

PROGRAMME SPECIFICATION

1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University
3	Final Award	MSc/Postgraduate Diploma
4	Programme Title	Integrated Pest Management
5	UCAS/Programme Code	MSc 5018; Diploma 3303
6	Programme Accreditation	Not applicable
7	QAA Subject Benchmark(s)	Not available
8	FHEQ Level	Masters
9	Date written/revised	October 2007

10 Programme Aims

1. This programme will provide students with a systematic knowledge, and a critical awareness of current problems in the theory and the application in the field of biological principles required for the practical control of pests including animals, plant pathogens and weeds of agricultural crops. Much of the material considered is at, or informed by, research at the forefront of developments in Integrated Pest Management (IPM). Specifically, the course will provide a comprehensive understanding of the techniques, skills and knowledge necessary for the application of chemical, biological and biotechnological methods of pest management emphasising their integration and compatibility with economic and social aspects in tropical and temperate environments. 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 biological and agricultural research, extension, environmental toxicology and modelling. By the end of the programme candidates will be able to demonstrate originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in IPM.

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.

2. The qualities and attributes of graduates will be such that they are able to:

- deal with complex agricultural, environmental, social and pest management issues, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences;
- demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level;
- continue to advance their knowledge and understanding, and to develop new skills to a high level; and will have:
- the qualities and transferable skills necessary for employment requiring: the exercise of initiative and personal responsibility; decision-making in complex and unpredictable situations; and the independent learning ability required for continuing professional development.

3. Provision will address the needs of employers such as companies servicing the pest

management industry throughout Europe, agricultural advisory services, independent consultants, food industry, environmental consultants and analysts, institutes and universities under contract or further degrees, charities, overseas national departments of agricultural extension and rural development or environment and natural resource management in the tropics, international development agencies such as the UK the Department for International Development (DFID), university departments and research institutes in the tropics, non-governmental organisations (NGOs) in the agricultural and rural development or sustainable environmental management, and international agricultural 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 comprehensive understanding of scientific survey and experimental techniques appropriate for application in tropical environments;
- 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 pest management.
- 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.

4. The programme meets the descriptors of the Masters level (M, level 4) of the QAA framework for higher education qualifications for England, Wales and Northern Ireland.

2.

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.

Knowledge and Understanding

On completing the programme students should have:

- A1 An advanced knowledge and understanding of the biology and ecology of crops, and other agricultural systems and their main pest groups, including insects, vertebrates, molluscs, acarines, weeds, pathogens such as fungi, viruses and bacteria; **ACE8027, BIO8013, BIO8020, BIO8021, BIO8096, ACE8024, ACE8026, BIO8012, BIO8023, BIO8024**
- A2 An advanced knowledge and understanding of the science that underpins control measures based on biological, environmental, chemical, biotechnological and social approaches; **ACE8022, BIO8013, BIO8016, BIO8019, BIO8020, BIO8021, BIO8096, ACE8024, ACE8026, BIO8012, BIO8017, BIO8022, BIO8023, BIO8024**
- A3 An advanced knowledge and understanding of the integration of the various techniques for pest control in a sustainable and ecologically beneficial way; **ACE8027, BIO8013, BIO8016, BIO8019, BIO8020, BIO8021, ACE8024, ACE8026, BIO8012, BIO8024**
- A4 An advanced knowledge and understanding of practical techniques in aspects of the pest and pest environment; **ACE8027, BIO8013, BIO8016, BIO8019, BIO8020, BIO8021, BIO8096, ACE8026, BIO8012, BIO8017, BIO8022, BIO8024**
- A5 An advanced knowledge and understanding of a range of appropriate optional subject specialisations to suit personal interests and career positioning including: environmental toxicology, applied crop protection; principles of plant disease management; techniques in pest management; social impact of biotechnology, plant-animal-interactions; gene technology; novel organisms and natural products; trees. **BIO8013, BIO8016, BIO8096, ACE8024, ACE8026, BIO8011, BIO8012, BIO8017, BIO8022, BIO8023, BIO8024**

