1	**Awarding Institution**	**University of Newcastle upon Tyne**

2	**Teaching Institution**	**University of Newcastle upon Tyne**

3	**Final Award**	**BSc (Joint Honours)**

4	**Programme title**	**Geographic Information Science component (combination possible with Mathematics and with Computer Science)**

5	**Programme Accredited by**:	**The Royal Institution of Chartered Surveyors** **The Institution of Civil Engineering Surveyors**

6	**UCAS Code**	**GG91 (with Mathematics)** **GG95 (with Computer Science)**

7	**QAA Subject Benchmarking Group(s)**	**Engineering**

8	**Date of production/revision**	**April 2002**

9 Programme Aims:

This 50% component of a Joint Honours undergraduate degree programme, which is firmly established within the Faculty of Science, aims to produce graduates with a sound knowledge and understanding of spatial data collection, analysis, management and presentation. The programmes cover aspects of measuring, mapping, recording and managing information about an area which may be urban or rural, mountainous, coastal or on the open sea, and may range in size from a land parcel to a continent. Due to the range of optional modules available, graduates will not address each element of the discipline of geomatics. Graduates are able, dependent on module choice, to establish, undertake, manage and develop projects involving engineering surveying, geodesy, photogrammetry, cartography, GIS/LIS, hydrographic survey and computing and thereby follow a wide choice of professional careers within geomatics. Alternatively they may apply their skills in a range of other careers.

10(a) Programme Intended Learning Outcomes:

A Knowledge and understanding

A1 Fundamentals of managing, maintaining and presenting spatial data

A2 An appreciation of the concepts of accuracy and precision in spatial data handling

A3 Knowledge of the application of geographic information in addressing environmental and socio-economic issues

A4 An understanding of the impact of information technology on geomatics

A5 A good grounding in the basic sciences of mathematics, computing and physics

A6 Management and business practices within geomatics

A7 Professional and ethical responsibilities

A8 The academic requirements of the partner professional institutions (The Royal Institution of Chartered Surveyors and the Institution of Civil Engineering Surveyors)

B Subject-specific/professional skills

B1 Field skills: planning; observation; recording and processing; application of scientific principles in the field

B2 Experimental design: hypothesis testing; use of equipment, hardware and software; assessment of results

C Cognitive skills

C1 Data analysis: statistical analysis; image processing and interpretation; application of mathematical techniques to data analysis

C2 Synthesis: appropriate data modelling and integration (including data from other disciplines)

C3 Critical analysis: appraisal of data and development of argument

C4 Problem solving

D Key (transferable) skills

D1 Communication: written, oral and interpersonal at a level appropriate for the target audience

D2 Teamwork: both in the field and in the laboratory

D3 Planning and organisation: setting objectives; allocating resources; time management

D4 Initiative and adaptability: responding to change; working independently

D5 Numeracy: understanding and using numbers and mathematics correctly

D6 Literacy: ability to read critically and with purpose

D7 IT: effective use of a wide range of computing technology

10(b) Intended Learning Outcomes, Teaching and Learning Strategies and Methods, Assessment Strategies and Methods

A Knowledge and understanding

Successful students will have acquired knowledge of, and demonstrated understanding of:

A1 Fundamentals of managing, maintaining and presenting spatial data
A2 An appreciation of the concepts of accuracy and precision in spatial data handling
A3 Knowledge of the application of geographic information in addressing environmental and socio-economic issues
A4 An understanding of the impact of information technology on geomatics
A5 A good grounding in the basic sciences of mathematics, computing and physics
A6 Management and business practices within geomatics
A7 Professional and ethical responsibilities
A8 The academic requirements of the partner professional institutions (The Royal Institution of Chartered Surveyors and the Institution of Civil Engineering Surveyors)

Teaching strategy

The Department recognises that a variety of teaching and learning methods is necessary to achieve the intended learning outcomes. The primary mechanism for teaching knowledge and understanding is by lectures, but these are strongly supported, for most modules, by an extensive and integrated practical programme. Lectures give the students basic knowledge and understanding of all aspects from above (A1 – A8), whilst practicals strengthen understanding and application in A1 – A3, and A5 in particular. Other teaching methods include teamwork exercises in the field.

