School of Geography & Geosciences

Head of School

To be appointed

Degree Programmes

Single Honours Degrees (M.A.)	Development Studies Geography
Single Honours Degrees (B.Sc.)	Geography Geoscience
Joint Honours Degrees (M.A.):	Geography and Art History, Economics, English[T], French[W], Hebrew, International Relations, Italian, Management[S], Mediaeval History, Middle East Studies, Modern History, Psychology, Scottish History, Social Anthropology, Spanish[W], Theological Studies.
Joint Honours Degrees (B.Sc.)	Geography and Environmental Biology, Management, Management Science, Mathematics, Statistics. Geoscience and Chemistry, Computer Science, Environmental Biology, Management, Management Science.
Major Degree Programmes (M.A):	Geography with Social Anthropology or Spanish.
Major Degree Programmes (B.Sc.):	Geography with French[W]
Minor Degree Programmes (M.A.):	Russian[W], Psychology, Social Anthropology or Spanish with Geography.
Minor Degree Programmes (B.Sc.)	Mathematics with Geography.

For all students already in the Honours classes, please refer to the 1999-2000 Course Catalogue for the relevant programmes.

[W] available also as 'with Integrated Year Abroad Degrees'
[S] Timetable clash exists, therefore this combination is subject to arrangement with both Departments.
[T] Timetable clash means that 2000 level English must be taken in the First year to do this combination

Programme Prerequisites

For all Programmes in Geography: Passes in all of GE2001, GE2002, GG2003, GG2004, including passes at 11 or better in 40 credits worth of these modules. Entry to honours with passes at 11 or better in GE2001 and GE2002 only may be permitted at the discretion of the Head of School.

For all Programmes in Geoscience: Passes at 11 or better in GG2003, GG2004, GS2001, and GS2002

Development Studies: Passes at 11 or better in GE2001, GE2003, SA2001, SA2002.

Joint Honours Environmental Biology and Geography: Passes at 12 or better in one of BL2001 or BL2003 AND one of BL2004 or BL2005, AND at 11 or better in GE2002, GG2003, GG2004.

Joint Honours Environmental Biology and Geoscience: Passes at 12 or better in one of BL2001 or BL2003 AND BL2004 or BL2005, AND at 11 or better in GG2003, GG2004, GS2001 and GS2002

All other Joint Honours with Geoscience: Passes at 11 or better in GG2003, GG2004, GS2001, and GS2002 and honours entry in the other subject

Programme Requirements

Geography

Single Honours Degree: GE3001 - GE3005, *plus* either GE3006 or GE3007, plus either GE3008 or GG3011, *plus* GE3018 and GE3019, *plus* 120 additional 3000 level credits, at least 90 of which must be from GE3025 - GE3072 and/or GG3021 - GG3073, GG3082, GG3087, GG3089.

Joint Honours Degree: Any three of: GE3001, GE3002, GE3003, GE3004, GE3005, either GE3006 or GE3007, GE3008, GG3011, *plus* GE3018, *plus* 60 additional 3000 level credits from GE3025 - GE3072 and/or GG3021 - GG3069.

GS1001 Planet Earth and its Materials

Credits: 20.0 Semester: 1

Description: The module provides an introduction to the fundamentals of the science of geology. The plate tectonic discoveries of the last 25 years provide a framework for the module which covers: (i) Introduction to geology and plate tectonics; (ii) mineralogy; (iii) igneous geology; (iv) metamorphic geology; (v) sedimentary geology; (vi) geological maps; and (vii) introductory information technology in geoscience.

Class Hour: 9.00 am

Teaching: Four lectures and one 2 hour laboratory.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: 2 Hour Examination = 50%, Oral Examination if continuous assessment mark is seriously deficient.

GS1002 Earth Environments & Resources

Credits: 20.0 Semester: 2

Description: The interplay between the Earth's internal processes and external form, the evolution of the Earth and of its life forms, and human uses of Earth materials are the themes of this module. The module covers: (i) Earth structure and interior; (ii) palaeontology; (iii) Earth history; (iv) Earth resources; (v) geological maps; (vi) additional information technology in geosciences; (vii) group project exercise.

Class Hour: 9.00 am

Teaching: Four lectures and one 2 hour laboratory.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: 2 Hour Examination = 50%, Oral Examination if continuous assessment mark is seriously deficient.

GE2001 Geographical Change in the Modernising World

Credits: 20.0 Semester: 1

Prerequisites: GE1001 (or GG1001) and GE1002 (or GG1002)

Anti-requisites: GG2001 and GG2002

Description: This module explores the extraordinary character of the modern world from a broadly geographical perspective. It aims to show that the varied and uneven transition from the 'traditional' world to the 'modern' world, and the complex make-up of the twentieth century world, cannot be properly understood without an understanding of its geography. The module tackles cultural, economic and political processes of change spanning the last 500 years, and it focuses on the human geography of capitalism, imperialism, modernisation and globalisation.

Class Hour: 9.00 am Wednesday, Thursday and Friday (lectures), 2.00 - 3.00 pm *or* 3.00 - 4.00 pm, *or* 4.00 - 5.00 pm, *or* 5.00 - 6.00 pm Monday (seminar)

Teaching: Three lectures per week, pluse three seminars and a field course during the semester

Assessment: Continuous Assessment = 60%, 2 Hour Examination = 40%

Re-Assessment: 2 Hour Examination = 40%, Oral Examination if continuous assessment is seriously deficient.

GE2002 Ideas and Approaches in Geography

Credits: 20.0 Semester: 2

Prerequisite: Either GE2001 or GG2003

Co-requisite: (Only for students without GE2001) GG2004

Anti-requisite: GG2002

Description: This module investigates ways in which geographical ideas and approaches can be used to understand the complexities of the contemporary world. Using regional and applied approaches, it investigates the complex interdependencies between human and physical environments at various scales. It also situates these ideas and approaches within contemporary thought by examining some enduring themes which have fascinated geographers for centuries.

Class Hour: 9.00 am Wednesday, Thursday and Friday (lectures), 2.00 - 3.00pm *or* 3.00 - 4.00 pm, *or* 4.00 - 5.00 pm, *or* 5.00 - 6.00 pm Monday (seminar)

Teaching: Three lectures per week, plus two seminars and a practical during the semester

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: 2 Hour Examination = 50%, Oral Examination if continuous assessment is seriously deficient.

Major Degrees: GE3003, GE3004, plus any four of: GE3001, GE3002, GE3005, either GE3006 or GE3007, GE3008, GG3011, *plus* GE3018, *plus* 90 additional 3000 level credits from GE3025 - GE3072 and.or GG3021 - GG3073, GG3082, GG3087, GG3089.

Minor Degrees: 80 credits from GE or GG 3000 level modules, at least 60 credits of which must be from GE3025 - GE3072 and/or GG3021 - GG3073.

Joint Honours Environmental Biology and Geography : BL3000; and any three of BL3021 – BL3027; and any two of BL3121 – BL3126; and BL3300; GG3018, and any two of GE3001 – GE3008, GG3011, plus 75 credits from GE3025 – GE3072 and/or GG3021 – GG3073, GG3082, GG3087, GG3089.

Development Studies

GE3004, GE3007 or GE3008, GE3019, GE3025, plus a minimum of 105 credits from GE3018, GE3026, GE3036, GE3045, GE3060, GE3061, GE3071, GE3072, and a minimum of 80 credits from SA3008, SA3009, SA3012, SA3014, SA3016, SA3017, SA3021, SA3024, SA3027, SA3032 and SA3033.

Geoscience

Single Honours Degree: GS3002, GS3003, GS3004, GS3005, GS3006, GS3007, GS3008, GG3011, GG3081, and GG3082, and 90 credits from the group GG3021, GG3023, GG3036, GG3041, GG3042, GG3052, GG3056, GG3057, GG3058, GG3059, GG3067, GG3068, GG3069, GG3083, GG3084, GG3085, GG3086, GG3087, GG3088, GG3089.

