

School of Geography & Geosciences

Important Degree Information:

B.Sc./M.A. Honours

The general requirements are 480 credits over a period of normally 4 years (and not more than 5 years) or part-time equivalent; the final two years being an approved Honours programme of 240 credits, of which 90 credits are at 4000 level and at least a further 120 credits at 3000 and/or 4000 levels. Refer to the appropriate Faculty regulations for lists of subjects recognised as qualifying towards either a B.Sc. or M.A. degree.

B.Sc./M.A. Honours with Integrated Year Abroad

The general requirements are 540 credits over a period of normally 5 years (and not more than 6 years) or part-time equivalent; the final three years being an approved Honours programme of 300 credits, of which 60 credits are gained during the integrated year abroad, 90 credits are at 4000 level and at least a further 120 credits at 3000 and/or 4000 levels. Refer to the appropriate Faculty regulations for lists of subjects recognised as qualifying towards either a B.Sc. or M.A. degree.

Other Information: 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.

Degree Programmes	Programme Requirements at:
(M.A. Honours or B.Sc. Honours): Geography	<p>Single Honours Geography:</p> <p>Level 1: 40 credits comprising passes in (GE1001 or GG1001) and (GE1002 or GG1002)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: GE3001, GE3002, GE3004 and GE3005; <i>plus</i> either GE3006 or GE3007; <i>plus</i> either GE3008 or GG3011; <i>plus</i> GE4014, GE4018 and GE4019; <i>plus</i> 120 additional 3000 and 4000 level credits of which at least 90 credits must be from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits must be at 4000 level.</p>

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Degree Programmes	Programme Requirements at:
<p>(M.A. Honours): Geography and Art History, Classical Studies, Economics, English*, Film Studies, French^, Hebrew, International Relations, Italian^, Management~, Mediaeval History, Middle East Studies, Modern History, Philosophy, Psychology, Scottish History, Social Anthropology, Spanish^, Theological Studies.</p> <p>(B.Sc. Honours): Geography and Management~, Management Science, Mathematics, Statistics.</p> <p>^ available also as ‘With Integrated Year Abroad Degrees’</p> <p>~Timetable clash exists, therefore this combination is subject to arrangement with both Departments.</p> <p>* Timetable clash means that 2000 level English must be taken in the First year to do this combination</p>	<p>Geography element of Joint Honours Degrees: Level 1: 40 credits comprising passes (GE1001 or GG1001) and (GE1002 or GG1002)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: 30 credits from GE3001, GE3002, GE3004, GE3005, either GE3006 or GE3007, GE3008, GG3011, GE4014; <i>plus</i> GE4018; <i>plus</i> 60 additional 3000 and 4000 level credits from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from Joint Honours subjects must be at 4000 level.</p>
<p>(B.Sc. Honours): Geography and Environmental Biology</p>	<p>Geography element of Joint Degree: Level 1: 40 credits comprising passes in (GE1001 or GG1001) and (GE1002 or GG1002)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: 30 credits from GE3001, GE3002, GE3004, GE3005, either GE3006 or GE3007, GE3008, GG3011, GE4014; <i>plus</i> GE4018; <i>plus</i> 60 additional 3000 and 4000 level credits from GE3025 – GE3077, GE4026 – GE4090 and/or GG3021 – GG3089, GG4042 – GG4073, GG4082. Of the 240 credits required for an Honours degree, 90 credits from Joint Honours subjects must be at 4000 level.</p>
<p>(M.A. Honours): Geography with Social Anthropology or Spanish^</p> <p>(B.Sc. Honours): Geography with French^ Not available to entrants from 2008-09</p> <p>^available also as ‘With Integrated Year Abroad Degree’</p>	<p>Geography element of Major Degrees: Level 1: 40 credits comprising passes in (GE1001 or GG1001) and (GE1002 or GG1002)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: GE3004, GE4014; <i>plus</i> any four of : GE3001, GE3002, GE3005, either GE3006 or GE3007, GE3008, GG3011; <i>plus</i> GE4018; <i>plus</i> 90 additional 3000 and 4000 level credits from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from major and/or minor subjects must be at 4000 level.</p>

