

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.

There have been significant revisions to Honours module provision for 2010 -2011. For clarity, the following reflect the new position. For previous versions, see previous catalogues.

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 GG1001 and GG1002</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3: 60 credits from GG3201 - GG3220, and 80 credits from GG3221 - GG3289</p> <p>Level 4: 50 credits from GG4201 - GG4230, and 50 credits from GG4298</p> <p>Of the 240 credits required for an Honours degree, 90 credits must be at 4000 level.</p>

Geography & Geosciences – Honours 2010/11 – August 2010

Degree Programmes	Programme Requirements at:
<p>(M.A. Honours): Geography and Art History, Classical Studies, Economics, 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’ [~]Timetable clash exists, therefore this combination is subject to arrangement with both Departments.</p>	<p>Geography element of Joint Honours Degrees: Level 1: 40 credits comprising passes in GG1001 and GG1002</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3: 30 credits from GG3202 - GG3220</p> <p>Level 4: 30 credits from GG4297</p> <p>A further 60 credits must normally be obtained from GG3301, GG3302, GG3221 - GG3289, GG4301 and GG4221 - GG4230.</p> <p>In total, 240 credits are required at Level 3 and Level 4, of which 90 credits must be achieved at Level 4.</p>
<p>(B.Sc. Honours): Geography and Environmental Biology</p>	<p>Geography element of Joint Degree: Level 1: 40 credits comprising passes in GG1001 and GG1002</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3: 30 credits from GG3202 - GG3220</p> <p>Level 4: 30 credits from GG4297</p> <p>A further 60 credits must normally be obtained from GG3301, GG3302, GG3221 - GG3289, GG4301 and GG4221 - GG4230.</p> <p>In total, 240 credits are required at Level 3 and Level 4, of which 90 credits must be achieved at Level 4.</p>
<p>(M.A. Honours): Geography with Social Anthropology or Spanish[^]</p> <p>[^]available also as ‘With Integrated Year Abroad Degree’</p>	<p>Geography element of Major Degrees: Level 1: 40 credits comprising passes in GG1001 and GG1002</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3: 90 credits from GG3202 - GG3289</p> <p>Level 4: 70 credits from GG4220 - GG4230 and GG4298</p> <p>A further 20 credits must normally be obtained from GG3301, GG3302, GG3221 - GG3289, GG4301 and GG4221 - GG4230.</p> <p>Of the 240 credits required for an Honours degree, 90 credits from major and/or minor subjects must be at 4000 level.</p>

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:</p> <p>Level 1: 40 credits comprising passes in GG1001 and GG1002</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: 60 credits from GG3221 - GG3289 <i>and/or</i> GG4221 – GG4230</p> <p>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:</p> <p>Level 1: 40 credits comprising passes in GG1001 and GG1002</p> <p>Level 2: 60 credits comprising passes at 11 or better in GE2011 and GE2012</p> <p>Level 3 & Level 4: 60 credits from GG3221 - GG3289 <i>and/or</i> GG4221 – GG4230</p> <p>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): Geology</p>	<p>Single Honours Geology:</p> <p>Level 1: 40 credits comprising passes in (ES1001 or GG1011) and (ES1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in (ES2001 or GS2011) and (ES2002 or GS2012)</p> <p>Level 3: 120 credits from ES3001, ES3002, ES3003, ES3004, ES3005, ES3006, ES3007, ES3009</p> <p>Level 4: 90 credits from ES4001, ES4002, ES4003, ES4004, plus 30 credits from ES4006, ES4007, ES4009, ES3008, ID4001</p>

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Geoscience</p> <p>(Requirements for students entering Honours (Third) year prior to 2010-11.)</p>	<p>Single Honours Geoscience:</p> <p>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, GG3090, GG3095, GG3096, GG4059, GG3067, GG3068, GG3069, GS4083, GS4084, GG3089*.</p> <p>Level 4: 60 credits comprising GS4005, GS4006, GS4007, GS4008, and 60 credits from the group ID4001, GS4085, GS4086, GG4082, GS4088, GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG3057**, GG3058, GG3090, GG3095, GG3096, GG4059, GG3067, GG3068, GG3069, GS4083, GS4084*, BL4020***.</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> <p>*** this module is only available to students who have completed 2nd year biology</p>
<p>(B.Sc. Honours): Geoscience and Chemistry</p> <p>(Requirements for students entering Honours (Third) year prior to 2010-11.)</p>	<p>Geoscience - Chemistry Joint Degree:</p> <p>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, GG3082 and GG3096</p> <p>§With the approval of the Directors of Teaching, under some circumstances, students might conduct an integrated 40-credit project, ID4441, combining CH4448 with GS4009 and presenting a single, extended report.</p>