Joint Honours Chemistry and Geoscience: GG3081, GG3084, GS3004, GS3005, GS3009, GS3010, and 30 credits from the group GG3082, GG3083, GG3084, GG3087, GG3088.

Joint Honours Environmental Biology and Geoscience: BL3000, BL3021, BL3022, BL3023; Three from BL3121 – BL3126; GS3004, GS3005, GS3009, GS3010 and 60 credits from the group GG3023, GG3067, GG3068, GG3069, GG3082, GG3083, GG3084, GG3087, GG3088.All other Geoscience Joint Honours Degrees: GS3004, GS3005, GS3009, GS3010 and 60 credits from the group GG3023, GG3067, GG3068, GG3069, GG3082, GG3087, GG3088.

In the case of students who spend part of the Honours Programme abroad on a recognised Exchange Scheme, the Programme Requirements will be amended to take into account courses taken while abroad.

Modules

GE1001 The Foundations of Geography

Credits: 20.0 Semester: 1

Description: This module provides a general introduction to Human and Physical Geography. Some basic concepts of Human Geography - space and place, location and scale, distance and difference - are introduced and used to examine the nature of the human environment. Both contemporary and historical examples allow an exploration of these issues in a British setting, in an urban setting and in relation to world geographies. The Physical Geography component introduces the characteristics of global environmental systems: the lithosphere, atmosphere, hydrosphere and biosphere. These components are illustrated in the course of two one-day field trips.

Class Hour: 11.00 am

Teaching: Five lectures, one laboratory each week and 2 field days during the semester.

Assessment: Continuous Assessment = 67%, 2 Hour Examination = 33%

Re-Assessment: 2 Hour Examination = 33%, Oral Examination if continuous assessment is seriously deficient.

GE1002 Global Environmental Problems

Credits: 20.0 Semester: 2

Description: This module explores the interrelationships between human activity and the physical environment in the context of the examination of some pressing global problems. The scientific, political, social and economic dimensions of such issues as population growth, global warming, desertification, food supply and the exploitation of natural resources are examined, and the potential for sustainable development is considered. The module illustrates the close interrelationship between human and physical geography and the need for a broad knowledge of both if we are to understand the nature of the global environmental problems that currently confront society.

Class Hour: 11.00 am

Teaching: Five lectures and one laboratory.

Assessment: Continuous Assessment = 67%, 2 Hour Examination = 33%

Re-Assessment: 2 Hour Examination = 33%, Oral Examination if continuous assessment is seriously deficient.

GG2003 Earth Surface Processes I : Environmental Systems

Credits: 10.0 Semester: 1

Prerequisites: Either GE1001 (or GG1001) and GE1002 (or GG1002), or GS1001 and GS1002

Anti-requisite: GG2001

Description: This module focuses on the fundamental physical and chemical processes operating at the earth's surface and near subsurface. The course presents the environmental context of earth surface processes in terms of the major components of atmospheric, hydrospheric and biospheric processes. Topics covered include units and basic concepts, hydrometeorology, surface and groundwater hydrology, rock weathering and soil formation, biogeographical processes, physical oceanography and the causes and consequences of environmental change.

Class Hour: 9.00 am Monday & Tuesday, and 2.00 - 4.00pm *or* 4.00 - 6.00 pm Monday

Teaching: Two lectures each week, plus practical work.

Assessment: Continuous Assessment = 25%, 2 Hour Examination = 75%

Re-Assessment: 2 Hour Examination = 75%, Oral Examination if continuous assessment is seriously deficient.

GG2004 Earth Surface Processes II : Geomorphological and Sediment Systems

Credits: 10.0 Semester: 2

Prerequisite: GG2003

Anti-requisite: GG2001

Description: This module extends the understanding of the physcial and chemical processes operating at the earth's surface and near subsurface developed in GG2003. The course focuses on the operation of geomorphological processes in the overall context of sediment entrainment, transportation and deposition in a wide range of terrestrial and nearshore environments. Topics covered include earth surface sediment transport systems, physical processes of sedimentation and the operation of these proecesses in systems such as fluvial, glacial, coastal, hill slope and periglacial environments.

Class Hour: 9.00 am Monday & Tuesday, and 2.00 - 4.00pm or 4.00 - 6.00 pm Monday

Teaching: Two lectures each week, plus practical and fieldwork.

Assessment: Continuous Assessment = 25%, 2 Hour Examination = 75%

Re-Assessment: 2 Hour Examination = 75%, Oral Examination if continuous assessment is seriously deficient.

GS2001 Composition of the Earth

Credits: 20.0 Semester: 1

Prerequisites: GS1001 and GS1002

Description: This module develops from GS1001. It offers lectures, laboratories and field classes covering crystals and minerals, use of the petrological microscope, geochemistry, petrology of all the major rock types, and training in geoscience techniques including map interpretation. Much emphasis is placed on the development of laboratory, practical and fieldwork skills. Students with a sufficiently high grade in Higher or A-level Geology can enter the module without First Year prerequisites.

Class Hour: 10.00 am

Teaching: 3 lectures and 3 hours laboratory work supplemented with an introductory lecture to the week's laboratory class each week.

Asssessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: 2 Hour Examination = 50%, Oral Examination if continuous assessment mark is seriously deficient.

GS2002 Structure and History of the Earth

Credits: 20.0 Semester: 2

Prerequisites: GS1001 and GS1002

Description: This module develops from GS1001. It offers lectures, laboratories and field classes covering Structural Geology, Geophysics, Geodynamics, Palaeontology, Earth History, and Geoscience Techniques. Much emphasis is placed on the development of laboratory, practical and fieldwork, combined with teamwork and presentational skills training. Students with a sufficiently high grade in Higher or A-level Geology can enter the module without First Year prerequisites.

Class Hour: 10.00 am

Teaching: 3 lectures and 3 hours laboratory work supplemented with an introductory lecture to the week's laboratory class each week.

Asssessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

Re-Assessment: 2 Hour Examination = 50%, Oral Examination if continuous assessment mark is seriously deficient.

The prerequisite for each of the following Honours modules is entry to the Honours Programme(s) for which they are specified, save where a specific prerequisite is given.

GE3001 Cartographic Methods in Geography

Credits: 10.0 Semester: 1

Availability: Available only to students in the first year of the Honours Programme.

Anti-requisite: GG3001

Description: This module provides an introduction to basic map design and production. The course syllabus begins with lectures outlining the ideas of generalisation, simplification and symbolisation. An introduction to computerised map production (e.g. using Adobe Illustrator) is provided. These themes form the basis for a series of practical classes, giving the student the opportunity to put these ideas into practice to produce both thematic and choropleth maps.

Class Hour: Friday 9.00 am - 12.00 noon and 2.00 - 5.00 pm during weeks 9-12.

Teaching: Two lectures and 12 hours of practicals in total, over 4 weeks.

Assessment: Practical Exercises = 100%

GE3002 Field Class in Geography

Credits: 10.0 Semester: 2

Availability: Available only to students in the first year of the Honours Programme.

Anti-requisite: GG3002

Description: An important part of geographical study is to put into practice what is learned in the classroom. To that end, this module is organised around a week-long residential course, usually undertaken in continental Europe

Class Hour: To be arranged.

Teaching: Between 5 and 12 days.

Assessment: Project Report = 100%

GE3003 Geography : Theory and Practice

Credits: 10.0 Semester: 2

Availability: Available only to students in the second year of the Honours Programme; from 2001-02

Prerequisite: GE3004

Anti-requisite: GG3003

Description: This module extends the work of GE3004 and encourages students to discuss the scope and diversity of geographical inquiry in preparation for a General Essay examination at the end of their two honours years. The module involves a series of student-led seminars that will augment the understanding of theoretical, methodological and applied issues gained in the rest of the honours programme. All students are required to make at least one oral presentation on a topic agreed beforehand with the course tutor. Discussion is likely to range across a variety of topics including geography as experimental science, geography and local government, research and relevant geographies, and geographical understandings of topical issues. Students will also be required to attend seminars on selected topics given by invited speakers.