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Degree Programmes	Programme Requirements at:
<p>(M.A. Honours): Psychology, Russian[^], Social Anthropology or Spanish[^] with Geography.</p> <p>[^] available also as 'With Integrated Year Abroad Degree'</p>	<p>Geography element of Minor M.A. Degrees: Level 1: 40 credits comprising passes in (GE1001 or GG1001) and (GE1002 or GG1002)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: 80 credits from GE or GG 3000 and 4000 level modules, at least 60 credits of which must be from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from major and/or minor subjects must be at 4000 level.</p>
<p>(B.Sc. Honours): Mathematics with Geography</p>	<p>Geography element of Minor B.Sc. Degree: Level 1: 40 credits comprising passes in (GE1001 or GG1001) and (GE1002 or GG1002)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: 80 credits from GE or GG 3000 and 4000 level modules, at least 60 credits of which must be from GE3025-GE3077, GE4026-GE4090 and/or GG3021-GG3089, GG4042-GG4073. Of the 240 credits required for an Honours degree, 90 credits from major and minor subjects must be at 4000 level.</p>
<p>(B.Sc. Honours): Geoscience</p>	<p>Single Honours Geoscience: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p>Level 3: 90 credits comprising GS3002, GS3004, GS3012, GS3081, GG3082, and GS3090 and 30 credits from the group GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG3057**, GG3058, GG4059, GG3067, GG3068, GG3069, GS4083, GS4084, GG3089*.</p> <p>Level 4: 60 credits comprising GS4005, GS4006, GS4007, GS4008, and 60 credits from the group GS4085, GS4086, GG4082, GS4088, GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG3057**, GG3058, GG4059, GG3067, GG3068, GG3069, GS4083, GS4084*.</p> <p>*NB in addition to GS4005, GS4006, GS4007, and GS4008, at least 30 credits of other 4000-level modules must be taken over the 2 years of Junior and Senior Honours.</p> <p>** these modules are available only to students who have taken GE2011, GE2012</p>

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Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Geoscience and Chemistry</p>	<p>Geoscience - Chemistry Joint Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012) and 40 credits comprising Pass or bypass for CH1001, pass in CH1004</p> <p>Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012 and 60 credits comprising passes at 11 or better in CH2101, either CH2102 or CH2103</p> <p>Level 3: 120 credits comprising CH4512, CH3711, CH3521, CH3511, CH3721, CH3431 and GS3004, normally GS3081* and 1 from (GS4083 or GS4084).</p> <p>Level 4: 120 credits comprising 3 from (CH4511, CH4611, CH4711, CH4712 and CH5711), CH4448§, CH5515, normally GS4083 or GS4084**, GS4005, GS4010, GS4009, 1 from (GS4088, GG3067, GG3068, GG3069 and GG3082)</p> <p>* With the approval of the Geoscience Adviser of Studies, a student may replace GS3081 and (GS4083 or GS4084) by 2 from GG3067, GG3068, GG3069, GG3082 in semester 2.</p> <p>** With the approval of the Geoscience Adviser of Studies, a student may replace GS4083 or GS4084 by a second module from the list GS4088, GG3067, GG3068, GG3069 and GG3082</p> <p>§With the approval of the Directors of Teaching, under some circumstances, students might conduct an integrated 35 credit project, ID4441, combining CH4448 with GS4009 and presenting a single, extended report.</p>
<p>(B.Sc. Honours): Geoscience and Economics</p>	<p>Geoscience element of Joint Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p>Level 3: 60 credits comprising GG3082, GS3012, GS3081, GS3090</p> <p>Level 4: 45 credits from GS4005, GS4006, GS4007, GS4009 and at least 15 credits from GG3089, or GS4082 – GS4088.</p>
<p>(B.Sc. Honours): Geoscience and Environmental Biology</p>	<p>Geoscience element of Joint Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012 and Honours entry in the other subject</p> <p>Level 3: 30 credits from GS3004, and 30 credits from the group GG3023, GG3067, GG3068, GG3069, GG3082.</p> <p>Level 4: 30 credits from GS4005, GS4009, GS4010, and 30 credits from the group GG4082, GS4088, GG3023, GG3067, GG3068, GG3069, at least 15 credits of which must be at level 4000.</p>

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Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Geoscience and Management, Management Science</p>	<p>Geoscience element of Joint Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in (GG2003, GG2004, GS2001, and GS2002) or (GS2011 and GS2012) and Honours entry in the other subject</p> <p>Level 3: 30 credits from GS3004, and 30 credits from the group GG3023, GG3067, GG3068, GG3069, GG3082.</p> <p>Level 4: 30 credits from GS4005, GS4009, GS4010, and 30 credits from the group GG4082, GS4088, GG3023, GG3067, GG3068, GG3069, at least 15 credits of which must be at level 4000.</p>
<p>(B.Sc. Honours): Geoscience with French[^] or Spanish[^]</p> <p>[^] available also as 'With Integrated Year Abroad Degree'</p> <p>Not available to entrants from 2008-09</p>	<p>Geoscience element of Major Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in (GG2003, GG2004, GS2001, and GS2002) or (GS2011 and GS2012) and Honours entry in French</p> <p>Level 3: 60 credits from GS3002, GS3004, GS3012, GS3090 and 30 credits from the group GG3021, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056, GG3057, GG3058, GG4059, GG3067, GG3068, GG3069, GS3081, GG3082, GS4083, GS4084, GG3089</p> <p>Level 4: 60 credits from GS4005, GS4006, GS4007, GS4008, and 30 credits from the group GS4085, GS4086, GG4082, GS4088, GG3021, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056, GG3057, GG3058, GG4059, GG3067, GG3068, GG3069, GS3081, GS3082, GS4083, GS4084</p>
<p>(B.Sc. Honours): Environmental Geoscience</p>	<p>Single Honours Environmental Geoscience: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012</p> <p>Level 3: 75 credits comprising GG3002, GG3082, GG3089, GG3110, GS3012, GS3090 and 45 credits from GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG4057**, GG3058, GG4059, GG3067, GG3068, GG3069, GS3081, GS4084.</p> <p>Level 4: 60 credits comprising GG4110, GG4120, GS4008 and 60 credits from the group GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG4057**, GG3058, GG4059, GG3067, GG3068, GG3069, GG4082, GS4085, GS4086, GS4088. ** these modules are available only to students who have taken GE2011, GE2012</p>