Geography & Geosciences – Honours 2010/11 – August 2010

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Geology and Chemistry</p> <p>(Requirements for students entering Honours (Third) year in 2010-11 or later.)</p>	<p>Geology - Chemistry Joint Degree:</p> <p>Level 1: 40 credits comprising passes in (ES1001 or GG1011) and (ES1002 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 (ES2001 or GS2011 and (ES2002 or GS2012) and 60 credits comprising passes at 11 or better in CH2101, either CH2102 or CH2103</p> <p>Level 3: 120 credits comprising CH3431, CH3511, CH3521, CH3717, CH3721, CH4512, and ES3001, ES3004, ES3006, ES3009</p> <p>Level 4: 40 credits from CH4511, CH4611, CH4711, CH4712, CH5711, CH5717, CH5515 and EITHER 50 credits from (ES4010 and CH4448) OR ID4441 and 30 credits from ES3008, ES4009, ES4006 or ID4001.</p>
<p>(B.Sc. Honours): Geoscience and Economics</p>	<p>Geoscience element of Joint Degree:</p> <p>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:</p> <p>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 15-45 (but usually 30) credits from the group GG3023, GG3067, GG3068, GG3069, GG3082, GG3096.</p> <p>Level 4: 30 credits from GS4005, GS4009, GS4010, and 15-45 (but usually 30) credits from the group GG4082, GS4088, GG3023, GG3067, GG3068, GG3069, GG3096 at least 15 credits of which must be at 4000 level.</p> <p>Students on the Geoscience and Environmental Biology degree must take a minimum of 45 credits and a maximum of 75 credits in each subject in each year.</p>
<p>(B.Sc. Honours): Geoscience and Management, Management Science</p>	<p>Geoscience element of Joint Degree:</p> <p>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)</p> <p>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, GG3096.</p> <p>Level 4: 30 credits from GS4005, GS4009, GS4010, and 30 credits from the group GG4082, GS4088, GG3023, GG3067, GG3068, GG3069, GG3096 of which at least 15 credits must be at 4000 level.</p>

Geography & Geosciences – Honours 2010/11 – August 2010

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Geoscience with 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:</p> <p>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 Spanish</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, GG3090, GG3095, GG3096</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, GG3090, GG3095, GG3096, GS4083, GS4084</p>
<p>(B.Sc. Honours): Environmental Geoscience</p> <p>Requirements for students who entered Honours (Third) year before 2010-11.</p>	<p>Single Honours Environmental Geoscience:</p> <p>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**, GG3090, GG3095, GG3096, GG4057**, GG3058, GG4059, GG3067, GG3068, GG3069, GS3081, GS4084.</p> <p>Level 4: 60 credits comprising GG4110, GG4120, GS4008 and 60 credits from the group ID4001, GG3021**, GG3023, GG3036, GG3041, GG4042, GG3052, GG3056**, GG4057**, GG3058, GG4059, GG3067, GG3068, GG3069, GG3090, GG3095, GG3096, GG4082, GS4085, GS4086, GS4088, BL4020***.</p> <p>** these modules are available only to students who have taken GE2011, GE2012</p> <p>*** this module is available to students who have completed 2nd year biology</p>