Class Hour: 11.00 am - 1.00 pm Friday.

Teaching: 16 hours of seminars in total.

Assessment: 3 Hour Examination = 100%

GE3004 Methodology in Geography

Credits: 10.0 Semester: 2

Anti-requisite: GG3004

Description: A course of lectures and workshops covering the major philosophical and methodological debates which have arisen within geography over the last two decades. Topics range from an introduction to the nature of methodological analysis, through a consideration of the most recent developments in both human and physical geography, to a discussion of unity and diversity: a postmodern geography? Students are required to participate actively in the workshop sessions and discussion is encouraged throughout.

Class Hour: 2.00 - 4.00 Thursday.

Teaching: 20 hours of lectures and workshops in total.

Assessment: Essay = 100%

GE3005 Data Analysis in Geography

Credits: 10.0 Semester: 1

Availability: Available only to students in the first year of the Honours Programme.

Anti-requisite: GG3005

Description: This module is designed to give students an introduction to the handling, presentation and analysis of numerical data within the context of Geography. Topics will include: (i) understanding data types; (ii) data presentation and basic descriptive statistics; (iii) probability; (iv) hypothesis testing using parametric and non-parametric statistics; (v) correlation and regression; (vi) an introduction to the analysis of spatial data. The use of the MINITAB statistical software; is designed to allow these techniques to be employed with large data sets.

Class Hour: 2.00 - 5.00 pm Friday.

Teaching: One lecture and one two-hour practical class each week over 6 weeks.

Assessment: 3 Hour Examination = 100%

GE3006 Survey : Physical

Credits: 10.0 Semester: 2

Availability: Available only to students in the first year of the Honours Programme.

Anti-requisite: GG3006

Description: This is a practical class in which students are introduced to the principles and practice of basic topographic survey, the interpretation of aerial photographs and computer processing of field survey data. Based on a local field area, instruction is provided in the use of levels, theodolites and EDMs for simple field survey. Data collected from the field survey exercise will be analysed using 3D computer software models. Instruction is also provided on the theory and practice of deriving maps from aerial photographs.

Class Hour: 2.00 - 5.00 pm Friday.

Teaching: 20 hours of lectures, laboratories and field instruction in total.

Assessment: Project Report = 100%

GE3007 Survey : Social

Credits: 10.0 Semester: 2

Availability: Available only to students in the first year of the Honours Programme.

Anti-requisite: GG3007

Description: This module introduces students to the techniques of social survey design: problem identification; questionnaire construction; interviewing; sampling; data coding and analysis; report writing and evaluation. Students will be required to conduct a small field survey and present both a verbal and written report on their findings. Data will be analysed using the computer package SPSS for Windows. The module will be of particular use to those students contemplating a dissertation topic in human geography.

Class Hour: 2.00 - 5.00 pm Friday.

Teaching: 20 hours of lectures and practical work in total.

Assessment: Project Report = 100%

GE3008 Qualitative Methods in Geography

Credits: 10.0 Semester: 1

Availability: Available only to students in the first year of the Honours Programme.

Description: This module introduces students to the basic differences between quantitative and qualitative field techniques and to the theoretical and epistemological arguments that inform the choice to use one or the other or both. It discusses a range of qualitative field methods and offers practical experimentation with several. Students design and undertake a qualitative research project on a contemporary local issue. This involves independent field work and analysis of the information collected which is written up in an assessed report.

Class Hour: 2.00 - 4.00 pm Thursday.

Teaching: 20 hours of lectures, laboratories and fieldwork in total.

Assessment: Project Report = 100%

GE3018 Dissertation in Geography

Credits: 30.0 Semester: 1

Prerequisite: Available only to students who intend an Honours Degree in Geography.

Anti-requisite: GG3018

Description: Students select a topic connected with one of the 3000-level option modules in Geography, mount a research programme to investigate the topic, and write a dissertation on the work. The topic is selected during the second semester of the junior honours year; data are collected during the following vacation and the dissertation is written during the first semester of the second year of the Honours Programme. Each student is supervised by a member of the teaching staff who will ensure that the topic chosen is viable and advise students on data collection and analysis. The dissertation is about 10,000 words in length.

Teaching: One lecture plus individual supervision.

Assessment: Dissertation = 100%

Credits: 15.0 Semester: 1

Availability: 2000-01

Anti-requisite: GG3035

Description: The aim of this module is to provide an understanding of urban development and urban problems in the developed countries of Europe and North America. This module will document the changing character of developed world cities and seek an explanation of these changes in the interrelationships between the processes of economic growth, social development and political control.

Class Hour: 11.00 am - 1.00 pm Tuesday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3037 Population Studies I

Credits: 15.0 Semester: 1

Availability: 2000-01

Anti-requisite: GG3037

Description: The first part of this module aims to equip students to execute and understand a variety of measures and concepts which are the basis of all demographic research, including: measures of mortality and fertility; period and cohort analysis; stable and stationary populations; natural fertility. The second part examines the major transformation of European populations from 1750 onwards, with particular attention given to Scotland. Students are encouraged to explore the many debates surrounding the explanation of this important episode in order to enhance their understanding of the complex interrelationships between social and demographic variables.

Class Hour: 2.00 - 4.00 pm Tuesday.

Teaching: 16 hours of lectures and seminars and one laboratory in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3038 Population Studies II

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisite: GE3037

Anti-requisites: GG3038, GE3071

Description: This module builds upon the expertise acquired in GE3037 Population Studies I (which is a pre-requisite) and applies it to analysis of contemporary population issues, including: the 'poverty trap'; mortality, fertility and economic-development; fertility, employment and attitudes to marriage; recent trends in mortality; ageing and the future of European populations. The final section of the module is devoted to a consideration of population policies in various parts of the world, including China and Singapore. It ends by asking whether Europe needs a population policy.

Class Hour: 2.00 - 4.00 pm Tuesday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3045 Southern Africa

Credits: 15.0 Semester: 1

Availability: 2001-02

Anti-requisite: GG3045

Description: This module offers an introductory exploration of a specific world region, southern Africa. Using recently developed theoretical frameworks like 'New Regional Geography', the module provides an assessment of the area's historical development as well as an analysis of contemporary social, economic and political issues. The module is delivered through both lectures and seminars and will require students to produce a research proposal as their continuous assessment task.

Class Hour: 11.00 am - 1.00 pm Monday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3019 Review Essay in Geography

Credits: 20.0 Semester: 2

Prerequisite: Available only to students in the second year of the Honours Programme.

Anti-requisite: GG3019

Description: This module involves the student in isolating a particular geographical topic, not directly involved in a selected option module, conducting a bibliographic search on that topic and then presenting a critical review of the content of the material obtained from a reading of the relevant books and journal articles. The topic chosen arises from a student's own particular interests but is finalised in discussions with a tutor. The final report is about 7,000 words in length.

Teaching: One lecture plus individual supervision.

Assessment: Essay = 100%

GE3025 Development Studies I

Credits: 15.0 Semester: 1

Availability: 2001-02

Anti-requisite: GG3025

Description: This module examines the development process in 'third world' countries and its association with economic growth, social development and political change. The course covers: the dimensions of development; the global structure of uneven development; theoretical and historical perspectives on development; North-South relations.

Class Hour: 11.00 am - 1.00 pm Tuesday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3026 Development Studies II

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisite: GE3025

Anti-requisite: GG3026

Description: This module builds on the theoretical and conceptual analysis of GE3025. It is designed to allow students to examine a variety of third world development policies and practices. Following an introductory lecture, students will evaluate a range of issues of topical concern in rural and urban 'third world' environments. Students will be responsible for developing an understanding of their selected topics and will be required to make a presentation to the class, for group discussion, on one of their chosen topics.