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Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Environmental Geoscience and Environmental Biology</p>	<p>Environmental Geoscience element of Joint Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012) Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012 Level 3: 60 credits comprising GG3002, GS3012, GS3089, GS3090, GG3110 Level 4: 45 credits comprising GG4110, GG4120, GS4009 and at least 15 credits from GG3082, GG30067, GG3052, GG3069 or GS4088.</p>
<p>(B.Sc. Honours): Environmental Geoscience and Economics or Management Science</p> <p>(M.A. Honours) Environmental Geoscience and Management</p>	<p>Environmental Geoscience element of Joint Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012) Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012 Level 3: 50 credits comprising GG3089, GG3110, GS3012, GS3090 Level 4: 45 credits from GS4009, GS4110, GS4120 and at least 15 credits from GG3052, GG3067, GG3069, GG3082 or GS4088.</p>
<p>(B.Sc. Honours): Environmental Geoscience with French[^]</p> <p>[^] available also as 'With Integrated Year Abroad Degree'</p> <p>Not available to entrants from 2008-09</p>	<p>Environmental Geoscience element of Major Degree: Level 1: 40 credits comprising passes in (GS1001 or GG1011) and (GS1002 or GG1012) Level 2: 60 credits comprising passes at 11 or better in GS2011 and GS2012 Level 3: 60 credits comprising GG3023, GG3067, GG3082, GG3089, GG3110, GS3002, GS3012, GS3090, GS4083 Level 4: 60 credits comprising GG4110, GG4120, GS4008 and at least 30 credits from GG3052, GG3067, GG3069 or GS4088.</p>
<p>(B.Sc. Honours): Physical Geography & Geoscience</p>	<p>Single Honours Physical Geography & Geoscience: Level 1: 80 credits comprising passes in ((GE1001 OR GG1001) OR GG1001), (GE1002 OR GG1002), (GS1001 or GG1011), (GS1002 or GG1012). Level 2: 120 credits comprising passes at 11 or better in GE2011, GE2012, GS2011 and GS2012. Level 3: 75 credits comprising GE3001, GE3002, GE3006, GG3082, GS3002, GS3012 and GS3090, plus 45 credits from GG3021-GG3089, GG4042 – GG4082, GS3081, GS4083 or GS4084. Level 4: 45 credits comprising GG4130, GS4007 and GS4010 plus 75 credits from GG3021-GG3110, GG4042-GG4120, GS3081 or GS4083-GS4088. Of the 240 credits required for an Honours degree: (1) at least 45 credits must be taken from GG3021-GG3069 or GG4042-GG4073; (2) at least 45 credits must be taken from GG3082-GG3110, GG4110-GG4120, GS3081 or GS4083-GS4088; (3) at least 90 credits must be at 4000 level.</p>

Modules

Normally the prerequisite for each of the following Honours modules is entry to the Honours Programme(s) for which they are specified, as well as any additional specific prerequisite(s) given.

General degree students wishing to enter 3000 modules and non-graduating students wishing to enter 3000 or 4000 level modules must consult with the relevant Honours Adviser within the School before making their selection.