Teaching and Learning Methods

Teaching strategy

Specialist knowledge and understanding of the compulsory material is taught via lectures (A1-A4, A6), practical classes (A1, A2), seminars (A1-A3), case studies (A1-A3) and field classes

(A1, A6) which form the advanced and conversion elements. The 80-credit MSc research project enables independent experimental design and analysis to be taught in the context of a research project (A1-A5). Optional modules enable students to concentrate on advanced specialist material of individual interest (A5), and/or remedy deficiencies in specific background knowledge such as a basic understanding of biotechnology, toxicology and social impact of biology. 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-A5 based on library research or secondary data.

Learning strategy

The understanding of lecture material is encouraged through independent reading (A1-A5) assisted by the provision of prioritised reference lists. Such learning is reinforced by formative feedback provided by practical exercises (A2, A4, A5), seminars (A1,A2,A3,A5), case studies (A1,A2, A3, A5), or the Diploma Dissertation for Diploma candidates (A1-A5), with active participation in fieldwork and a major research project leading to the MSc thesis (A1-A5).

Assessment Strategy

Assessment of specialist knowledge and understanding is by formal unseen examinations held at the end of the first phase (January) and by coursework exercises that provide a fuller test of student understanding of the material and relevant literature (A1-A4) both in conjunction with written examinations (phase 1) and on modules that are assessed only by coursework exercises (phase 2). This is intended to provide a transition during the course of the degree programme from examinations to continuous methods and to reporting, both in thesis and oral forms. The first two employ a range of approaches in order to accurately assess student abilities. Written papers include essay, calculation, multi-part questions. Assessed coursework comprises practical exercises, seminar presentations, case studies, literature reviews, scientific/technical reports, a poster paper and essays. Field class and other reports are also assessed (A4). Some of A1-A5, (depending on the topic of the MSc project), are also examined by means of a written MSc thesis, or the Diploma Dissertation for Diploma candidates (A1-A5), and (at the discretion of the External Examiner) by *viva voce* examination.

Intellectual Skills

On completing the programme students should be able to:

- B1 critically evaluate current research and advanced scholarship in the area of pest management **ACE8022, ACE8027, BIO8013, BIO8016, BIO8020, BIO8021, BIO8096, ACE8026, BIO8011, BIO8012, BIO8023**
- B2 present and summarise experimental and project data, and to critically appraise its significance, using appropriate statistical techniques, draw logical conclusions and propose directions for further study. **ACE8022, ACE8027, BIO8016, BIO8019, BIO8020, BIO8096, ACE8026, BIO8011, BIO8012, BIO8017, BIO8022, BIO8024**
- B3 develop logical thinking and a structured approach to problem-solving. **ACE8022, BIO8019, BIO8020, BIO8096, ACE8026, BIO8011, BIO8012, BIO8022, BIO8024**
- B4 critically assess the value and limitations of existing information on a given subject **ACE8027, BIO8013, BIO8016, BIO8019, BIO8020, BIO8021, BIO8096, ACE8024, ACE8026, BIO8011, BIO8012, BIO8017, BIO8022, BIO8023**
- B5 to solve problems **BIO8019, BIO8021, BIO8096, ACE8026, BIO8024**
- B6 formulate or recognise key hypotheses and test hypotheses using logical and consistent quantitative or qualitative criteria, and to identify key data that allow tests to be made. **ACE8022, BIO8019, BIO8096, ACE8026, BIO8024**

Teaching and Learning Methods

Teaching strategy

The cognitive skills B2-B6 are developed initially in the degree programme's compulsory modules through a combination of lectures, practical classes, problem-solving exercises, case

studies and field classes. They are progressed in the additional specialised optional modules, where they are applied to specific research or management issues, sometimes in a field-based environment (B4). Cognitive skills B1 are particularly developed through lectures, seminars and case studies involving literature reviews, guided reading and critical analysis of presentations. The MSc project and thesis allow cognitive skills B1-B6 to be applied to a specific research problem or issue guided by individual supervision. The Diploma Dissertation teaches the use of cognitive skills B1-B6 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 peer-group presentation during the first phase; through experience of case studies, course work and discussion following seminars (B1-B6); and through designing field experiments and analysing the data for the techniques in pest management module (B3-B6). The design and practice of the lengthy MSc research project 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 (B6). The Diploma Dissertation is useful in developing some of the cognitive skills B1-B5.