Class Hour: 11.00 am - 1.00 pm Tuesday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3029 Geography and Gender

Credits: 15.0 Semester: 2

Availability: 2001-02

Anti-requisite: GG3029

Description: This module re-examines some of the areas of enquiry commonly covered by geographers, but seeks to highlight the gender dimensions of these issues. The module reviews the theoretical positions underpinning different feminisms and considers whether there might be a specifically feminist methodology. Students determine the direction of the latter part of the module through their choice and presentation of group seminars.

Class Hour: 2.00 pm Tuesday and 10.00 am Wednesday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3035 Cities, Society and Space

GE3046 The European Union and Central and Eastern Europe: the background to integration

Credits: 15.0 Semester: 1

Prerequisite: Entry to Honours Geography or one of IR1003 or IR1004.

Anti-requisite: GG3046

Description: The module will introduce students to the theory of the integrated space economy, and to the economic geography of Europe, with special reference to the links between the countries of central and eastern Europe and the European Union. It will also introduce students to some of the sources of data about those links.

Class Hour: 12.00 noon Wednesday and 12.00 noon Thursday.

Teaching: Two classes each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3047 The European Union and Central and Eastern Europe: prospects for integration

Credits: 15.0 Semester: 2

Prerequisite: GG3046

Anti-requisite: GG3047

Description: This module will examine the processes of change which are occurring in the European space economy and assess the possibilities for the closer integration of the countries of central and eastern Europe with the European Union in the period up to the year 2020.

Class Hour: 12.00 noon Wednesday and 12.00 noon Thursday.

Teaching: Two classes each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3048 The Growing Awareness of Landscape I

Credits: 15.0 Semester: 1

Availability: 2000-01

Prerequisite: Entry to Honours Geography or one of AH2001 or AH2002.

Anti-requisite: GG3048

Description: This module seeks to answer the question ‘Why do we think that some landscapes are beautiful and others ugly?’ Following an introduction to landscape aesthetics, the course proceeds by charting the changing definitions of beautiful landscapes within the post-Renaissance Western European tradition. Topics covered include: landscapes of the Renaissance; the age of geometry; picturesque landscapes in England; the English discovery of the Scottish Highlands; industrial landscapes in the nineteenth century; changing views of the rural scene 1800-1950; and Utopian planning and twentieth century landscapes.

Class Hour: 10.00 am Tuesday and 4.00 pm Tuesday.

Teaching: Two classes each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3051 Environmental Management in Scotland

Credits: 15.0 Semester: 1

Availability: 2000-01

Anti-requisite: GG3051

Description: This module focuses on current environmental management issues in Scotland. It provides a presentation of the primary systems of land & resource management (eg. forestry, agriculture & crofting, wildlife, freshwater resources, conservation), and examples of the ways in which these systems interact. The aim is to leave students with an informed conceptual framework for evaluating management proposals and their implications for environmental, economic and social change. A particular focus, employing topical case studies and a field visit, is the conflicts that arise as interest groups with contrasting philosophies & value systems compete to determine the future of Scotland’s natural heritage within a new political framework.

Class Hour: 9.00 am Monday and 11.00 am Wednesday.

Teaching: 16 hours of lectures or seminars and a one-day field visit.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3060 Geographies of Imperialism and Colonialism I

Credits: 15.0 Semester: 1

Availability: 2000-01

Anti-requisite: GG3060

Description: This module will survey modern European imperialism and colonialism from a broadly geographical perspective. Emphasis will be placed on the issues of possession: on the various ways in which Europeans imagined, explored, represented, and went about taking, settling and controlling non-Euorpean space. Arguments and examples will be drawn from different parts of the imperial world.

Class Hour: 3.00 - 5.00 pm Monday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3061 Geographies of Imperialism and Colonialism II

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisite: GG3060 or GE3060

Anti-requisite: GG3061

Description: This module will illustrate some of the general arguments about modern European imperialism and colonialism advanced in GG3060/GE3060. The themes considered include: North America and 'noble savage', Africa and 'the white man's burden', and Asia and the discourse of Orientalism. This module concludes with a discussion of whether we now live in a 'postcolonial' age.

Class Hour: 3.00 - 5.00 pm Monday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3062 Geographies of European Modernity

Credits: 15.0 Semester: 1

Availability: 2001-02

Anti-requisite: GG3062

Description: This module will analyse some of the main dimensions of European modernity from a broadly geographical perspective. It considers the relations between capitalism, urbanism and the nation-state, analyses the spatial facets of modern power, and reflects on the course and legacies of the European Enlightenment. Emphasis is placed on Britain, but examples are also drawn from other parts of Europe.

Class Hour: 3.00 - 5.00 pm Monday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3070 Migration and Health

Credits: 15.0 Semester: 2

Availability: 2001-02

Anti-requisite: GG3034

Description: This module has three elements. The first introduces human migration, discussing theoretical approaches to migration, the varying types of mobility that exist, and the relationship between migration and issues such as employment, gender and the freedom to migrate. The second introduces the geography of health, focussing on socio-economic and spatial inequalities in health provision and outcomes. The third integrates these themes; topics include the role of migration in the spread of disease, adaptation to new environments and access to health care provision. The module will complement courses on population studies offered elsewhere in the honours degree programme.

Class Hour: 10.00 am - 12.00 noon Thursday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3071 Population: Developing Areas

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisite: GE3037

Anti-requisite: GE3038

Description: This module allows students to build upon the skills and understanding acquired in GE3037 and to apply these to the analysis of population issues in developing areas. Starting from a global view of the problems of population growth, students then investigate the dynamics of both mortality and fertility change in various parts of the third world during the late twentieth century. This is followed by a consideration of (1) the implications of these trends for economic development and (2) the appropriateness, as well as the effectiveness, of particular population policies. The module is seminar-based, with students taking responsibility for seminar presentation and discussion.

Class Hour: 2.00 - 4.00 pm Tuesday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GE3072 HIV/AIDS in Africa

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisites: GE3045 or GE3025; or GE3071

Description: This module addresses the uneven global geography of the HIV/AIDS pandemic and its concentration in Africa. It examines why social scientific, not just biomedical, research is vital and eplores the regionally specific dimensions of the virus's rapid spread in this context. The module also investigates the social, political and economic implications of HIV/AIDS for Africa's development. It concludes by looking towards future local and global initiatives that might help reduce transmission and ease the human suffering caused by HIV/AIDS in Africa. The module consists of an introductory and concluding lecture and a programme of student-led seminars.

Class Hour: 3.00 - 5.00 pm Monday.

Teaching: 16 hours of lectures and seminars in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3011 Introduction to Geographical Information Systems

Credits: 10.0 Semester: 1

Availability: Available only to students in the first year of their Honours Programme.

Description: This module aims to introduce how to acquire, store, analyse and display spatial digital data and to provide students with the skills necessary to perform standard data manipulation on a number of datasets with a variety of visualisation techniques. Topics will include: 1) an overview of the software and hardware available for handling digital data; 2) the structure and formats of digital data and how to interpolate and manipulate data; 3) 2D and 3D spatial analysis, including producing contoured and shaded relief maps of various datasets; and 4) overlaying multiple datasets on 2D and 3D data. The module will end with a small individual project that begins by building a G.I.S. project plan and incorporates a dataset chosen from one of a number of provided sources including both human and physical geography and geoscience.

Class Hour: 9.00 am - 12.00 noon Friday.

Teaching: One lecture and one two-hour practical class each week over 6 weeks.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GG3021 Applied Biogeography

Credits: 15.0 Semester: 1

Prerequisites: GG2003, GG2004

Description: The aim of this module is to examine (i) the cumulative and catastrophic impact of human activities on selected ecosystems, and (ii) some of the conservation measures possible to reverse, neutralise or prevent human degradation of aquatic and terrestrial ecosystems.