InterDisciplinary (ID) Modules

There are modules which relate to this School and to which this School contributes – **ID4001 Communications and Teaching in Science** and **ID4441 Combine Chemistry and Geoscience Research Project** which also appear in the InterDisciplinary Section of the Catalogue (Section 23)

Geography (GE) Modules

GE3001 Cartographic Methods in Geography

Credits: 10 Semester: 1

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

Description: This module provides an introduction to basic map design and production. The module 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 Semester: 2

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

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%

GE3004 Ideas and Methods in Geography I

Credits: 10 Semester: 2

Description: A module 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 the relationships between nature and culture. 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: Course Work = 100%

GE3005 Data Analysis in Geography

Credits: 10 Semester: 1

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

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-

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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 Semester: 2

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

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 Semester: 2

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

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 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%

GE3031 Geographies of labour market behaviour

Credits: 15 Semester: 2

Availability: 2008-09

Description: This module focuses on understanding individual labour market outcomes and the functioning of regional (and national) labour markets. This field of study is traditionally dominated by (labour) economists, using economic theories based on utility maximizing behaviour of workers and their households. This module will explore these theories and offer additional and alternative explanations of labour market outcomes. It will be argued that geography is at the heart of understanding individual labour market outcomes as most individuals are severely restricted in their spatial flexibility. Contributions from critical human geography, economics and sociology will be

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combined to contribute to students' critical understanding of labour market behaviour on the local, regional, UK and European level.

Class Hour: To be arranged.

Teaching: 18 hours of lectures and seminars in total.

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

GE3032 Urban Cultural Geography

Credits: 20 Semester: 1

Availability: 2009-10

Description: This module introduces current debates in urban cultural geography against the context of contemporary processes of globalization. "The City" is analysed both as a site in which a series of political-economic and socio-cultural practices play themselves out and as a space around which a variety of discourses are constituted. It is argued that "The City" must be understood as more than a static empirical object but is a dense site where multiple processes converge often in unexpected and contradictory ways. Module readings will be drawn from geography, cultural studies, and sociology and used to interrogate a variety of media including film, music, memoir and poetry/fiction.

Class Hour: To be arranged.

Teaching: One two-hour lecture and one two-hour seminar.

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

GE3037 Population Studies I

Credits: 15 Semester: 1

Availability: 2008-09

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%

GE3051 Environmental Management in Scotland

Credits: 15 Semester: 1

Availability: 2008-09

Anti-requisite: GG3056

Description: This module focuses on current environmental management issues in Scotland. It presents 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 devolved 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 Semester: 1

Availability: 2008-09

Anti-requisite: GG3060

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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-European space. Arguments and examples will be drawn from different parts of the imperial world.

Class Hour: 12.00 noon and 2.00 pm Monday.

Teaching: 16 hours of lectures and seminars in total.

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

GE3073 Geography of Health

Credits: 15 **Semester:** 1

Availability: 2008-09

Description: This module introduces the principal concerns of the geography of health, including the spatial distribution of diseases, disability and medical conditions, the relationship of health to environmental, social and cultural factors, and the organisation of health care services. It will cover general principles in the geography of health and also specific issues of contemporary political concern. It is primarily based on the contemporary experience of the United Kingdom and other Western societies, although there will be some discussion of the historical geography of health and of the geography of health in the developing world. The module will include practical elements, including consideration of data sets on the geography of health and of qualitative and quantitative methods of analysis.

Class Hour: 10.00 am – 12 noon Monday.

Teaching: 16 hours of lectures and seminars in total.

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

GE3075 Environments and Human Behaviour

Credits: 15 **Semester:** 2

Availability: 2009-10

Description: This module will explore the relationship between behaviour and experience and the built and natural environment. It will introduce the theories that have been proposed to explain behaviour and explore their validity in a number of different contexts both 'normal' and 'extreme'. Specifically it will consider behaviour in relation to: building and town design, risk environments and disaster situations. It will also consider the nature of attractive land- and city-scapes. It will tackle research questions such as 'can crime be reduced through design' and 'does enforced safety behaviour actually reduce accidents and deaths'.

Class Hour: To be arranged.

Teaching: 16 hours of lectures and seminars in total.

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

GE4014 Ideas and Methods in Geography II

Credits: 10 **Semester:** 2

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

Prerequisite: GE3004

Anti-requisites: GG3003, GE3003

Description: This module extends the work of GE3004 and encourages students to discuss the scope and diversity of geographical inquiry in preparation for the Ideas and Methods examination at the end of their two honours years. The module involves a series of lectures and seminars that will augment the understanding of theoretical, methodological and applied issues gained in the rest of the honours programme. Discussion will 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 lectures on selected topics and staff-led seminars.

Class Hour: 11.00 am - 1.00 pm Friday.

Teaching: 20 hours of lectures and seminars in total.

Assessment: 3 Hour Examination = 100%

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GE4018 Dissertation in Geography

Credits: 30 Semester: 1 (or Semester 2 for Joint Honours Students by arrangement with Head of School)

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

Anti-requisites: GG4130

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%

GE4019 Review Essay in Geography

Credits: 20 Semester: 2

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

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%

GE4038 Population Studies II

Credits: 15 Semester: 2

Availability: 2008-09

Prerequisite: GE3037

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%

GE4061 Geographies of Imperialism and Colonialism II

Credits: 15 Semester: 2

Availability: 2008-09

Prerequisite: GG3060 or GE3060

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: 12.00 noon and 2.00 pm Monday.