Assessment Strategy

Assessment strategy

Cognitive skills B2-B4 imparted through the quantitative methods module are assessed by coursework (case studies, problem-solving exercises, in-course tests, scientific/practical reports, project proposals, seminars and presentations) in a number of the compulsory modules. Cognitive skills B1-B6 are further assessed in optional specialised modules by written formal examination in the first phase (B1-B5) and seminars and case study reports (B1-B4), field survey or professional reports, project proposals and the MSc thesis (B4-B6). Many other of the skills B1-B6 are also examined by means of the MSc thesis and (at the discretion of the External Examiner) by *viva voce* examination. Diploma candidates skills B1-B5 are also tested by means of the Diploma Dissertation.

Practical Skills

On completing the programme students should be able to:

- C1 ability to evaluate and critically assess the biology and ecology of a pest management problem and to develop appropriate management approaches. **ACE8027, BIO8013, BIO8020, BIO8021, BIO8096, ACE8026, BIO8012, BIO8024**
- C2 practical experience of a range of laboratory techniques relevant to pest biology, the crop environment and toxicology. **ACE8022, BIO8016, BIO8019, BIO8096, ACE8026, BIO8017, BIO8022, BIO8024**
- C3 ability to critically assess the quality of data produced by these techniques. **ACE8022, BIO8019, BIO8096, BIO8017, BIO8022, BIO8024**
- C4 ability to select suitable control measures, using a combination of pesticides, varietal resistance, biological, biotechnological, cultural and environmental techniques, and application methods, as appropriate. **BIO8013, BIO8016, BIO8020, ACE8026, BIO8011, BIO8012**
- C5 ability to recognise a range of UK (and other) crops and pests and to know their life cycles, potential pest status and current control techniques. **BIO8020, BIO8096, ACE8024, ACE8026, BIO8012, BIO8024**
- C6 a range of specialised skills appropriate for specific career goals. **BIO8013, BIO8019, BIO8096, ACE8026, BIO8017, BIO8024**

Teaching and Learning Methods

Teaching Strategy

Research, classification and critical assessment skills are taught via lectures, seminars, case studies and practical classes (C1- C3). Experimental design, analytical techniques,

modelling, and data handling, presentation and appraisal (C3) are taught initially in hands-on computer or laboratory-based practical or problem solving classes. 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 class for pest identification. Further specialised skills (C6), are taught within optional specialised modules. More advanced training in several of skills C1-C6 is provided on an individual basis during the MSc thesis project, for which students usually work within an existing research group. Individual training for some of the skills C1-C6 are provided for Diploma candidates in the Diploma Dissertation.

Learning Strategy

Independent reading of recommended references is important in understanding how knowledge is applied and techniques used (C1-C3). However, students are encouraged to acquire skills through active participation in the project planning, experimental and survey design and data interpretation as part of the coursework covered initially in the specialised modules, and later through participation in field sampling, analysis and data interpretation in the field classes (C5). Learning is reinforced and further developed, as MSc students apply their skills in data collection, analysis, interpretation and presentation in their MSc project and thesis (C1-6).

Assessment Strategy

Assessment strategy

Formal examinations (C1- C4) are used to assess some subject specific/professional skills, particularly when additional reading reinforces learning. However, most of these skills are assessed by coursework reports and presentations (C1-C6). Some of the skills (C1-C6) are further practiced and assessed by means of the MSc thesis and poster presentation, the Diploma Dissertation, and (at the discretion of the External Examiner) by *viva voce* examination.