Class Hour: 9.00 am Tuesday and 9.00 am Wednesday.

Teaching: Two classes each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3023 Biogeography : Palaeoecology

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisites: GG2003, GG2004

Description: This module aims to examine the changes which have occurred to vegetation and soils over long timescales. Although the course will begin with an examination of factors such as the beginning of life and evolution, the greater part of the course will concentrate on vegetation and soil changes which took place during the Quaternary period. The theoretical material will be reinforced through a laboratory study of pollen sampled from a core collected from a lake or peat bog.

Class Hour: 9.00 - 11.00 am Tuesday.

Teaching: One 2 hour class each week and two full-day field excursions.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3036 Periglacial Geomorphology

Credits: 15.0 Semester: 1

Availability: 2001-02

Prerequisites: GG2003, GG2004

Anti-requisites: GG3056, GG3057

Description: This module investigates landform development in past and present periglacial environments, with emphasis on geomorphic processes and environmental controls. Topics include: (i) permafrost and frost action processes; (ii) periglacial weathering; (iii) nivation and cryoplanation; (iv) the role of running water in permafrost environments; (v) solifluction; (vi) protalus ramparts and rock glaciers; (vii) patterned ground and its significance; (viii) the periglaciation of upland Scotland. Students may be required to attend a one-day field course.

Class Hour: 10.00 am Tuesday and 4.00 pm Tuesday.

Teaching: Two lectures each week and one field day excursion.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3041 Quaternary Geomorphology of Scotland I

Credits: 15.0 Semester: 1

Availability: 2001-02

Prerequisites: GG2003, GG2004

Description: This course provides an introduction to the chronology and significance of Quaternary events in Scotland, and of the techniques used to establish past environmental conditions. Topics covered include: (i) pre-Quaternary landscape evolution; (ii) the Quaternary timescale; (iii) pre-Devensian glacials and interglacials; (iv) the Devensian glacial stage; (v) the Loch Lomond Stadial: glaciation, periglaciation and climate; (vi) sea-level changes; (vii) Holocene landscape changes.

Class Hour: 10.00 am - 12.00 noon Thursday.

Teaching: Two lectures each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3042 Quaternary Geomorphology of Scotland II

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisites: GG2003, GG2004,GG3041

Description: The aim of this course is to explore the role of climatic change during the Quaternary in producing the complex natural environment of Scotland today. Knowledge of Quaternary history is important in that it provides direct evidence of the rate at which natural processes can occur. The geomorphological evolution of selected areas of Scotland will be examined by a series of regional studies of their Late Quaternary history. All students will select a particular region and will write a report on the Quaternary geomorphology of the area and present the results of their investigations, in seminar format, to the remainder of the class.

Class Hour: 10.00 am - 12.00 noon Thursday.

Teaching: Two lectures each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3052 Coastal Environments and Sea Level Change

Credits: 15.0 Semester: 1

Availability: 2001-02

Prerequisites: GG2003, GG2004

Description: Processes affecting coastal lowlands are considered at different scales from the global to the epicontinental seaand to the local scale. The role of sea-level changes over different time periods is assessed as a fundamental factor in understanding the history and evolution of coasts. Examples are taken from landforms of unconsolidated sediments, particularly sand dunes, saltmarshes, deltas, lagoon and tidal flats. Case studies will be given from Brazil, Bangladesh, India, Southern China and North-west Europe.

Class Hour: 11.00 am - 1.00 pm Monday.

Teaching: Sixteen hours plus a field class.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3056 Glaciers and Glacial Processes I

Credits: 15.0 Semester: 1

Availability: 2000-01

Prerequisites: GG2003, GG2004

Description: This module focuses on glaciers in all their diversity of form and dynamics - how they form, flow, and fluctuate, the complex ways in which they interact with the world's climate system, and the processes by which they modify the landscape through erosion.

Class Hour: 10.00 am Monday and 2.00 pm Monday.

Teaching: Sixteen hours of lectures or seminars.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3057 Glaciers and Glacial Processes II

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisites: GG2003, GG2004,GG3056

Description: This module, building on the foundations laid in GG3056, focuses on the interactive links between glacial processes, and the landforms, landscapes and sediments that those processes produce, whether under the ice, on land around glaciers, or in aquatic settings around ice margins. A theme running through the course is the way in which studies of the products of glacial action can illuminate glacial processes, and the converse - how studies of glacial processes facilitate the interpretation of glacial landforms and sediments.

Class Hour: 10.00 am Monday and 2.00 pm Monday.

Teaching: Sixteen hours of lectures or seminars.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3058 Quaternary Environmental Reconstruction I

Credits: 15.0 Semester: 1

Availability: 2000-01

Prerequisites: GG2003, GG2004

Description: This module will develop an understanding of the theory and practice of Quaternary environmental reconstruction. It will consider the types of evidence used in such reconstructions and the methods used to collect, analyse and interpret such evidence. The critical role of long-term records of environmental change through the Quaternary will also be introduced.

Class Hour: 12.00 noon Wednesday and 12.00 noon Thursday.

Teaching: Two classes each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3059 Quaternary Environmental Reconstruction II

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisites: GG2003, GG2004GG3058

Description: This module, based upon the knowledge gained in GG3058, will illustrate the application of the methods used for Quaternary environmental reconstruction by considering a number of critical case studies. These will include both regional and thematic examples. The Quaternary history of specific regions of Britain and current developments in Quaternary science ware also examined.

Class Hour: 12.00 noon Wednesday and 12.00 noon Thursday.

Teaching: Two classes each week.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3067 Oceans and Climate

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisites: GG2003 & GG2004 *and* entry into either Honours Geography or Honours Geoscience

Description: The aim of the module is to provide an understanding of the role played by oceans in the global climate system. Particular objectives are: (1) to foster understanding of changes in oceanic and climatic circulation, the possible mechanisms for such changes, and wider implications in terms of past, present and future global and regional climates; and (2) to provide practical experience of some research methods employed to determine oceanographic changes.

Class Hour: 11.00 am - 1.00 pm Monday.

Teaching: Two classes.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3068 Atmospheric Pollution

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisites: GG2003 & GG2004 *and* entry into either Honours Geography or Honours Geoscience

Description: The aim of the module is examine human impact on the atmosphere, and the implications that atmospheric change has for human societies. The module explores a range of air pollution issues, including: urban and indoor air quality; long range air pollution (e.g. acid rain, Gulf War fires, Indonesian forest fires); radioactive air pollution (including the effects of atmospheric bomb testing and the Chernobyl reactor accident); stratospheric ozone destruction; natural and anthropogenic climate change. The module examines the basic physics and chemistry of the formation, transport, and deposition of atmospheric pollutants, and considers the human and environmental implications of air pollution. The module concludes with a consideration of the ways in which human damage to the atmosphere can be controlled. Prior knowledge of physics, chemistry and meteorology is helpful but not essential.

Class Hour: 10.00 am - 12.00 noon Wednesday.

Teaching: Two classes.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3069 Climate and Weather Systems

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisites: GG2003 & GG2004 *and* entry into either Honours Geography or Honours Geoscience

Description: This module covers the behaviour of the earth's atmosphere and its circulation at a range of scales, from small-scale processes operating within clouds, up to the global climate system. It aims to strike a balance between description (using a wide selection of satellite images, photographs, and videos) and explanation (using in-class demonstrations of physical processes wherever possible). Physical laws will be introduced to describe basic concepts such as the behaviour of gases and the motion of the atmosphere.

Class Hour: 12.00 noon Monday and 12.00 noon Tuesday.