Teaching: 16 hours of lectures and seminars in total.

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

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GE4072 HIV/AIDS in Africa

Credits: 15 Semester: 2
Availability: 2009-10
Prerequisites: GE3073 or GE3025
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 explores 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%

Geography – Geoscience (GG) Modules

GG3011 Introduction to Geographical Information Systems

Credits: 10 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 = 100%

GG3036 Periglacial Geomorphology

Credits: 15 Semester: 1
Availability: 2009-10
Prerequisites: GE2011 and GE2012 or GS2011 and GS2012
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: 2.00 - 4.00 pm Tuesday.
Teaching: Two lectures per week plus two hours of group presentations.
Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

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GG3041 Quaternary Geomorphology of Scotland I

Credits: 15 Semester: 1

Availability: 2009-10

Prerequisites: GE2011 and GE2012 or GS2011 and GS2012

Description: This module 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%

GG3052 Coastal Environments and Sea Level Change

Credits: 15 Semester: 1

Prerequisites: GE2011 and GE2012 or GS2011 and GS2012

Description: Processes affecting coastal lowlands are considered at different scales from the global to the epicontinental sea and 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 Semester: 1

Availability: 2008-09

Prerequisites: GE2011, GE2012

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%

GG3067 Oceans and Climate

Credits: 15 Semester: 2

Availability: 2009-10

Prerequisites: GE2011 and GE2012 or GS2011 and GS2012

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%

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GG3069 Climate and Weather Systems

Credits: 15 Semester: 1
Availability: not available 2008-09
Prerequisites: GE2011 and GE2012 or GS2011 and GS2012
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: 11.00 am – 1.00 pm Tuesday.
Teaching: Two classes.
Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3071 Tropical Environments and Environmental Issues

Credits: 15 Semester: 1
Availability: 2009-10
Prerequisites: GE2011 and GE2012 or GS2011 and GS2012
Description: This module provides an integrated overview of the physical and biological processes of particular relevance to tropical environments, and an introduction to the interactions between these processes and human activities. The module will cover (a) climate: processes, phenomena and variability (b) geomorphology: landforms, weathering, soils, erosion (c) terrestrial ecosystems: humid to sub-humid, lowland to montane (d) marginal marine environments: mangroves and reefs (e) an introduction to the major environmental issues in the tropics stemming from climate change, population pressure and land-use practices.
Class Hour: To be arranged
Teaching: Two hour lectures.
Assessment: Continuous Assessment = 33%, 2 Hour Examination = 67%

GG3082 Sedimentary Environments and Depositional Frameworks

Credits: 15 Semester: 2
Prerequisites: GS2011 & GS2012
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 = 50%, 2 Hour Examination = 50%

GG3089 Environmental Geoscience

Credits: 15 Semester: 1
Prerequisites: GS2011, GS2012
Co-requisites: GG3102 or GS3012
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 = 50%, 2 Hour Examination = 50%

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GG3090 Palaeontology, Palaeoecology & Palaeoclimatology

Credits: 15 Semester: 2

Prerequisites: Admission to Honours Programme in Geography, Sustainable Development or Geosciences

Description: The module is designed to train students to identify and interpret Earth's fossil record. Topics to be covered will include an overview of biospheric evolution, identification of key fossils of the major marine invertebrate families and an introduction into micro-palaeontology techniques and identification. The aim is to provide students with a framework for classifying fossils and understanding their utility in environmental reconstructions and usefulness as biogeochemical indicators of Earth's changing environments and climate through time. Work will involve hands-on practicals, field excursions and laboratory exercises.

Class Hour: To be arranged.

Teaching: Two lectures and one 3 hour practical.

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

GG3095 Rivers, Floodplains and Management

Credits: 15 Semester: 1

Prerequisites: GE2011 and GE2012 or GS2011 and GS2012

Description: Rivers and their floodplains are central to human populations and ecology, but must be carefully managed to maintain their benefits whilst minimizing risks associated with water supply, water quality and flooding. This module provides an introduction to fluvial hydrology and geomorphology in the context of natural physical processes and their interaction with river management. It will focus on floods, sediment/contaminant transport, sedimentation, and floodplain evolution in contemporary settings. The module will incorporate one practical field trip in Scotland. In addition, it will highlight important case studies of river management from around the globe.

Class Hour: To be arranged.

Teaching: Lectures, and occasional seminar and tutorial, plus field class.

Assessment: Continuous Assessment = 100%

GG3096 Earth System Science: Terrestrial Ecosystems and Environmental Change

Credits: 15 Semester: 2

Prerequisites: GE2011/ GE2012 or GS2011/GS2012 or SD2001 or BL2105. Familiarity with basic chemistry and mathematics is desirable, but not essential.

