test if English is not the students' first language.
- Report to the Registrar's and the Finance Office staff in the University Ballroom to collect Union and Library cards, etc.
- Module selection with Degree Programme Director and/or Advisor/Personal Tutor
- Faculty introduction to services and facilities and Faculty reception.
- Tour of University field stations and/or farms.
- Normally a selected skills audit.
- Library skills session.
- Field excursion to consider techniques in environmental survey as part of the module AES835, or a tour of University field stations and/or farms..

Formal introduction to the use of computers is provided during Induction Week. Students will register for access to the computer system, and receive a personal e-mail address,.

Study skills support

- The Robinson Library houses the major book and journal collection in the University and has a large section dedicated to the biological sciences. These books are located on the fourth floor of the library and the liaison librarian is available on the fourth floor to provide help if necessary. A library card will be issued at the beginning of the academic year. The library has a wide range of library material from 'study skills', 'speed reading', through 'exams' to 'writing essays and dissertations'. These are available on a self study basis and are located on Level 2. There is a range of leaflets describing usage of the library, either as hard copy or through the Library's Web pages. In addition there are private study rooms, general work space and clusters of PCs. A series of Library and information skills workshops will be arranged for the MSc programmes during September and October and will be introduced in a special session during Induction Week (see timetable).
- The University Computing Service provides a large number of 'Common User' computers located in clusters in various buildings around the University. The largest of these clusters is in the Old Library User Area (OLUA) where there is also a member of computing staff available to provide help if required but there are also clusters in the Robinson Library and elsewhere on campus. Access to a machine is *via* a booking sheet located in the cluster room. For PCs, attempts are being made to standardise word processing and spreadsheet software across all Computing Service machines to Word for Windows and Excel but a range of other software is also available for use, e.g. graphics packages, reference managers with some available on the Apple-Mac system. The Computing Service provides help sheets in the use of this software and these can be obtained from the OLUA or from the Computing Service Office in the basement of Claremont Tower. Before using the machines students must register with the Computing Service at the Computing Service Office and obtain a unique identifier and password. The Faculty runs two computing facilities of workstations that are linked to the University Network. One facility, containing 82 workstations, is located in the Centre Block of the 2nd Floor of the King George VI Building and the other, containing 25 workstations, is located in Room 472 of the Ridley Building
- The Language Centre is in the Old Library and provides facilities for learning English and a wide variety of other languages. Overseas students on arrival in Newcastle will be required to take an English language test in the Centre. The results of this test will be used to assess whether further English language training is required. The Language Centre provides this training at specific times of year, however, remedial English classes can be arranged as and when required.
- Some students will already be in jobs, taking secondment to undertake the MSc programme. For others the University provides a Careers Service which is located on the 2nd Floor of the Armstrong Building where advice on all aspects of careers is available. There is a good reference section giving detailed information about potential employers, pamphlets to help you produce good CVs and letters of application, lists of potential vacation employment, etc. In addition, there are a number of Careers Advisors who are available to provide advice, help and guidance throughout your time in Newcastle. Although one Careers Advisor has particular responsibility for the students in theSchools of Biology and of Agriculture, Food and Rural Development, any immediate help required can be obtained throughout the day from whichever Advisor is on Duty and if necessary an appointment can be made to have a longer interview. Full details of all services are available on the University web site. The computer-aided careers guidance system, PROSPECTS PLANNER, is available on open access at reception.

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. A system of regular fortnightly meetings with the Degree Programme Advisor provides and opportunity to discuss progress and option choices.

Pastoral support
All students are assigned a personal tutor whose responsibility is to monitor the academic performance and overall well-being of their tutees. Details of the personal tutor system can be found at http://www.ncl.ac.uk/undergraduate/support/tutor.phtml. In addition the University offers a range of support services, including the Student Advice Centre, the Student Counselling Service, the Mature Student Support Service, and a Childcare Support Officer, see http://www.ncl.ac.uk/undergraduate/support/welfare.phtml.

Support for Special Needs
Support for students with special needs is provided as required and the University's Disability Support Service can be consulted where appropriate. For further details see http://www.ncl.ac.uk/undergraduate/support/disability.phtml.

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, see http://www.ncl.ac.uk/undergraduate/support/acfacilities.phtml.
All new students whose first language is not English are required to take an English Language test in the Language Centre. Where appropriate, in-sessional language training can be provided. The Language Centre houses a range of resources for learning other languages which may be particularly appropriate for those interested in an Erasmus exchanges. See http://www.ncl.ac.uk/undergraduate/support/langcen.phtml.