Teaching: Two classes.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3073 Evolution of the Scottish Cultural Landscape

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisites: **either** GG3021 **or** GG3023

Description: The module examines the human impact on the Scottish physical environment during the period since the last glacial stage. A series of themes are explored (e.g. the evidence for human impact before the elm decline, the validity of theories used to explain the elm decline, early farming cultures and their impact) and readings for the module concentrate on the palaeoecological and archaeological literature. From this students will appreciate the difficulties of interpreting the available evidence and will be able to identify ways in which these difficulties might be overcome. The module also emphasises the long history of human action which is contained within the present landscape of Scotland.

Class Hour: 9.00 - 11.00 am Thursday.

Teaching: 16 hours of lectures, seminars and fieldwork in total.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3081 Earth Internal Processes

Credits: 15.0 Semester: 1

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography

Description: This is a core module in Geoscience delivered early in the honours programme providing a framework for interpreting the major processes acting within the earth's crust and mantle. The module serves as preparation for a range of optional modules on related themes, and will provide some theoretical and practical preparation for honours dissertations involving igneous petrology, metamorphic petrology and/or structural geology.

Class Hour: To be arranged.

Teaching: 19 lectures, 28 hours of practical, two or more days of field training.

Assessment: Continuous Assessment = 100%

GG3082 Sedimentary Environments and Depositional Frameworks

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography

Description: This module provides a training in critical examination and interpretation of the Earth's sedimentary rock record. The module teaches the skills and techniques for observing, recognising, recording, and assessing sedimentological and stratigraphic data. The major sedimentary depositional environments and their characteristic stratal frameworks and facies are presented within a basinal setting. The practical skills of section logging and facies interpretation are developed principally in the field setting.

Class Hour: To be arranged.

Teaching: 13 lectures, 3 seminars, at least 4 days of field study.

Assessment: Continuous Assessment = 67%, One-and-a-half Hour Examination = 33%

GG3083 Granites and Basalts

Credits: 15.0 Semester: 2

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography, *and* GG3081

Description: The earth's crust is largely created by acid and basic magmatism. The module explores the nature of that magmatism, the petrography and geochemistry of the rocks created, and the petrogenesis and evolution of the magma. The petrological characteristics of the continental crust and of the upper mantle, the principal sources of acid and basic magmas, are examined in detail for the influence which these have on the magmas created by partial melting.

Class Hour: To be arranged.

Teaching: 18 lectures, 15 hours of laboratory work, 18 hours of field study.

Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3084 Composition of the Solid Earth

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography, *and* GG3081

Description: The lithosphere is a major geochemical system that operates on a range of scales from sub-microscopic (e.g. the behaviour of atoms in individual crystals), to mesoscopic (e.g. the movement of atoms between crystals in rocks), to macroscopic (e.g. the creation of magma above a subduction zone). This module develops an understanding of aspects of lithosphere composition including mineral composition and its determination, mineral structures and how they respond to changes in the physical and chemical environment, the composition of the crust and the relationship between rocks, minerals and fluids, paying particular attention to the crustal-fluid processes leading to the creation of ore deposits.

Class Hour: To be arranged.

Teaching: Total of 32 hours lectures and laboratory classes.

Assessment: Continuous Assessment = 67%, One-and-a-half Hour Examination = 33%

GG3085 Geodynamics

Credits: 15.0 Semester: 1

Availability: 2001-02

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography, *and* GG3081

Description: A study of the geodynamic evolution of the earth's crust and associated atmosphere and hydrosphere since the Archaean. The module contrasts geodynamic evolution in the Archaean, Proterozoic, Palaeozoic and Mesozoic using a number of case studies, including examples visited in the field. The module develops skills of geodynamic interpretation, field observation, report writing and oral presentation.

Class Hour: To be arranged.

Teaching: 12 lectures, 1 laboratory class, 2 days in the field

Assessment: Continuous Assessment = 67%, One-and-a-half Hour Examination = 33%

GG3086 Tectonics and Structural Geology

Credits: 15.0 Semester: 1

Availability: 2001-02

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography, *and* GG3081

Description: This module analyses deformation at different crustal depths and within different tectonic environments, as applied to sedimentary, metamorphic and igneous rocks. Scenarios are developed using global examples and particular case studies from the Caledonides, some of which will be examined in the field. The module develops skills of structural and tectonic interpretation, field and laboratory observation, and report writing.

Class Hour: To be arranged.

Teaching: 12 lectures, 2 laboratory classes, two or more days in the field

Assessment: Continuous Assessment = 67%, One-and-a-half Hour Examination = 33%

GG3087 Physical Sedimentology & Basin Analysis: Process & Product

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography, *and* GG3082

Description: This module provides a quantitative assessment and understanding of the physical processes governing the genesis of sedimentary rocks and basins. It builds broadly on the mostly qualitative skills of GS3082 by utilising a process-based approach to examine the nature of, and the linkages between sediment transport, surficial denudation and tectonic processes generating accommodation space and basin evolution.

Class Hour: To be arranged.

Teaching: 12 lectures, 4 seminars, 2 lab classes, 1 field excursion

Assessment: Continuous Assessment = 67%, One-and-a-half Hour Examination = 33%

GG3088 Petroleum Exploration and Geophysics

Credits: 15.0 Semester: 2

Availability: 2001-02

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography

Description: The fundamental concepts, techniques and practices of the hydrocarbon exploration industry are presented. Students will gain a thorough understanding of the geoscience of petroleum exploration, particularly using geophysical methods, and a working knowledge of modern concepts in oil and gas geology.

Class Hour: To be arranged.

Teaching: 17 lectures, 15 hours laboratory classes, field classes

Assessment: Continuous Assessment = 67%, One-and-a-half Hour Examination = 33%

GG3089 Environmental Geoscience

Credits: 15.0 Semester: 1

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, *and* admission to Honours Geoscience or Honours Geography

Description: The module focuses on methodologies used for solving problems facing environmental geoscientists, particularly in waste disposal, ground contamination, soil erosion, sustainability of resources and land conservation. The necessary theoretical background in geotechnical engineering, environmental geophysics, hydrogeology and environmental geochemistry is supplemented with a training in remote investigation, particularly geophysics. Case histories are used extensively.

Class Hour: To be arranged.

Teaching: 17 lectures, 15 hours of laboratory classes, two or more field classes.

Assessment: Continuous Assessment = 67%, One-and-a-half Hour Examination = 33%

GL3001 Independent Research Project in Geology

Credits: 40.0 Semester: Whole Year

Availability: 2000-01 only

Prerequisite: Available only to students in the second year of the Honours Programme.

Description: This module is compulsory for students taking Honours degrees in Geology, Environmental Geology or Geoscience. It is designed to develop students' research skills. They will learn how to assemble a set of data and present this at a seminar. Each student is required to undertake reading to select a suitable topic or a location to undertake geological mapping. The student will carry out approved field or laboratory work for at least four weeks during the summer vacation under the guidance of an adviser. The field and laboratory work will be accompanied by a relevant reading programme, which is expected to lead to further analytical work. The production of a substantial dissertation on the topic is an essential part of the programme.

Class Hour: To be arranged.

Teaching: Up to 4 weeks fieldwork; area to be selected with adviser. Progress meeting with adviser during semesters. Seminar presented on project.

Assessment: Dissertation = 100%

GL3007 Senior Honours Essay in Geology

Credits: 10.0 Semester: 1

Availability: 2000-01 only

Description: This is a core module undertaken in the second year of the Honours Programme. It enables students to explore an aspect of geology that interests them. A staff member will approve the topic and provide assistance with references. The student will carry out a library search, a substantial programme of reading from original papers and learn to collate material from disparate sources. The techniques of essay production will be discussed with staff. The essay will not be more than 3,000 words long. It will be prepared during free study periods and will be type-written.

Teaching: Students work on their essays during private study time.