Learning strategy
Students are required to be active in their learning and not merely passive recipients of information. They are also encouraged to manage their own learning through research and project-based work. An increasing emphasis is placed on team working, both in the classroom and in practical work. Some modules explicitly concentrate on professional and practical aspects of applied geomatics, involving discussion and seminars. Independent reading is encouraged by the provision of reading lists for all modules. Optional module choices can extend the student experience to include independent research work and residential fieldwork.

Assessment strategy
The larger proportion of assessment is undertaken by traditional closed-book, written examinations, although some modules are assessed by multiple-choice testing. A significant proportion of assessment is, however, continuous coursework assessment and this allows for formative development of knowledge and understanding.

B Subject-specific/professional skills

Successful students will have developed the following subject-specific skills:

B1 Field skills: planning; observation; recording and processing; application of scientific principles in the field

B2 Experimental design: hypothesis testing; use of equipment, hardware and software; assessment of results

Teaching strategy
Field skills (B1) are developed through extensive outdoor practical sessions and optional residential fieldcourses. These also ensure that experimental skills (B2) are also introduced and taught. Other practical skills taught can including programming.

Learning Strategy
All the skills listed above are introduced progressively throughout the three year degree programme such that considerable independence in the application of these skills is achieved by the end of the degree programme.

Assessment Strategy
Examinations assess many of the skills listed above, but it is the hands-on practical experience and the subsequent coursework which yields the major summative assessment of these skills.

C Cognitive skills

Successful students will possess the following generic cognitive skills:

C1 Data analysis: statistical analysis; image processing and interpretation; application of mathematical techniques to data analysis

C2 Synthesis: appropriate data modelling and integration (including data from other disciplines)

C3 Critical analysis: appraisal of data and development of argument

C4 Problem solving

Teaching Strategy
The emphasis in this course on accurate data handling and rigorous data manipulation ensure that students quickly acquire general cognitive skills enabling them to correctly and effectively manage spatial data. Hands-on exercises promote effective data analysis and develop critical skills (C1, C3). The integration of data from numerous sources, and the implications of such integration, are also covered in detail (C2). There is an emphasis on teaching skills for independent learning and for practical problem solving (C4).

Learning strategy
Students are constantly exposed to practical work and spatial data handling. They learn through supervision, experience, discussion and consideration of case studies that data handling skills are essential for a professional geomatician.

Assessment strategy
The cognitive skills listed above are assessed particularly in coursework submissions which detail practical work undertaken.

D Key (transferable) skills

Successful students will have attained the following core skills:

D1 Communication: written, oral and interpersonal at a level appropriate for the target audience
D2 Teamwork: coordination, leadership and resolving conflicts both in the field and in the laboratory
D3 Planning and organisation: setting objectives; allocating resources; time management
D4 Initiative and adaptability: responding to change; working independently
D5 Numeracy: understanding and using numbers and mathematics correctly
D6 Literacy: ability to read critically and with purpose
D7 IT: effective use of a wide range of computing technology

Teaching strategy
Many of these skills are taught, practised and assessed in a large number of modules. The 'key skills' matrix published in the student handbook demonstrates that, at every Stage in the degree programme, a significant range of core skills are taught, in formal modules and during induction week.
Written and oral presentation skills (D1) are taught explicitly in tutorial elements of Stage 1 modules. Teamwork (D2) is a particular strength of this degree programme and is taught both on optional residential fieldcourses and in other modules where students undertake practical exercises (indoor and outdoor) in teams. Both planning and organisation skills (D3) and initiative and adaptibility (D4) are regarded as generic and are taught specifically in the professional practice module. Numeracy (D5) is specifically addressed in a range of basic maths modules; Literacy (D6) is encouraged with the incorporation of reading lists into every module outline form; and IT use (D7) is taught in the vast majority of modules which rely upon digital equipment, software packages and student-written programs.

Learning strategy
Students learn about these key skills in a number of ways: they are practised in specific modules as detailed on the 'key skills' matrix published in the student handbook, and we would particularly highlight the role of communication, problem solving, teamwork and IT skills which the students are exposed to. Good study habits are engendered from the beginning of Stage 1, as induction week programmes (including a compulsory management skills residential weekend taken at the end of week 2 of Stage 1) address all these elements.

Assessment strategy
Key skills are assessed through the summative marking of a range of pieces of work, including practical reports. The 'key skills' matrix published in the student handbook indicates the modules where these and other skills are explicitly assessed, but it should be noted that all coursework submission, and a significant amount of formal examination assessment, will take competence in key skills into account.