Transferable/Key Skills

On completing the programme students should be able to:

- D1 communicate conclusions clearly to specialist and non-specialist audiences **ACE8022, ACE8027, BIO8013, BIO8016, BIO8020, BIO8021, BIO8096, ACE8026, BIO8011, BIO8012, BIO8022, BIO8024**
- D2 plan, organise and prioritise work activities in order to meet deadlines **ACE8027, BIO8016, BIO8019, BIO8020, BIO8021, BIO8096, ACE8026, BIO8012, BIO8022, BIO8024**
- D3 show originality and initiative in tackling and solving problems **BIO8013, BIO8021, BIO8096, ACE8026, BIO8012, BIO8024**
- D4 work independently (or in a team) in planning and implementing tasks at a professional or equivalent level **ACE8027, BIO8013, BIO8016, BIO8019, BIO8020, BIO8021, BIO8096, ACE8026, BIO8017, BIO8024**
- D5 use library and other information sources skilfully and appropriately **ACE8027, BIO8013, BIO8016, BIO8020, BIO8021, BIO8096, ACE8024, ACE8026, BIO8011, BIO8012, BIO8022, BIO8023, BIO8024**
- D6 use IT resources skilfully and appropriately **ACE8022, ACE8027, BIO8013, BIO8016, BIO8019, BIO8020, BIO8021, BIO8096, ACE8026, BIO8012**
- D7 to make decisions in complex and unpredictable situations **ACE8027, BIO8019, BIO8096, ACE8026, BIO8024**

Teaching and Learning Methods

Teaching strategy

The teaching of transferable skills is an important part of the MSc throughout many modules. Verbal presentation skills and dealing with critical feedback are initially developed in the compulsory modules and further encouraged and developed in seminars and presentations

such as poster preparation and presentation (D1). All skills (D1-D7) are important in planning, carrying out, presenting and being examined in the research project and MSc thesis. Field classes (D2-D4), development of project proposals (D1, D3-D5, D7) and independent problem solving (D2-D7) 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-D7) most key skills are better developed through laboratory and field work (D1-D6), case studies and associated presentations (D1-D7), the MSc research project or Diploma Dissertation (D1-D8), seminars (D1, D3-D5, D7), and communicating information in short oral presentations.

Assessment Strategy

Key skills are rarely assessed by formal examination (D5-D7). Scientific/technical reports (D1-D7), project proposals, the MSc thesis and oral examination or the Diploma Dissertation, and other elements of assessed coursework (D1-D4, D6-D7) are the main methods of assessment. Assessed seminar presentations 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

The courses are either of 12 months (MSc) or 9 months (Diploma) duration starting in September. A modular taught course structure, consisting of 180 credits (for MSc) or 120 credits (for Diploma), is common to this and other MSc degrees and Diploma programmes in the relevant Schools. The MSc comprises 100 credits of taught modules and a research project (80 credits). Of the taught modules, 70 credits are compulsory modules appropriate to the focus of the degree. The remaining 30 credits are chosen from options offering flexibility and opportunity for personal specialisation and career positioning.

The teaching is provided by modules (10 credits each) that are given during Phase 1 and Phase 2 (*see table below*). Phase 1 (September-January) has 6 modules, of which 5 are compulsory and there is one optional module (10 credits). In Phase 2 (which is shorter January – April) there are two compulsory modules (20 credits) and 2 optional modules (20 credits). Thus there are 10 taught modules, of which 7 are compulsory. Phase 1 modules are assessed by a mixture of coursework exercises and formal examinations (taken in January) whilst Phase 2 modules are assessed by coursework.

MSc candidates undertake a research project in Phase 3 leading to a Thesis (submitted late August) (80 credits). A project proposal is developed towards the end of Phase 1. The oral examination will be in May or late August. Diploma candidates undertake a short dissertation (20 credits) to be submitted in late May.

Compulsory modules: Candidates for the MSc and the Diploma in Integrated Pest Management take the seven compulsory taught modules (worth 70 credits overall) listed below (1.). These 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.