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14   Methods for Evaluating and Improving the Quality and standards of Teaching and Learning:

Meetings with the Degree Programme Advisor
A system of regular meetings with the Degree Programme Advisor, allows regular monitoring of comment/feedback from students. This may relate to: the course structure; individual modules; teaching techniques; administration of modules; administration of degree programmes; timetables; and efficiency of centralised facilities (such as the library or computing provision).

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 School Teaching and Learning Committee and at the Board of Studies. 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 and learning Committee.

Programme reviews

The Board of Studies conducts an Annual Monitoring and Review of the degree programme and reports to Faculty Teaching and Learning Committee. Both individual modules and the MSc programme are periodically reviewed in the light of the following:
- Student evaluation data
- Feedback from past graduates
- Feedback from the external examiner
- Feedback from the University Annual Monitoring Review
- Feedback from the Internal Subject review
- Feedback from independent Institutional Audit (QAA, HEFCE)
- Relevance of the programme in relation to key issues
- Relevance of progamme in relation to employability of graduates
- Relevance of the programme in relation to funding sources

Committees Responsible for Monitoring and Evaluating Quality and Standards

- Staff/Student Committee

This meets once a term and provides a forum for raising any academic-related concerns. All degree programmes run by the Department are considered. It is also an opportunity for staff to consult students about course developments. Students will need to elect a representative for their degree programme, this person task will be to consult student colleagues and then represent their views at meetings.

- Board of Studies

There is a Joint Board of Studies for the MSc and Diploma degrees taught by the Schools of Agriculture, Food & Rural Development, Biology and Civil Engineering & Geosciences.. It oversees the academic content of the course. The Degree Programme Director chairs this Board and the membership includes those involved in the teaching. It meets approximately once a term. There is student representation on the Board.

- Board of Examiners It is the responsibility of the Board of Examiners to assess students' progress and to recommend the successful award of degrees. There are internal and external examiners for the course.
- School Teaching and Learning Committee
- Faculty Teaching and Learning Committee
- University Teaching Committee

External examiner reports

External Examiner reports are considered by the Board of Studies under Reserved Business, in the absence of the student representatives. The Board responds to these reports through Faculty Teaching and Learning Committee.

Accreditation reports

There is no suitable professional body accrediting programmes of this nature.

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.

Feedback mechanisms

 Feedback to students is effected 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 programme, see
http://www.ncl.ac.uk/internal/academic-quality/qualityhome.htm#2.

15   Regulation of Assessment:

Progress in the taught parts of the course is assessed by continuous assessment and/or by in-course examinations held in January during MSc Phase 1.   The Board of Examiners considers progress at the end of Phase 1, after which students will be advised of their progress. The Board of Examiners advises progress in most of the other taught modules after the end of Phase 2. Individual modules vary in the relative weighting of examination and continuous assessment of course work, which may include practical classes, case studies, seminars or essays. Details are given in the module outlines. Feedback on the quality of submitted coursework will vary according to the type of assignment and is the responsibility of the individual module leaders. It may take the form of written comments or verbal feedback during seminars or tutorials. The MSc project is be assessed by examination of the final MSc consultancy project report (AES 892) at the end of the course in August. MSc candidates are normally required to attend an oral examination in May that covers both their course work and the planning for their project work. For further details see *Regulations for Taught Postgraduate Masters Degrees* under Faculty Regulations for Higher Degrees on the University's Web site http//:www.ncl.ac.uk/calendar/university.regs/

Written Examinations

Candidates will normally be examined by means of two hour examination papers for each of the taught modules taken in Phase 1. Titles of the examinations will be the same as module titles and examination numbers will be the same as module codes. Each examination script submitted is assessed independently by one internal and one external examiner. A second internal examiner may moderate marks. The contribution of the continuous assessment marks to the overall module mark will vary according to each module (see Module Outlines). Examination Timetables will be published by the Examinations Office.

The pass mark for the MSc degree shall be 50% (Table 1) on all papers or their equivalent. Normally there is opportunity to resit failed modules. In the case of failed modules, marks in the range 40-49 shall be condoned in accordance with the Faculty Regulations 6 (i), (ii) and (iii) (***see relevant section of University Calendar 2004-2005; this can be accessed on the University Website given above***). That is, the Board of Examiners may permit a candidate to qualify for the award of MSc provided that

modules with a total value of no more than 40 credits have a mark between 40-49, and the average mark for all modules, including the project report, is at least 50. Candidates who fail to satisfy the Board in the written modular examinations may be awarded a Diploma in accordance with Faculty Regulations 8 (a), (b) or (c). Past examination papers, for the last two years, can be viewed on The School of Biology website: http://www.ncl.ac.uk/biol/

MSc Project Report Examination
Assessment is undertaken by at least two internal examiners, the principal of which is the candidate's supervisor, and the external examiner and considered by the Board of Examiners meeting in September. To satisfy the examiners in the project report, candidates must normally achieve an MSc Pass mark of 50%.