Description: Terrestrial ecosystems play a central role in modulating the flow of energy and materials in the Earth system, regulating trace gas exchange with the atmosphere, the transfer of carbon and nutrients with rivers and oceans, and the natural attenuation of pollutants. Understanding how terrestrial ecosystems function is crucial to addressing problems such as climate change, stratospheric ozone loss, and environmental pollution. This module will develop principles of ecosystems ecology and biogeochemistry, focusing on major elemental cycles, soil processes, and human activity. In addition to students in Geography and Geosciences, this module also welcomes students from Sustainable Development, Biology and Chemistry.

Class Hour: To be arranged.

Teaching: Two lectures and occasional tutorials.

Assessment: Continuous Assessment = 30%, 2 Hour Examination = 70%

GG3097 The Economic Geography of Homes and Neighbourhoods

Credits: 15 Semester: 2

Prerequisites: Normally GE2011 and GE2012

Description: This module aims to give students a conceptual grasp of 'houses' and 'neighbourhoods', and the key systems that produce, finance and modify them. Emphasis will be given on how housing and neighbourhoods choices shape and are shaped by places, and have environmental consequences. The public policy outcomes that arise from the workings of housing systems are also explored. The renewal of poorer neighbourhoods is given emphasis, and the module draws on evidence and examples from outside the UK, specifically Canada, the USA and Australasia.

Class Hour: To be arranged.

Teaching: One lecture and one seminar.

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

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GG3102 Analytical Methods for Physical Geography

Credits: 15 Semester: 1

Prerequisites: GS2011, GE2011, GS2012, GE2012

Anti-requisite: GS3012

Description: The module will allow the student to understand the principles behind, and the practical application of, analytical methods in Physical Geography. The first sessions will constitute short lectures followed by problem-based practicals in which the student will use the method taught. The examples chosen will reflect the individual student's background and assessment will be based on short practical reports. Sessions 8-10 allow the student to research an unusual analytical method, relevant to his/her own interests. In session 10, the student will review his/her findings in a poster presentation to peers. Peer review will constitute an important part of this session.

Class Hour: 9.00 - 11.00 am Thursday.

Teaching: Lectures and practical classes on a fortnightly cycle.

Assessment: Continuous Assessment = 100%

GG3110 Applied Environmental Geoscience Field Methods

Credits: 15 Semester: 2

Prerequisites: GS3002, GG3089, GS3012, GS3090

Description: This module forms the introduction to methodologies and training in applied environmental reconstruction techniques. It will provide first-hand experience in field examination of geotechnical, environmental and industrial sites in the UK and the methodologies used to solve geo-environmental problems. The module enables hands-on training in using coring tools, hydrological sampling methods, onshore to nearshore marine geophysical surveying (seismic refraction, magnetometry, electrical and electromagnetic methods for land surveys; bathymetric sidescan, acoustic ground discrimination, sub-bottom profiling for lacustrine and marine surveys) and remote sensing applications.

Class Hour: To be arranged.

Teaching: Fortnightly seminar and 2 one-week field excursion/courses.

Assessment: Continuous Assessment = 100%

GG4042 Quaternary Geomorphology of Scotland II

Credits: 15 Semester: 2

Availability: 2009-10

Prerequisites: GG3041

Description: The aim of this module 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%

GG4057 Glaciers and Glacial Processes II

Credits: 15 Semester: 2

Availability: 2008-09

Prerequisites: 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 module 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%

Geography & Geosciences – Honours 2008/09 – January 2009

GG4059 Quaternary Environmental Reconstruction II

Credits: 15 Semester: 2

Availability: not available 2008-09

Description: This module 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 are 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%

GG4090 Late Holocene Palaeoclimatology - Studying Climate Change for the last 2000 years

Credits: 15 Semester: 2

Description: The current scientific consensus is that recent Global Warming is outside the range of natural variability when compared to the last 10000 or even 20000 years. This module addresses how the current consensus view has been derived with a critical focus (addressing both strengths and limitations) on the key palaeoclimate proxy sources (e.g. ice cores, tree-rings, corals, speleothems, lake/marine sediments and historical documents) used to reconstruct and understand climate for the last two millennia. The module ends with a critical assessment of the "myths" often cited by the skeptical community to weaken the consensus view.

Class Hour: To be arranged

Teaching: Two classes each week.

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

GG4110 Environmental Geoscience Mapping & Analysis

Credits: 15 Semester: 1

Prerequisites: GG3002, GS3004, GG3082, GG3089, (either GS3012 or GG3102), GS3090

Description: This module is designed to provide training in a variety of mapping and geochemical analytical techniques of utility to solving geo-environmental problems. Mapping exercises will include use of aerial photographs, thematic mapping and GIS and application of applied geophysical surveying techniques. Analytical techniques will focus on environmental problems and include x-ray diffraction, grain-size analysis and the compositional analysis of natural waters.