11(a) Programme Features

This component is 50% of a three year full-time modular programme and therefore consists of 60 credits per year for three years. Using university conventions, 10 credits are equivalent to 100 hours of study time (all contact hours plus private study). Students are expected to take 30 credits in this component in each semester (half teaching year), although imbalances are permitted. Modules offered by the department can be worth 10 or 20 credits.

The compulsory and optional modules at Stage 1 give a firm foundation across the subject matter of geomatics. A full understanding of the integration of mathematics and computing science with the tasks of precise spatial data recording and presentation, map and image handling and accurate measurement is achieved. Practical work, seminars, a residential management skills course and the introduction of IT into most modules give students an in-depth appreciation of the nature of the subject and the methods by which it is taught.

Progress from Stage 1 to Stage 2 is dependent on passing all modules: modules can be re-sat and can be passed by compensation up to a maximum of 40 credits in total for both components. University regulations govern issues such as number of attempts at re-sit assessment and the time period within which degree courses can be taken.

Stages 2 and 3 offer a range of compulsory and optional modules which allow for specialisation in the areas of digital data use and spatial data analysis. There are opportunities to follow modules which deal with other aspects of geomatics in an integrated manner. Dependent on pre-requisites, these can be chosen from all areas of the discipline including surveying, mathematical support, photogrammetry and image handling, geodesy, cartography, and GIS.

Many Stage 3 modules have Stage 2 pre-requisites, but it is possible to take some optional modules from the Stage 2 programme during Stage 3, and also to take a limited number of Stage 1 modules in Stage 2 (purely for pre-requisite purposes). Both Stages 2 and 3 are equally weighted in the determination of the final degree classification. Progress from Stage 2 to Stage 3 requires all modules taken in the second year to be passed. However, at the end of Stage 2 re-sits for failed modules are possible and further failure of any module can be ‘compensated’ up to a maximum of 30 credits in total over both components of the whole degree programme.

Particular features of the degree programme include:

- Choice of some modules at Stage 1 (dependent on mathematics ability)
- Possibilities of transfer to the Ordinary degree in Science, for those students who fail to progress on the Honours degree course
- A balance of vocational, scientific and professional education and training
- Significant fieldwork opportunities
- Considerable exposure to advanced contemporary digital technology

- An appreciation, within a relatively small but research-active university department, of the nature and impact of research activity in geomatics
- A range of professional and management modules
- The fostering of an *esprit de corps* through team-building exercises, group work in practicals, the small and friendly nature of the department and the existence of social (student Surveying Society) and formal (Staff Student Committee) avenues of interaction.

Curriculum and Programme Structure

The modular structure of the programme and the curriculum, as indicated by the module titles, is laid out here. This is followed by a series of matrices which indicate the contribution of the modules to the learning outcomes.

Modules in bold are compulsory

Stage 1

Code	Value	Semester	Title
SVY 101	**(20)**	**1 & 2**	**Plane Surveying Methodology, Instrumentation and Practice**
SVY 102	(10)	1	Geographic Information
SVY 103	(20)	1 & 2	Surveying Information Technology
SVY 106	(10)	2	Fieldcourse
SVY 107	(20)	2	Analytical Methods for Geomatics
SVY 108	(10)	2	An Introduction to GPS and its Applications
SVY 109	(10)	1	Photogrammetry and Remote Sensing

For students registered on GG95, SVY107 is compulsory, and SVY106 is not possible.
The total value of modules selected from the above list should equal 60.
GG95 students without A Level Mathematics at a high grade, must also take the module MAS051 (20) Foundation Mathematics I.

Stage 2

All students take modules to a credit value of not more than 20 from the following list, if not taken in Stage 1:

Code	Value	Semester	Title
SVY 102	(10)	1	Geographic Information
SVY 103	(20)	1 & 2	Surveying Information Technology
SVY 108	(10)	2	An Introduction to GPS and its Applications
SVY 109	(10)	1	Photogrammetry and Remote Sensing

All candidates select, subject to pre-requisites, further modules to give a total modular value of 60 credits. These modules are normally be selected from:

Code	Value	Semester	Title
SVY 202	(10)	1	Digital Survey and CAD
SVY 203	(10)	1	Observation Processing and Analysis
SVY 205	(10)	1	Survey Mathematics
SVY 206*	(10)	1	Mapping Practices
SVY 207	(10)	2	GPS Theory and Practice
SVY 209	(10)	2	Engineering Surveying Methodology and Instrumentation
SVY 213*	(10)	2	Geographic Information Systems
SVY 214*	(10)	1	Software Development for Geomatics
SVY 218*	(10)	1	Remote Sensing - Data Acquisition and Processing
SVY 221	(10)	2	Analytical Photogrammetry
SVY 222	(10)	1	Map Projections and Geodetic Datums
SVY 223	(10)	2	Research Methods in Geomatics
SVY 224*	(10)	2	Introduction to Programming in Java
CSC 229	(10)	2	Filing Systems and Databases
ENG 201	(10)	1 & 2	Introduction to Business Management
LAW 253	(10)	1	Law and Land Use

Stage 3

All candidates select, subject to pre-requisites, modules to a credit value of 60 in the GIS component. Such modules can be chosen from the above Stage 2 list (if not already taken) and the following list of Stage 3 modules.

Code	Value	Semester	Title
SVY 303 or 300*	(10)	1	Fieldcourse
SVY 302	(10)	1 or 2	JH Research Project
SVY 304*	(10)	2	Cartographic Data Handling
SVY 305	**(10)**	**1**	**Professional Survey Practice**
SVY 306	(10)	1 & 2	Aspects of Applied Geomatics
SVY 307	(10)	1	Geophysical Geodesy
SVY 309	(10)	2	Offshore Surveying
SVY 312*	(10)	1	Geographic Information Users and Uses
SVY 317	(10)	2	Digital and Close Range Photogrammetry
SVY 318	(10)	2	Remote Sensing Systems and Applications
SVY 322	(10)	2	Geophysical Surveying
CSC 229	(10)	2	Filing Systems and Databases
CSC 603	(10)	1	Object Orientated Programming in C++
SCI 399	(20)	1 &/or 2	Joint Honours Science Project

In some circumstances, and with the approval of the Degree Programme Director, alternative modules may be added to the list of possible options. An imbalance between the module count for each component can also be considered. The main criterion for such approval will be that all intended learning outcomes can still be achieved.

In order for the Joint Honours component described herein to be designated as ‘Geographic Information Science’ at least 50 credits from the lists above should be taken in modules which are asterisked. If this condition is not met, the component is designated as ‘Surveying and Mapping Science’.

Subject matter of the research project in SVY302 or SCI399 may be taken into account, and, if overtly GIS in scope, the credit weighting for these modules can be included in the 50 credits.

A Knowledge and understanding	Modules within which Knowledge and understanding are taught, practised and/or assessed
A1 Fundamentals of managing, maintaining and presenting spatial data	SVY102, SVY106, SVY109 SVY206, SVY213, SVY218, SVY221, SVY222 SVY300, SVY304, SVY309, SVY312, SVY318
A2 An appreciation of the concepts of accuracy and precision in spatial data handling	SVY101, SVY102, SVY106, SVY108, SVY109 SVY202, SVY203, SVY206, SVY207, SVY209, SVY213, SVY218, SVY221, SVY222, SVY223 SVY300, SVY304, SVY305, SVY307, SVY309, SVY317, SVY318, SVY322
A3 Knowledge of the application of geographic information in addressing environmental and socio-economic issues	SVY102, SVY106, SVY109 SVY206, SVY209, SVY213, SVY218, LAW253 SVY300, SVY304, SVY305, SVY306, SVY307, SVY309, SVY312, SVY318, SVY322
A4 An understanding of the impact of information technology on geomatics	SVY101, SVY102, SVY103 SVY213, SVY214, SVY223, SVY224, CSC229 SVY304, SVY305, SVY306, CSC603
A5 A good grounding in the basic sciences of mathematics, computing and physics	SVY103, SVY107 SVY203, SVY205, SVY214, SVY221, SVY222, SVY224, CSC229 CSC603
A6 Management and business practices within geomatics	LAW253, ENG201 SVY305, SVY306
A7 Professional and ethical responsibilities	SVY223, ENG201 SVY305, SVY302
A8 The academic requirements of the partner professional institutions (The Royal Institution of Chartered Surveyors and the Institution of Civil Engineering Surveyors)	These areas of knowledge and understanding encompass the vast majority of the syllabus and are therefore introduced, practised and assessed in all the modules within the degree programmes: they are therefore not detailed here.