Assessment: Essay = 100%

GL3008 Excursion/Map Interpretation/General Essay

Credits: 20.0 Semester: Whole Year

Availability: 2000-01 only

Description: This is a core module. The students in the second year of the Honours Programme will take an excursion lasting between 7 and 10 days, to visit classical geological locations in the British Isles or Europe. They will prepare a type-written report of not more than 2,000 words, describing the significance of what they have seen and learnt. Assessed map interpretations will be carried out on classical European and British geological maps. The General Essay Examination will be a 3 hour examination, in which each student will write two essays based on their general geological knowledge from four years of lectures, laboratories, field classes, in house seminars, visiting lecturers' seminars, and excursions.

Teaching: One 3 hour laboratory each week.

Assessment: Continuous Assessment = 25%, Two 3 Hour Examinations = 75%

GL3010 Phase Diagrams in Igneous Petrology

Credits: 10.0 Semester: 1

Availability: 2000-01 only

Description: Magmas are created by partial melting of rocks; they then evolve chemically, largely by fractional crystallisation. Both processes involve chemical reactions between crystals and silicate melts. The nature of these reactions has been elucidated largely through the investigation of the phase-equilibrium relations of simple silicate systems. The course examines one-, two-, and three-component silicate systems, and what they reveal about the effects of discontinuous reactions, continuous reactions, pressure and water pressure on the genesis of magmas and their differentiation. The course adopts a seminar approach to the teaching, with short lectures to introduce each system, exercises to predict courses of melting and crystallisation, and students reporting their results in open forum. A thermodynamic approach is not adopted.

Class Hour: To be arranged.

Teaching: Total of 24 hours of lectures and practical classes.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GL3017 Inorganic and Organic Geochemistry

Credits: 10.0 Semester: 2

Availability: 2000-01 only

Description: The module commences with an introduction to the origin of the elements in the Solar system, and then discusses the significance of data obtained from meteorites, comets and the planets. Clues can be obtained to the origin of life and the abiogenic synthesis of organic compounds in the early Precambrian. The module ends with Phanerozoic examples of the chemical and isotopic changes in biogenic organic compounds during the diagenetic synthesis of bitumen and kerogen.

Class Hour: To be arranged.

Teaching: Total of 24 hours of lectures, practical classes and excursions.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GL3019 Precambrian and Caledonian History

Credits: 10.0 Semester: 1

Availability: 2000-01 only

Description: The histories of two depositional areas showing contrasting tectonic and evolutionary patterns are examined. The first case is a study of the development of the late Precambrian - early Palaeozoic Iapetus Ocean and its subsequent incorporation into the Appalachian-Caledonian fold-mountain belt, with the establishment of continental sedimentation. The second involves examination of the postorogenic depositional environments of the Carboniferous of the Scottish Midland Valley, involving the cyclical interplay of marine and deltaic sedimentation associated with repeated changes in sea level, and the influence of contemporary tectonism and volcanism. Both topics include geological map interpretation, and the Carboniferous involves fieldwork.

Class Hour: To be arranged.

Teaching: Total of 24 hours of lectures, practical classes and excursions.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GL3020 Upper Palaeozoic and Cenozoic History

Credits: 10.0 Semester: 2

Availability: 2000-01 only

Description: Four depositional basins are studied. The first case covers the post-Hercynian palaeogeography of western Europe in palaeoenvironmental terms, concentrating on the threefold division of the Triassic System, the contrasts between its Alpine marine and evaporite sequences and its dominantly terrestrial northern development. The second examines the North Sea basin in the context of palaeogeography and rifting tectonics. The third topic is an examination of the evolution of the North Atlantic and Arctic Oceans and their magnetism in relation to crustal and deep-seated processes, and the fourth examines North Borneo as an example of a modern subduction and obduction complex.

Class Hour: To be arranged.

Teaching: Total of 24 hours of lectures, practical classes and excursions.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GL3023 Igneous Modelling and Mantle Petrology

Credits: 10.0 Semester: 1

Availability: 2000-01 only

Prerequisite: GL2002

Description: One part of this course is an introduction to (i) the use of major and trace element analysis of igneous rocks in testing petrogenetic hypotheses about inter-relationships between members of rock suites, and (ii) to the use of radiogenic isotopes to explore the source regions of magmas and possible interactions between ascending magma and the crust. The other part is an examination of the mineralogical and chemical characteristics of terrestrial basalts, of how and where they are formed and of the information which they contain about their source region, the upper mantle. A knowledge of GL2002 is assumed but no special knowledge of chemistry is required.

Class Hour: To be arranged.

Teaching: Total of 24 hours of lectures, practical classes and excursions.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GL3024 Global Igneous Activity

Credits: 10.0 Semester: 2

Availability: 2000-01 only

Prerequisite: GL3023

Description: The course investigates the relationship between the characteristics of present-day magmatism and global tectonic processes. It deals with basalts erupted at mid-ocean ridges and black-arc basins; with volcanic suites in island arcs and with volcanic and plutonic suites at continental margins above subduction zones; with the variety of magma types from which ocean islands are built; with continental flood basalts; with continental rift valley magmatism; and with intra-cratonic magmas. The use of this information in interpreting the petrogenesis and the tectonic environment of formation of ancient rocks is discussed, along with the petrology of komatitic lavas and Proterozoic anorthosite batholiths, which have no modern counterparts.

Class Hour: To be arranged.

Teaching: Total of 24 hours of lectures, practical classes and excursions.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GL3025 Environmental Geology

Credits: 10.0 Semester: 2

Availability: 2000-01 only

Description: This module addresses the problems of human impact on the geo-environment and vice versa. It gives the basis for environmental assessment, monitoring, management and consultancy. The syllabus covers: (i) the role of the environmental geologist; (ii) environmental engineering geology: properties of rocks and soils; roads, tunnels, dams, bridges, quarries and water supplies; (iii) environmental geochemistry: hydrologic cycles, chemical evolution of ground waters, water pollution, biodegradation, organics in ground water, air pollution, greenhouse effects, ozone; (iv) the environmental impact of: nuclear waste, non-nuclear liquid and solid waste, urban development, land use planning, conservation, mining, legislation.

Class Hour: To be arranged.

Teaching: Total of 24 hours of lectures, practical classes and excursions.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GL3026 Geochemistry Degree Project

Credits: 20.0 (plus 15.0 from Chemistry) Semester: Whole Year

Availability: 2000-01 only Available only to students in the second year of the Honours Programme

Description: This is an interdisciplinary module combining both geology and chemistry components specifically designed for Geochemistry degree students to gain field experience and/or laboratory expertise in a project of geochemical interest. Supervised project fieldwork at an approved world location, or project placement in a Research Laboratory of an International Institution is undertaken during four weeks of the summer vacation. Semester 1 is devoted to completion of the analytical and geological aspects of the project as well as preparing a preliminary presentation for the end of semester 1. The project should be completed and submitted for assessment no later than week 9 of Semester 2.

Teaching: Regular tutorials for supervision.

Assessment: Dissertation = 100%

GL3027 Joint Honours Independent Project

Credits: 20.0 Semester: Whole Year

Availability: 2000-01 only Available only to students in the second year of the Honours Programme.

Description: This module is compulsory for students taking Joint Honours degrees in Geology and another subject. It is designed to develop students' research skills. They will learn how to assemble a set of data and present this at a seminar. Each student is required to undertake reading to select a suitable joint topic or location to undertake a joint geological investigation. The student will carry out approved field or laboratory work for at least four weeks during the summer vacation, supervised from both departments. The field and laboratory work will be accompanied by a relevant reading programme, which is expected to lead to further analytical work. The production of a substantial dissertation on the topic is an essential part of the programme.

Class Hour: To be arranged.

Teaching: Two 3 hour laboratories each week and up to four weeks of fieldwork, topic to be selected with supervisors.