Class Hour: To be arranged.

Teaching: Lectures and practical classes

Assessment: Continuous Assessment = 100%

GG4111 Environmental Applications of Isotope Analysis

Credits: 15 Semester: 2

Availability: 2009-10

Prerequisites: either GG3102 or GS3012

Description: Isotopes provide unique 'fingerprints' that can be traced through the earth system and in some cases can also be used as precise dating tools on a range of timescales. This module provides an introduction to the use of stable and radioactive isotopes in understanding physical and biological processes in the geosphere, biosphere, hydrosphere and atmosphere. The module will focus on the stable isotopes of carbon, nitrogen, oxygen, hydrogen and sulphur as well as the radioactive isotopes of carbon, using examples drawn from geoscience, environmental science, geography, biology and archaeology.

Class Hour: To be arranged.

Teaching: 8 lectures, 3 labs and 1 field trip

Assessment: Lab-based project 33%, Examination 67%

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GG4120 Environmental Geoscience Case Studies & Presentations

Credits: 15 Semester: 1
Prerequisites: GG3002, GS3004, GG3082, GG3089, (either GS3012 or GG3102), GS3090
Description: This module forms the introduction to the fundamental skills required to assess, write-up and present the outcome of studies investigating and understanding geo-environmental problem solving and issues. The module centres on student-defined and led analyses of case studies relevant to industry and the geo-environmental science field. Students will present their results in a professional-style group presentation setting and industry experts will be invited to participate in and discuss the evaluation of the style and quality of the presentations.
Class Hour: To be arranged.
Teaching: 6 two-hour seminars
Assessment: Continuous Assessment = 100%

GG4130 Research Dissertation in Physical Geography and Geoscience

Credits: 30 Semester: Whole Year
Prerequisites: Admission to BSc Honours programme in Physical Geography and Geoscience
Anti-requisites: GE4018, GS4008
Description: Students select a research topic in Physical geography and Geoscience, design a research programme to investigate this topic, undertake fieldwork to collect appropriate data, analyse the data and present their results orally and as a dissertation up to 10,000 words in length. The topic is selected and approved in the second semester of the Junior Honours year; fieldwork and data collection are carried out during the following vacation and the dissertation is submitted in the second semester of the Senior Honours year. Students are supervised by teaching staff but work largely independently.
Teaching: Individual supervision by member(s) of teaching staff
Assessment: Research proposal = 5%, Oral Presentation = 10%, Dissertation = 85%

Geoscience (GS) Modules

GS3002 Data Analysis and Numerical Methods in Geoscience

Credits: 10 Semester: 1
Prerequisites: GS2011 & GS2012
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%

GS3004 Field Mapping and Map Interpretation

Credits: 30 Semester: Whole Year
Prerequisites: GS2011 & GS2012
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%

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GS3012 Analytical Methods In Geoscience

Credits: 10 Semester: 1
Prerequisites: GS2011 & GS2012
Anti-requisite: GG3102

Description: This module covers the principles behind, and the practical application of, common analytical methods used in the Geosciences. The module begins with the design of field sampling strategies and their application in students collecting environmental and geological materials. The theory of some important analytical methods is then presented and students are given the opportunity to apply some of these in practice on their own materials under technical supervision. Emphasis will be placed on estimating precision and accuracy, and on methods of data presentation and interpretation. Each student will have an opportunity to research an unusual analytical method, relevant to their own particular interests.

Class Hour: To be arranged.
Teaching: One lecture, one 2 hour tutorial, one 2 hour practical class every fortnight.
Assessment: Continuous Assessment = 100%

GS3081 Earth Internal Processes

Credits: 15 Semester: 1
Prerequisites: GS2011 & GS2012

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 = 50%, 2 Hour Examination = 50%

GS3090 Introduction to Geographical Information Systems (GIS) in Geosciences

Credits: 10 Semester: 1
Prerequisites: GS2011 & GS2012
Anti-requisite: GG3011

Description: This module introduces the concepts and methodologies of acquiring, storing, analysing and displaying digital data in a spatial context. Topics include an overview of software and hardware requirements and developments, data sources, structure, and models, spatial analysis and visualisation techniques. Students will work within ArcView 3.2 and develop the skills necessary to design a GIS project with a variety of primary and secondary datasets. The laboratory exercises expose students to a wide variety of digital data, their uses and application in geoscience and their sources.