B Subject-specific/professional skills	Modules within which Subject-specific/professional skills are taught, practised and/or assessed
B1 Field skills • planning • observation • recording and processing • application of scientific principles in the field	SVY101, SVY106 SVY202, SVY207, SVY209 SVY300, SVY309, SVY322
B2 Experimental design • hypothesis testing • use of equipment, hardware and software • assessment of results	SVY101, SVY102, SVY103, SVY106, SVY107, SVY108 SVY202, SVY203, SVY205, SVY206, SVY207, SVY209, SVY213, SVY214, SVY218, SVY221, SVY222, SVY223, SVY224, CSC229 SVY300, SVY304, SVY307, SVY309, SVY312, SVY317, SVY318, SVY302, SVY322, CSC603

C Cognitive skills	Modules within which Cognitive skills are taught, practised and/or assessed
C1 Data analysis • statistical analysis • image processing and interpretation • application of mathematical techniques to data analysis	SVY101, SVY102, SVY103, SVY106, SVY107, SVY108, SVY109 SVY202, SVY203, SVY205, SVY207, SVY209, SVY218, SVY221, SVY222, SVY223 SVY307, SVY309, SVY317, SVY318
C2 Synthesis • appropriate data modelling • appropriate data integration	SVY101, SVY102, SVY106, SVY108, SVY109 SVY203, SVY206, SVY207, SVY213, SVY218, SVY221, SVY222 SVY304, SVY306, SVY307, SVY309, SVY317, SVY302, SVY322
C3 Critical analysis • appraisal of data • development of argument	SVY101, SVY102, SVY106, SVY107, SVY108, SVY109 SVY202, SVY203, SVY206, SVY207, SVY209, SVY213, SVY218, SVY221, SVY223, LAW253, ENG201 SVY300, SVY304, SVY305, SVY306, SVY307, SVY309, SVY312, SVY302
C4 Problem Solving	SVY101, SVY102, SVY103, SVY106, SVY107, SVY108, SVY109 SVY205, SVY206, SVY214, SVY223, SVY224, LAW253 SVY300, SVY306, SVY307, SVY318, SVY302, SVY322, CSC603

D Key (transferable) skills	**Modules within which Key skills are taught, practised and/or assessed**
D1 Communication • written (w) • oral (o) • interpersonal	(w)SVY101, (w)SVY102, (w)SVY106, (w)SVY108, (w)SVY109 (w)SVY202, (w)SVY203, (w)SVY206, (w)SVY207, (w)SVY209, (w)SVY213, (w)SVY214, (w)SVY218, (w)SVY221, (w)SVY223 (w)SVY300, (w)SVY305, (w)SVY307, (w)SVY312, (w)SVY318, (w)SVY302, (w)SVY322 (o)SVY101, (o)SVY102, (o)SVY106, (o)SVY108, (o)SVY109 (o)SVY202, (o)SVY213, (o)SVY218, (o)SVY222, (o)SVY223, (o)LAW253 (o)SVY305, (o)SVY306, (o)SVY307, (o)SVY312, (o)SVY317, (o)SVY302 Interpersonal communciation skills are introduced, practised and assessed in the vast majority of modules within the degree programmes.
D2 Teamwork • coordination • resolving conflicts • leadership	SVY101, SVY102, SVY106 SVY202, SVY207, SVY209, SVY213 SVY300, SVY305, SVY307, SVY309, SVY312
D3 Planning and Organising • setting objectives • allocating resources • time management	SVY101, SVY103, SVY106 Stage 2 INDUCTION, SVY202, SVY203, SVY206, SVY213, SVY223, ENG201 Stage 3 INDUCTION, SVY300, SVY304, SVY305, SVY309, SVY302
D4 Initiative and adaptability • responding to change • working independently	SVY106, SVY 107, SVY108 SVY223, SVY224 SVY300, SVY305, SVY309, SVY302
D5 Numeracy • understanding numbers and mathematics • using numbers and mathematics correctly	These skills are introduced, practised and assessed in the vast majority of modules within the degree programmes, and are therefore not detailed here.
D7 IT • effective use of a wide range of computing technology	These skills are introduced, practised and assessed in the vast majority of modules within the degree programmes, and are therefore not detailed here.

[12 Criteria for Admission

Students are admitted through the UCAS scheme on an individual basis but typical entrance requirements are listed below. The intention is to admit students who are highly likely to achieve an Honours degree.