MSc Oral Examination
The oral examination covers all aspects of the course and may be held in May at the time of the interim Board of Examiners Meeting. The Examiners may wish to raise the major questions they have identified in their examination of the taught modules and the candidate's project preparation and engage with the candidate in discussion of them.

Consequences of Failure of MSc Project
In accordance with Faculty Regulations, a candidate who achieves a mark of 40-49 for the assessment of the project report may, at the discretion of the examiners, be permitted to re-submit the report in a revised form for assessment. This must be by such a date as the Board of Examiners shall specify and within 12 months of the date of the original submission. Where a student fails to meet the criteria for the award of a MSc degree in sections 4-7 of the University regulations for Master of Science in the Agriculture and Biological Sciences, the student will be entitled as of right to the award of a Diploma provided that they meet the criteria specified in *Diploma Regulations in Agriculture and Biological Sciences.*

MSc with Merit
MSc degrees may be awarded with merit if, in the opinion of the Examiners, the candidate has achieved an average mark of 60-69 for both written papers and the project report.

MSc with Distinction
MSc degrees may be awarded with distinction if, in the opinion of the Examiners, the candidate has achieved excellence in all components prescribed for the award of the degree, with an average mark of ≥70 for both written papers and the project report.

Assessment Criteria

All postgraduate work is marked on a University scale ranging from 0-100, as explained in the Postgraduate Marking Criteria on the Faculty of Science, Agriculture and Engineering Website at:
http://www.ncl.ac.uk/sage/internal/teaching/admin/exams/index.htm, which sets out the criteria to be used to assign marks. Most postgraduate work will be in three broad categories (Distinction, Merit and Pass) corresponding to First, Upper Second and Lower Second Class work at undergraduate level.

Assessments are made in one of three ways, as is appropriate to the teaching technique:
- marks given to papers sat during the January examination period in Phase 1. Unless stated otherwise on the paper, each answer will be given equal weight.
- marks given to submitted work from laboratory and field classes.
- marks given to assigned work such as projects, case studies, essays or problem solving exercises.
The module description and Module Leader will explain to students what form the assessment will take and the weighting of each separate element.

University General Regulations state that:

'Candidates are responsible for retaining all forms of assessed work returned to them after marking by examiners. Assessed work so retained may be recalled from candidates, if required by external examiners, or for examination review purposes, or for Quality Assessment or Audit purposes.' For MSc examination candidates will submit a dossier of coursework, after marking, for consideration by the external examiner.

Role of the External Examiner
Within the modular structure of the cross-school suite of taught course some modules are common to a number of taught MSc degrees. Therefore, FTC appoints external examiners to both the MSc degree programme and a set of modules, according to

the relevant subject expertise and workload of the External Examiner. The appointment to the degree programme will be to assure the quality of the programme as well as the performance of the students on the programme. The Board of Examiners undertakes the initial allocation of modules to Externals, with FTC acting as an arbiter if required.

The external examiner is a distinguished member of the scientific community whose knowledge covers the range of activities covered by the course. The external examiner is a moderator and to do this he/she:
- Sees and approves examination questions
- Sees examination scripts and comments upon standards of marking
- Sees coursework and comments upon standards of marking
- Examines projects
- Performs *viva voce* examinations of some or all students
- Attends the May meeting of the Board of Examiners
- Reports to the University regarding standards and comparability of standards

16   Indicators of Quality and Standards:

Professional Accreditation Reports
Not applicable

Internal Review Reports
This programme is due for Internal Subject Review in 2007-08 when programmes in the School of Agriculture, Food and Rural development will be reviewed. <See the timetable at http://www.ncl.ac.uk/internal/academic-quality/schdlisr.doc> However, the programme is reviewed annually as part of the 'Annual Monitoring Review' process, which is subsequently approved by Faculty Teaching and Learning Committee.

Previous QAA Reports
This programme received a QAA Subject Review in April 1998 and achieved a score of 22 out of 24.

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.

17   Other Sources of Information:

The University Postgraduate Prospectus (see http://www.ncl.ac.uk/postgraduate/)
The University and Degree Programme Regulations for Higher degree Programmes in Agriculture and Biological Sciences (see http://www.ncl.ac.uk/calendar/pdf/uniregs.pdf and http://www.ncl.ac.uk/calendar/sae/)
The University's web page http://www.ncl.ac.uk/external.phtml
The School of Biology web page: http://www.ncl.ac.uk/biol/
The School of Agriculture and Food and Rural Development
          web page: http://www.ncl.ac.uk/afrd/
The Degree Programme Handbook
QAA Subject Review Report The University Postgraduate Prospectus
- The University of Newcastle upon Tyne's Masters' Degree Programme Entrance and Progress Regulations