Class Hour: 9.00 am – 12.00 noon Friday.
Teaching: 1 lecture and a two hour practical.
Assessment: Continuous Assessment = 100%

GS3099 Field Methods in Geosciences

Credits: 30 Semester: 2
Prerequisites: Must be studying Geoscience at an overseas university
Anti-requisite: GS3004

Description: This module is designed exclusively for non-graduating overseas undergraduate students seeking advanced training in geological field methods. It consists of hands-on experience honing observational and mapping skills by participating in highly focused residential and one-day excursions and associated laboratory classes. The module takes full advantage of the University's location close to some classic geological locations, including the Moine thrust system, the Buchan and Barrovian metamorphic zones, the Girvan-Ballantrae ophiolite and the Hebridean Tertiary plutonic and volcanic centres.

Class Hour: none – field-based module
Teaching: Occasional lectures, tutorials and practicals
Assessment: Continuous Assessment = 100%

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GS4005 Honours Field Excursion

Credits: 10 Semester: Summer vacation between JH & SH

Prerequisites: GS2011, GS2012 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%

GS4006 Research Review and Presentations

Credits: 10 Semester: 1

Prerequisites: GS2011, GS2012 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. 3500 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%

GS4007 Map Interpretation and Remote Sensing

Credits: 10 Semester: 1

Prerequisites: GS2011, GS2012 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%

GS4008 Research Dissertation

Credits: 30 Semester: Whole Year

Prerequisites: GS2011, GS2012 and admission to Honours Geoscience

Anti-requisite: GG4130

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%

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GS4009 Joint Honours Research Project

Credits: 15 Semester: Whole Year

Prerequisites: GS2011, GS2012 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 5,000 words).

Class Hour: not applicable.

Teaching: none

Assessment: Dissertation = 100%

GS4010 Joint Honours Research Review

Credits: 5 Semester: 1 or 2

Prerequisites: GS2011, GS2012 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%

GS4083 Granites and Basalts

Credits: 15 Semester: 2

Availability: 2008-09

Prerequisites: GS2011, GS2012, GS3081 *and* admission to Honours Geoscience or Honours Geography

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 = 50%, 2 Hour Examination = 50%

GS4084 Composition of the Solid Earth

Credits: 15 Semester: 2

Availability: 2009-10

Prerequisites: GS2011, GS2012, GS3081 and admission to Honours Geoscience or Honours Geography

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 = 50%, 2 Hour Examination = 50%

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GS4085 Geodynamics

Credits: 15 Semester: 2

Prerequisites: GS2011, GS2012, GS3081 *and* admission to Honours Geoscience or Honours Geography

Description: A study of the geodynamic evolution of 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 = 50%, 2 Hour Examination = 50%

GS4086 Tectonics and Structural Geology

Credits: 15 Semester: 1

Prerequisites: GS2011, GS2012, GS3081 and admission to Honours Geoscience or Honours Geography

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 = 50%, 2 Hour Examination = 50%

GS4088 Petroleum Exploration and Geophysics

Credits: 15 Semester: 2

Prerequisites: GS2011, GS2012 *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 = 50%, 2 Hour Examination = 50%

ID4001 Communication and Teaching in Science

Credits: 15 Semester: 1

Availability: Available only to final year students who have been accepted following interview.

Description: This module is based on the Undergraduate Ambassador Scheme launched in 2002. It provides final year students within the Faculty of Science with the opportunity to gain first hand experience of science education through a mentoring scheme with science teachers in local schools. Students will act initially as observers in the classroom and later as classroom assistants. With permission of the teacher-in-charge, students may also be given the opportunity to lead at least one lesson, or activity within a lesson, during their placement. This module will enable students to gain substantial experience of working in a challenging and unpredictable working environment, and of communicating scientific ideas at various different levels; and to gain a broad understanding of many of the key aspects of teaching science in schools. While of particular value to students aiming for a career in education, these core skills are equally important for any career that requires good communication. Entry to this module is by selection following application and interview during the preceding semester.

Class Hour: Flexible

Teaching: Occasional tutorials and a half-day training session.

Assessment: Continuous Assessment = 100%

Geography & Geosciences – Honours 2008/09 – January 2009

ID4441 Combined Chemistry and Geoscience Research Project

Credits: 35 Semester: both

Prerequisites: Admission to stage 4 of BSc programme

Anti-requisites: CH4442-CH4448, CH5441

Description: The research project at Level 4000 for Chemistry and Geoscience students only aims to develop the students' skills in the following areas: experimental design and problem-solving; abstraction, evaluation and interpretation of data in the chemical literature; practical skills and teamwork; communication of results orally and in a dissertation. The project will be selected and supervised jointly by members of the academic staff in Chemistry and Geoscience.

Class Hour: Two days per week.

Teaching: Reflection, laboratory work, library work, written and oral presentation preparation.

Assessment: Continuous Assessment = 100%