Degree Programmes	Programme Requirements at:
<p>(B.Sc. Honours): Environmental Geoscience</p> <p>Requirements for students entering Honours (Third) year in 2010-11 or later.)</p>	<p>Single Honours Environmental Geoscience:</p> <p>Level 1: 40 credits comprising passes in (ES1001 or GG1011) and (ES1002 or GG1012)</p> <p>Level 2: 60 credits comprising passes at 11 or better in (ES2001 or GS2011) and (ES2002 or GS2012)</p> <p>Level 3: 105 credits from ES3001, ES3002, ES3003, ES3004, ES3005, ES3008, ES3010 and 15 credits from ES3009 or GG3260-3270 Level 4: 90 credits from ES4002, ES4003, ES4004, ES4008, plus –30-35 credits from ES4006, ES4007, ES4009, ID4001, ES3009 or GG3260-3270</p>
<p>(B.Sc. Honours): Environmental Geoscience and Environmental Biology</p>	<p>Environmental Geoscience element of Joint Degree:</p> <p>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 GG3002, GS3012, GS3089, GS3090, GG3096, GG3110</p> <p>Level 4: 45 credits comprising GG4110, GG4120, GS4009 and at least 15 credits from GG3082, GG30067, GG3052, GG3069, GS4088, BL4020.</p> <p>Students on the Environmental Geoscience and Environmental Biology degree must take a minimum of 45 credits and a maximum of 75 credits in each subject in each year.</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:</p> <p>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: 50 credits comprising GG3089, GG3110, GS3012, GS3090</p> <p>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): Physical Geography & Geoscience</p> <p>Not available to entrants from 2009-10</p>	<p>Single Honours Physical Geography & Geoscience:</p> <p>Level 1: 80 credits comprising passes in GG1001, GG1002, (GS1001 or GG1011), (GS1002 or GG1012).</p> <p>Level 2: 120 credits comprising passes at 11 or better in GE2011, GE2012, GS2011 and GS2012.</p> <p>Level 3: 60 credits comprising GS3002, GS3012, GS3090 and GG3202.</p> <p>Level 4: 60 credits comprising GG4130 and GG4110.</p> <p>A further 120 credits must normally be obtained from GG3060 – GG3099, GS3081, ID4001, GG4120, GG4090 or GS4080 – GS4089.</p> <p>In total 240 credits are required at Level 3 and Level 4 of which 90 credits must be achieved at Level 4.</p>

Students still completing degree programmes as defined in previous Course Catalogues should discuss their module selections with their Honours Adviser(s).

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 Combined Chemistry and Geoscience Research Project** which also appear in the InterDisciplinary Section of the Catalogue (Section 23)

Earth Science (ES) Modules

ES3001 Geological Mapping

Credits: 15 Semester: 1
Availability: 2010-11
Anti-requisite: GS3004

Description: This module provides hands-on experience in independently constructing and interpreting geological maps and cross sections. It develops the student's abilities to recognise structures first in two dimensions, then in three dimensions and, by inferring how these structures have changed with time, to develop four-dimensional visualisation skills. The module provides training in defining geological sampling strategies and field report writing.

Class Hour: To be arranged.

Teaching: One hour of practicals or lectures each week and occasional two-hour fieldwork tutorials.

Assessment: Continuous Assessment = 100%

ES3002 Analytical & Statistical Methods in Earth Sciences

Credits: 15 Semester: 1
Availability: 2010-11
Anti-requisites: GS3012, GG3102, GS3002, GE3005.

Description: This module covers the principles behind, and practical application of, analytical science and data handling in Earth Sciences. Three key analytical methods are presented and students operate instruments under technical supervision. Statistical training includes (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. Each student will have an opportunity to research an unusual analytical method, relevant to their own interests. Skills taught here reinforce Earth Sciences honours teaching, particularly the independent research project module.

Class Hour: 12.00 noon -2.00 pm Monday (analytical methods), 2.00 - 5.00 pm Friday (stats)

Teaching: Lectures, practicals, tutorials, lab time and a mini -conference.

Assessment: Continuous Assessment = 100%

ES3003 GIS and Spatial Analysis for Earth Scientists

Credits: 15 Semester: 2

Availability: 2010-11

Prerequisites: normally ES3002

Anti-requisites: GS3090, GG3011

Description: This module covers the principles behind, and practical application of, spatial analysis in Earth Sciences. This includes primary and secondary datasets, database design and management, and a variety of spatial analytical methods. Course also provides an introduction to programming and modeling within a GIS environment. Each student will have an opportunity to design and conduct a final project using their choice of available datasets, preferably tailored towards their Senior Honours dissertation proposal topic.

Class Hour: 9.00 am -1.00 pm Monday, Wednesday, Friday (lecture plus lab session), 2.00 - 4.00 pm Tuesday, Thursday (tutorial)

Teaching: Lectures, practicals and tutorials

Assessment: Continuous Assessment = 100%

ES3004 Sedimentology and Stratigraphy

Credits: 15 Semester: 2

Availability: 2010-11

Anti-requisites: GG3082

Description: This core module provides fundamental knowledge and training in describing, studying and interpreting sedimentary rocks and stratigraphic frameworks. The concepts and methodologies of process sedimentology, sequence, bio- and litho-stratigraphy and sedimentary petrography will be taught, and training undertaken using fieldwork and practicals. The module serves as preparation for subsequent modules on related topics and for field-based modules, including Advanced Geological Mapping, the Research dissertation, and the Alps field course.