Optional modules: chosen by the candidate, according to interest and career objectives, one module (10 credits) in Phase 1 and 2 in Phase 2. Normally, in Phase 1 a module is selected from those listed in 2.2.1 below and in Phase 2 includes the two recommended options in 2.1. However, other modules may be selected from the list (2.2.2), which is timetabled. Alternative modules from the modular programme may also be selected by special arrangement depending on timetable availability.

1. *Compulsory modules:*

BIO8021	Integrated Pest Management and Biological Control (10 credits, phase 1)
ACE8022	Quantitative Techniques, Experimental Design and Data Analysis (10 credits, phase 1)
BIO8016	Genetically Modified Organisms: Impact Evaluation and Crop Protection (10 credits, phase 2)
BIO8019	Pesticides: Use and Environmental Properties (10 credits, phase 1)
ACE8027	Farming Systems and AgroEcology (10 credits, phase 1)
BIO8013	Applied Entomology (10 credits, phase 2)
BIO8020	Weeds and Their Management (10 credits, phase 1)

2. *Optional modules:*

2.1 **Recommended options (2) for the course include:**

BIO8012	Principles of Plant Disease Management (10 credits, phase 2)
BIO8024	Techniques in Pest Management (10 credits, Phases 2-3)

2.2 **Other options** can be selected from the range of postgraduate modules available as part of the modular programme. For Integrated Pest Management these include;

2.2.1 *Phase 1:*

ACE8026	Applied Crop Protection (10 credits, phase 1)
BIO8017	Gene Technology (10 credits, phase 1)

2.2.2 *Phase 2:*

BIO8022	Environmental Toxicology (10 credits, phase 2)
BIO8023	Plant-animal Interactions (10 credits, phase 2)
BIO8011	Social Impact of Biotechnology (10 credits, phase 2)
ACE8024	Trees, Growth and Management and Environmental Impacts (10 credits, phase 2)

3. Candidates for the **MSc** also undertake a research project leading to a thesis:

BIO8096	MSc Thesis (80 credits, phase 3)
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This aims to provide students with experience of undertaking an investigation involving analysis and interpretation of data, such as they may experience in the work-place, and to develop confidence to undertake an individual investigation and report their findings to others. There is flexibility to include a research/laboratory orientated project, a survey or recording exercise, an industrial liaison or placement, and/or overseas studies/fieldwork.

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

This is a one-year, fulltime modular Masters degree programme (180 credits). It conforms to the modular structure of other MSc programmes taught in the School of Biology over three phases (see Fig 1), and is delivered through collaboration with other schools. It consists of 100 credits in the taught component (60 credits in MSc phase 1 and 40 credits in MSc phase 2) and 80 credits for a research project which takes place in MSc phase 3. The taught component is assessed in the examination period in January, at the end of MSc phase 1. The MSc thesis has to be submitted by end of August.

Most taught modules are of 10 credits. There are 5 10-credit compulsory modules in phase 1, and 2 10-credit compulsory modules in the second phase. These compulsory modules are part of the core pest management material for the degree. These include pesticide use, applied entomology and weeds and their management, integrated pest management and biological control, genetically-modified organisms and introduce the most important aspects of

pest management. Quantitative methods is a compulsory module. Recommended options include principles of plant disease management and techniques in pest management which complete the basic course. Other optional modules are chosen from a limited list that enables students to substitute and add relevant specialist topics according to their preferences and their prior knowledge. In the first phase 60 credits are specified but up to 10 credits could be substituted. In the second phase 20 credits are specified and 20 credits can be chosen from the list.

Students will have to satisfy the standard MSc regulations that apply to MSc degrees in the School of Biology. Decisions on fail, pass, diploma, MSc and MSc merit and distinction awards will be made by the Board of Examiners in September and will be based on overall performance in all aspects of the subject.