The programme is designed for students with an interest in the measurement and use of spatial data and/or an interest in the science, engineering and technology of earth data collection and management. Students should therefore be committed to the application of rigorous scientific procedures in handling precise and accurate data; they should exhibit the flexibility of thought to apply their knowledge to a range of tasks; they should be aware of the integrated nature of contemporary science, engineering and technology. As students from a wide range of backgrounds are capable of meeting these requirements, admissions criteria are very broad. There are minimum science-based entry requirements, but we equally weight experience, interest and potential, as indicated on both the Personal Statement and the Referee's Report on the UCAS form.

All candidates should have at least GCSE Grade B in Mathematics if not offered to a higher level.

In addition, various combinations of higher level qualifications are appropriate:

- *A level, Advanced Vocational Certificate of Education, AS level*

BCC from 18 units with at least 12 units from 6- or 12- unit qualifications.

- *Scottish Qualifications*

ABBB at Higher grade. Mathematics required to Higher grade. Combinations of Higher and Advanced Highers accepted.

- *Other Qualifications*

BTEC National Diploma in any subject with 4 Level 3 passes at Merit Grade plus Mathematics at Level 3 at Distinction Grade.

Access qualifications – a modules in Mathematics essential (at Credit Level for courses which are graded); modules in geographical, computer science and engineering subjects desirable (at Merit level for courses which are graded).

For mature students, it is expected that some indication of success at recent further education level is evident, along with some relevant experience in a field of science, engineering or technology.

- *International Qualifications*

These are accepted subject to a minimum science requirement with each candidate considered on their merits, e.g.
International Baccalaureate, minimum of 28 points with Mathematics at grade 5.

Almost all applicants will be offered a place on the basis of their UCAS application form alone (the exceptions are some mature students with non-conventional qualifications or background). All are invited to an Open Day at which they receive a full programme of informative talks and tours, an informal personal interview and the chance to meet current students.

13 Support for Students and Their Learning

*A **comprehensive Degree Programme Handbook** is produced with a) general information about the department and its administration b) details of working practices c) sources of support d) information about the degree programme and its delivery e) details of modules and f) regulations.*

*The **Induction Week Programme** offers a full and informative week for each year group covering study skills, social and development aspects, introduction to teaching and administrative aspects. For Stage 1, the induction programme includes a compulsory residential 'management-skills' weekend; there is also the opportunity to be assessed on mathematical ability and thus be guided into the most appropriate choice of mathematics (or other) modules in Stage 1. Induction week programmes are also arranged for Stages 2 and 3.*

*Each student is allocated a **Personal Tutor** to provide academic advice regarding choice of modules, reflection on progress and guidance in learning strategy. Accessible at all times, they also provides a source of pastoral support, which is particularly important for overseas and mature students.*

*The **Degree Programme Director** is also accessible throughout the year.*

*During Stage 3 students have access to a personal **Research Project Supervisor**.*

*There is a wide range of **University Support Services**, all detailed in the Student Handbook. These include a) Disability Unit b) Student Counselling Service c) Student Welfare d) Careers Service.*

*The excellent **University Library** enables access to books, journals, local and on-line databases, self-tuition programmes in study skills.*

*The **University Computing Service**, through its distributed resources across campus, and within Halls of Residence, gives e-mail, access to the web, and use of all necessary software.*

*Within the department there is access to further advanced **Departmental Facilities**, including computing resources, and a full range of surveying, photogrammetric, mapping and geodetic equipment.*

*There is a wide range of other **Learning Resources** in the form of study rooms (there is a Departmental Reading Room), staff (academic and technical support staff typically*

work closely with all students and there is a favourable staff student ratio) and equipment (departmental equipment is supplemented by hired equipment when necessary for research project and fieldcourse work).

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

The standards and quality of the programme are continuously monitored by reference to comments from students, staff, employers and external organisations including QAA. The aim is to continually ensure that the programme achieves its stated aims, meets the national Benchmarking Statement for the discipline and produces graduates in line with developments in the subject and the changing needs of employees.

a) Mechanisms for review
Student questionnaires
External Examiners' reports
Annual review of progression statistics and employment records
Detailed interaction with recent graduates and employers
Biennial Degree Programme Review
Internal Subject Review
QAA Academic Review

b) Committees responsible for monitoring quality and standards
Board of Studies
Staff/Student Committee
Board of Examiners
Departmental Teaching Committee
Departmental Executive Committee
Faculty Teaching Committee
University Teaching Committee]