Class Hour: 10.00 am Tuesday, 11.00 am Thursday (lectures), 2.00 - 5.00 pm Thursday (practicals)

Teaching: Two-hour weekly lectures, plus field-based training.

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

ES3005 Field Remote Sensing Methods in Earth Sciences

Credits: 15 Semester: 1

Availability: 2010-11

Anti-requisites: GS3012, GG3089

Description: This module covers the principles behind, and practical application of, field remote sensing methods in Earth Sciences. Five key methods are presented, namely: high resolution geophysics, hydrogeology, geochemistry, drift mapping, soil analysis, and greenhouse gas analysis. Students will develop skills in deployment of field equipment, will operate appropriate field equipment under technical supervision, and then complete mini-projects based on an industry-format for problem solving using group activities. Skills taught here reinforce Earth Sciences Honours teaching, particularly the independent dissertation research project for Geology and Environmental Geoscience students.

Class Hour: To be arranged

Teaching: Lectures, practicals, demonstrations and tutorials

Assessment: Continuous Assessment = 100%

Geography & Geosciences – Honours 2010/11 – August 2010

ES3006 Advanced Geological Mapping

Credits: 15 Semester: 2
Availability: 2010-11
Prerequisite: ES3001
Anti-requisite: GS3004

Description: Geological maps are not just summaries of rocks – they are ways of conveying three-dimensional structure and geological history. This module starts with lab-based analysis of classic geology maps, followed by two one-week field courses. Field assessment comprises field notes and geological maps within holistic, problem-based exercises, determining the geology of these areas from first principles. At the end of the module, students will not only have learned how to record, interpret and present field data, but also to visualise geology in four dimensions. This module is one of the most important for developing confidence in field techniques prior to independent research projects.

Class Hour: 2.00 - 5.00 pm Friday (map practicals)

Teaching: Practicals and fieldwork

Assessment: Continuous Assessment = 100%

ES3007 Structural Geology and Tectonics

Credits: 15 Semester: 2
Availability: 2010-11
Anti-requisites: GS3081, GS4086

Description: This module covers the principles of rock deformation and associated metamorphism, and the tectonic processes that drive this deformation. The goals of this course are: a) the development of skills in the structural analysis of rock bodies to gain an understanding of the geometries, sequencing, and kinematics of deformational features; b) understanding of tectonic principles and controls on rock deformation and mountain building.

Class Hour: To be arranged.

Teaching: Lectures, practicals and fieldwork

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

ES3008 Environmental Geoscience

Credits: 15 Semester: 2
Prerequisites: normally ES3002, ES3005
Antirequisite: GG3089

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 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%

ES3009 Igneous and Metamorphic Petrology

Credits: 15 Semester: 1

Availability: 2010-11

Anti-requisite: GS3081

Description: This is a core module in Geology delivered early in the honours programme providing a framework for interpreting major petrological processes acting within the Earth's crust and mantle. The module serves as preparation for subsequent modules on related topics and for field-based modules, including Advanced Geological Mapping, the Research dissertation, and the Alps field course.

Class Hour: 9.00 am - 12.00 noon Tuesday (practicals), 1.00 pm Tuesday and Thursday (lectures).

Teaching: Lectures and practicals

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

ES3010 Advanced Environmental Field Methods

Credits: 15 Semester: 2

Prerequisites: ES3001

Anti-requisite: GG3110

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%

ES3099 Field Methods in Geosciences

Credits: 30 Semester: 2

Prerequisites: Must be studying Geoscience at an overseas university

Anti-requisites: GS3004, GS3099

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, normally including the Moine thrust system, the Buchan and Barrovian metamorphic zones, the Girvan-Ballantrae ophiolite and the Hebridean plutonic and volcanic centres.

Class Hour: none – field-based module

Teaching: Occasional lectures, tutorials and practicals in addition to fieldwork

Assessment: Continuous Assessment = 100%

Geography & Geosciences – Honours 2010/11 – August 2010

Geography – Geoscience (GG) Modules

GG3095 Rivers, Floodplains and Management

Credits: 15 Semester: 1

Availability: 2010-11

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: 20 hours of lectures, seminars and tutorials, plus a one field class.