The MSc degree utilises a wide range of expertise available in the Faculty of SAgE. It is an up to date course reflecting advances in pest management while providing the basic training in the theory and practical aspects. It provides the connection with the crop protection industry, through contact in attending the annual BCPC International Congress or other scientific meetings, through the crop events held locally and visiting farms and demonstration sites and the possibility of industrial placements for the research project. Students are encouraged to present the results of their project in a poster at the BCPC following their graduation. Project placements are also available in research institutes overseas, especially in developing countries for those with an interest in the tropics, or for students who come from such countries. Placements within the EU are encouraged.

Programme regulations (link to on-line version)

http://www.ncl.ac.uk/regulations/programme/2007-2008/programme/msc_5018_diploma_3303br.php

13 Criteria for admission

Entry qualifications

Minimum of a lower second class BSc Honours degree. Normally the first degree subject should be related to the MSc subject.

Admissions policy/selection tools

Applicants who meet the criteria for admission are automatically sent an offer by the University. Applicants with qualifications and experience outside the normal criteria are referred to the Postgraduate Admissions team within the School of Biology for a decision.

Non-standard Entry Requirements

None

Additional Requirements

None

Level of English Language capability

IELTS 6.5 except countries exempted by University policy.

14 Support for Student Learning

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.

Help with academic writing is available from the Writing Centre.

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 eg. 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 Union Society 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-session 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 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.

External Examiner reports

External Examiner reports are considered by the Board of Studies. The Board responds to these reports through Faculty Teaching and Learning 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 National Student Survey is sent out every year to final-year undergraduate students, and consists of a set of questions seeking the students' views on the quality of the learning and teaching in their HEIs. With reference to the outcomes of the NSS and institutional student satisfaction surveys actions are taken at all appropriate levels by the institution.

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 five 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 two-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 and Learning Committee on whether the programmes reviewed should be re-approved for a further five year period.

16 Regulation of assessment

Pass mark

The pass mark is 50 (Postgraduate programmes)

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

<50	Fail
50-59	Pass
60-69	Pass with Merit
70 or above	Pass with Distinction

Summary description applicable to postgraduate Certificate and Diploma programmes

<50	Fail
50 or above	Pass

Role of the External Examiner

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

- See and approve examination papers
- Moderate examination and coursework marking
- Attend the Board of Examiners
- Report to the University on the standards of the programme

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

The University Prospectus (see <http://www.ncl.ac.uk/postgraduate/>)

The School Brochure (contact enquiries@ncl.ac.uk)

The University Regulations (see <http://www.ncl.ac.uk/calendar/university.regs/>)

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.

Mapping of Intended Learning Outcomes onto Curriculum/Modules

Module	Type	Intended Learning Outcomes			
		A	B	C	D
ACE8022	Compulsory	2	1,2,3,6	2,3	1,6
ACE8027	Compulsory	1,3,4	1,2,4	1	1,2,4,5,6,7
BIO8013	Compulsory	1,2,3,4,5	1,4	1,4,6	1,3,4,5,6
BIO8016	Compulsory	2,3,4,5	1,2,4	2,4	1,2,4,5,6
BIO8019	Compulsory	2,3,4	2,3,4,5,6	2,3,6	2,4,6,7
BIO8020	Compulsory	1,2,3,4	1,2,3,4	1,4,5	1,2,4,5,6
BIO8021	Compulsory	1,2,3,4	1,4,5	1	1,2,3,4,5,6
BIO8096	Compulsory	1,2,4,5	1,2,3,4,5,6	1,2,3,5,6	1,2,3,4,5,6,7,
ACE8024	Optional	1,2,3, 5	4	5	5
ACE8026	Optional	1,2,3,4,5	1,2,3,4,5,6	1,2,4,5,6	1,2,3,4,5,6,7
BIO8011	Optional	5	1,2,3,4	4	1,5
BIO8012	Optional	1,2,3,4,5	1,2,3,4	2,4,5	1,2,3,5,6
BIO8017	Optional	2,4,5	2,4	2,3,6	4
BIO8022	Optional	2,4,5	2,3,4	2,3	1,2,5
BIO8023	Optional	1,2,5	1,4		5
BIO8024	Optional	1,2,3,4,5	2,3,5,6	1,2,3,5,6	1,2,3,4,5,7