Assessment: Dissertation = 100%

GL3028 Excursion/Map Interpretation/Geochemical Essays

Credits: 15.0 Semester: Whole Year

Availability: 2000-01 only

Description: Geochemistry degree students proceeding to the second year of the Honours Programme complete a field excursion during the period prior to matriculation (in association with GL3008) visiting classical geological locations in the British Isles or Europe for 7 to 10 days. A type-written report of not more than 2,000 words describing the geological significance of the excursion is submitted for assessment. Assessed interpretations on classical European and British geological maps will be completed during Semesters 1 and 2. The Geochemical Essays will take the form of a 3 hour examination period at the end of Semester 2 during which the student will complete two essays based on their integrated geochemical knowledge gleaned from both the Geology component and the Chemistry component.

Teaching: One 3 hour laboratory

Assessment: Continuous Assessment = 50%, One 3 Hour Examination = 50%

GL3030 Joint Honours Excursion and Map Interpretation

Credits: 10.0 Semester: Whole Year

Availability: 2000-01 only

Description: This is a core module. Immediately prior to commencing the second year of the Honours programme, students will attend an excursion lasting between 7 and 10 days to visit classic geological locations in the British Isles or Europe. They will prepare a type-written report of not more than 2000 words, describing the significance of what they have seen and learnt. Map interpretation exercises will be carried out on European and British geological maps. Students select maps from either the Junior or the Senior Honours Map Interpretation classes.

Teaching: 3 Hour laboratory on six occasions.

Assessment: Continuous Assessment = 100%

GL3033 Petroleum and Reservoir Geology

Credits: 10.0 Semester: 1

Availability: 2000-01 only

Prerequisite: Entry to an Honours Programme in Geology, Environmental Geology or Geoscience.

Description: Understanding the geology of petroleum reservoirs is of considerable importance to the oil and gas industry. Such understanding is gained from integrating information from diverse sources including stratigraphic and geophysical logs, sedimentary petrography and geochemistry. The lecture course covers the application of these techniques to reservoir geology followed by a consideration of resource evaluation and production methodologies. These aspects are illustrated with detailed case studies. The accompanying practical course gives students hands-on experience of geophysical equipment in the field and a series of "exploration-play" exercises in the laboratory.

Class Hour: To be arranged.

Teaching: 12 lectures and 12 hours of laboratory classes.

Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GS3001 Dissertation in Environmental Geoscience

Credits: 30.0 Semester: Whole Year

Availability: 2000-01 only

Prerequisite: Available only to students completing an Environmental Geoscience degree

Description: The aim of this module is to test the ability of students to complete an original piece of research work, including formulation of a viable topic, data collection and analysis, and writing up of the results in the form of a dissertation not exceeding 10,000 words in length. The topic of research will normally relate to one or more of the taught modules in the Environmental Geoscience degree programme, and must be approved by an appropriate member of staff who will act as supervisor. A viable plan for research must be approved by the project supervisor by the end of the second semester of the first year of the Honours Programme. The dissertation must be completed by Monday of the 7th week of the Second Semester of the second year of the Honours Programme.

Class Hour: To be arranged.

Teaching: Up to 4 weeks of fieldwork; progress meetings with supervisor(s)

Assessment: Dissertation = 100%

GS3002 Data Analysis and Numerical Methods in Geoscience

Credits: 10.0 Semester: 1

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience

Anti-requisite: GE3005

Description: This module is designed to give students an introduction to the handling, presentation and analysis of numerical data within the context of Geoscience. Topics will include (i) understanding data types, (ii) data presentation and basic descriptive statistics, (iii) probability, (iv) hypothesis testing using parametric statistics, (v) correlation and regression, (vi) introduction to numerical methods in Geoscience. The MINITAB statistical package will be used to apply these techniques to the analysis of large data sets.

Class Hour: To be arranged.

Teaching: One lecture and one practical class each week

Assessment: 3 Hour Examination = 100%

GS3003 Cartographical and Presentational Skills

Credits: 10.0 Semester: 1

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience

Description: This module provides a training in transforming various forms of geoscience data into two-dimensional computer graphics. In particular basic map design and computer-based cartographic techniques are used to create a range of geological, thematic and chloropleth maps. The module then applies these techniques in combination with image manipulation to create various types of visual presentation of geoscientific themes.

Class Hour: To be arranged.

Teaching: 18 hours of class work

Assessment: Continuous Assessment = 100%

GS3004 Field Mapping and Map Interpretation

Credits: 30.0 Semester: Whole Year

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience

Description: This module will train students to observe, record and interpret geological features in the field and on maps. Emphasis will be placed on developing models from observations and devising tests of these models. Specifically, students are trained to think in three spatial dimensions as well as time. As well as field and interpretive skills, students will develop the key skills of logistical organisation, team working and presentation of reports.

Class Hour: To be arranged.

Teaching: Two field courses of 14 and 7 days respectively, plus 5 three hour laboratory classes.

Assessment: Continuous Assessment = 100%

GS3005 Honours Field Excursion

Credits: 10.0 Semester: Summer vacation between JH & SH

Availability: 2000-01

Prerequisites: GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience

Description: Building on the field training of JH this module is designed to develop the field observation and interpretation skills of collecting, recording, interpreting and synthesising data in the field. The field course will be thematic and examine all aspects of a region using an integrated approach. Theme and location may vary but the excursion will generally be based within a well-exposed orogenic belt with the aim of traversing from the foreland to the interior.

Class Hour: not applicable

Teaching: About 12 days of field-based instruction and exercises

Assessment: Continuous Assessment = 100%

GS3006 Research Review and Presentations

Credits: 10.0 Semester: 1

Availability: 2001-02

Prerequisites: GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience

Description: The student selects a particular geoscience topic, one that is not directly dealt with in a subject module, conducts literature and web research and then writes a critical review of ca. 3000 words. The topic is also reported in the form of both an illustrated poster, and in a short seminar followed by questions. There will be a short course on giving verbal presentations.

Class Hour: not applicable.

Teaching: One lecture and four class meetings.

Assessment: Continuous Assessment = 100%

GS3007 Map Interpretation and Remote Sensing

Credits: 10.0 Semester: 1

Availability: 2001-02

Prerequisites: GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience

Description: This module continues the training in the interpretation of the geology of a region as represented on a geological map. In addition, students will be trained in the techniques of interpreting remotely sensed images of the Earth's surface by aerial photography and satellite imagery.

Class Hour: To be arranged.

Teaching: 10 laboratory sessions

Assessment: Continuous Assessment = 100%

GS3008 Research Dissertation

Credits:	30.0	Semester:	Whole Year
Availability:	2001-02		
Prerequisites:	GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience		
Description:	An individual research project which allows the student to pursue in depth a topic of personal interest. The student works largely independently of supervision and has the opportunity to demonstrate individuality, initiative and enterprise. Skills of planning and executing research are learnt, as well as the ability to work independently, and present the results orally and in dissertation form (up to 10,000 words).		
Class Hour:	Not applicable.		
Teaching:	none		
Assessment:	Dissertation = 100%		

GS3009 Joint Honours Research Project

Credits:	15.0	Semester:	Whole Year
Availability:	2001-02		
Prerequisites:	GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience		
Description:	An individual research project which allows the student to pursue in depth a topic of personal interest. The student works largely independently of supervision and has the opportunity to demonstrate individuality, initiative and enterprise. Skills of planning and executing research are learnt, as well as the ability to work independently, and present the results orally and in dissertation form.		
Class Hour:	not applicable.		
Teaching:	none		
Assessment:	Dissertation = 100%		

GS3010 Joint Honours Research Review

Credits:	**5.0**	**Semester:**	**1 or 2**
Availability:	**2001-02**		
Prerequisites:	**GS2001, GS2002, GG2003, GG2004, and admission to Honours Geoscience**		
Description:	**The student identifies a particular geoscience topic, one that is not directly dealt with in a subject module, conducts literature and web research and then writes a critical review.**		
Class Hour:	**Not applicable.**		
Teaching:	**none**		
Assessment:	**Continuous Assessment = 100%**		