Assessment: Continuous Assessment = 100%

GG3096 Earth System Science: Terrestrial Ecosystems and Environmental Change

Credits: 15 Semester: 2

Availability: 2010-11

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: 2.00 pm Tuesday, 12.00 noon Wednesday, 11.00 am Thursday.

Teaching: Two lectures and occasional tutorials.

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

GG3201 Method, Field, Data: Researching Geographies in Practice

Credits: 60 Semester: 2

Anti-requisite: GG3202

Description: This module occupies a central place in our field-based research-orientated degree. It prepares students to undertake their independent research dissertation and develops transferable professional skills useful beyond graduation. Students will learn about research design and the collection of original empirical geographic data through engagement with a series of problem-based geographical issues. Themes covered include: the history and philosophy of geography; ethics of research; statistics for geographers; cartography; GIS (Geographical Information Systems); and quantitative, qualitative, and physical research methods. There is opportunity for streaming and choice amongst units covering these themes. Skills and techniques learned are applied during a residential field course where students will design and execute an original empirical research project with a staff mentor. The module concludes with students producing an independent research proposal for their Senior Honours dissertation projects.

Class Hour: To be arranged.

Teaching: Lectures, seminars, tutorials and practicals.

Assessment: Continuous Assessment = 100%

GG3202 Method, Field, Data: Research Training for Joint Honours in Geography

Credits: 60 Semester: 2
Anti-requisite: GG3201

Description: This module occupies a central place in our field-based research-orientated degree. It prepares students to undertake their independent Joint Honours research dissertation and develops transferable professional skills useful beyond graduation. Students will learn about research design and the collection of original empirical geographic data through engagement with a series of problem-based geographical issues. Themes covered include: the history and philosophy of geography; ethics of research; statistics for geographers; cartography; GIS; and quantitative, qualitative and physical research methods. There is opportunity for streaming and choice amongst units covering these themes, and Joint Honours students will need to make an informed choice with the help of their advisor, to select from the units shared with the larger 60-credit GG3101. The module concludes with students producing an independent research proposal for their Senior Honours dissertation research.

Class Hour: To be arranged.

Teaching: Lectures, seminars, tutorials and practicals.

Assessment: Continuous Assessment = 100%

GG3221 Feminist and Queer Geographies

Credits: 20 Semester: 1
Availability: 2011-12

Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002

Description: The success of feminist and queer scholarship in the discipline of geography is indexed not only by the emergence of gender and sexuality as separate fields of study but by the way gender and sexuality have become central dimensions of analysis to a broad range of fundamental geographic questions. This module will introduce key concepts in the theorisation of gender and sexuality, contextualize their development in the social sciences more generally, and apply these to a range of contemporary geographic issues including: power, segregation, inequality, representation and the political.

Class Hour: To be arranged.

Teaching: 2 hour lectures

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

GG3222 Environments and Human Behaviour

Credits: 20 Semester: 1
Availability: 2011-12

Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002

Anti-requisite: GE3075

Description: This module will explore the relationship between behaviour 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 disasters situations. It will also consider the nature of attractive land and city-scapes. It will tackle issues such as crime reduction through design and ask whether enforced safety behaviour actually reduces accidents and deaths.

Class Hour: To be arranged.

Teaching: 2 hour lectures.

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

Geography & Geosciences – Honours 2010/11 – August 2010

GG3223 Population in Developing Countries

Credits: 20 Semester: 1
Availability: 2011-12
Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002
Anti-requisite: GG3074

Description: 80 percent of the world's population live in developing countries; this module is about them. Where do they live? How long do they live? How many children do they have? How many are old? The course also examines how these demographic factors interact with wider issues of economic development, social change and environmental impact.

Class Hour: To be arranged.

Teaching: 2 hours of lectures and seminars.

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

GG3224 HIV/AIDS in sub-Saharan Africa

Credits: 20 Semester: 1
Availability: 2011-12
Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002
Anti-requisite: GE4072

Description: This module makes the case for a social-scientific, not merely biomedical understanding of HIV/AIDS in sub-Saharan Africa. It addresses the geographies of this phenomenon, exploring the politics of scaling, uneven global distributions, social contexts that facilitate its spread and the situatedness of sexual decision-making. The module investigates the role of gender relations, poverty, migration and youth. It also explores the everyday geographies of those living with AIDS, and evaluates proposed local and global solutions. The module is reading- and seminar-based. It utilises action-based assessment that challenges students to take their learning out of the classroom and transmit it to other contexts.

Class Hour: To be arranged.

Teaching: Lectures, seminars and tutorials.

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

GG3225 Managing Modern Cities: Strategies for Competitiveness, Sustainability and Social Justice

Credits: 20 Semester: 1
Availability: 2011-12
Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002
Anti-requisite: GG4001

Description: Almost nine out of ten Scots live in cities, suburbs or small towns. Britain as a whole has long been one of the most extensively and densely urbanised countries in the world. Now half the population of the globe lives in cities. This proportion is set to rise to three quarters over the next two to three decades. How can we manage these emerging changes effectively? It is important to understand the economic and demographic changes that drive growth and structural change, and equally important to understand how spatial and other influences shape intra-metropolitan geographies of jobs & unemployment, homes & income segregation, sprawl & over-crowding, environmental quality & decay. Cities are complex recursive systems in which employment, poverty, amenity and sprawl create geographies that impact future competitiveness and environmental sustainability as well as social justice.

Class Hour: To be arranged.

Teaching: 2 hours of lectures and seminars.

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

GG3226 Population Studies: Europe before 1914

Credits: 20 Semester: 1

Availability: 2010-11

Anti-requisite: GE3037

Description: The module introduces the inter-disciplinary field of population studies through the study of the demography of Western Europe between c.1680 and c.1914. It focuses on the major transformations in mortality and fertility that fundamentally changed the demographic dynamics of European populations. Basic demographic measures and relationships that underpin any study of population are first introduced before moving to a detailed examination of the complex set of relationships which underlay Europe's 'demographic transition'. Practical sessions provide hands-on experience of working with historical population sources. Particular attention is paid to geographies of population change in England and Scotland. The module provides a firm foundation from which to develop an understanding of contemporary population change.

Class Hour: To be arranged.

Teaching: Lectures, seminars and practical classes.

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

GG3227 Colonial and Postcolonial Geographies

Credits: 20 Semester: 1

Availability: 2010-11

Anti-requisite: GE3060

Description: This module traces the historical geography of modern colonialism from its sixteenth-century beginnings in Spain's discovery and conquest of the New World, through to the break-up of European colonial empires after World War II, and up to what has been called 'the colonial present' and the 'new imperialism' (revolving around the USA and the 'war on terror'). Emphasis will be placed on how colonialism, past and present, operates as a logic of displacement and dispossession, and as both a conceptual space (imaginative geography) and physical space (material geography) of encounter and conflict and resistance involving a wide array of projects of colonisation and resistance.

Class Hour: To be arranged.

Teaching: Lectures and seminars.

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

GG3228 Geography of Health and Illness

Credits: 20 Semester: 1

Availability: 2010-11

Anti-requisite: GE3073

Description: The module will include discussion of worldwide patterns of health and illness, related to environmental and political factors, and patterns of health and illness within the developed world, especially Britain. Socio-economic factors are compared to health indicators with a consideration of the context / composition debate. The organisation of health systems is discussed with particular reference to the UK's National Health Service. Lecture material is supplemented by seminar discussions and practical classes using the Internet as a source of health data.

Class Hour: To be arranged.

Teaching: Lectures and seminars and fortnightly practicals.

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

Geography & Geosciences – Honours 2010/11 – August 2010

GG3229 Environmental Management in Scotland

Credits: 20 Semester: 1
Availability: 2010-11
Anti-requisite: GE3051

Description: This module explores current environmental management issues in Scotland. It discusses the primary sectors of land & resource management (e.g. forestry, agriculture, wildlife management, freshwater resource management, conservation, renewable energy), and explores how these systems interact. The aim is to leave students with an informed conceptual and empirical 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 shape the future of Scotland's natural heritage within a devolved political framework and in the context of climate change.

Class Hour: To be arranged.

Teaching: Lectures, occasional seminars and a one day field excursion.

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

GG3230 Geographies of Labour Market Behaviour

Credits: 20 Semester: 1
Availability: 2010-11
Anti-requisite: GE3031

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 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: Lectures and seminars.

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

GG3231 The Economic Geography of Homes and Neighbourhoods

Credits: 20 Semester: 1
Availability: 2010-11
Anti-requisite: GE3097

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 to how housing and neighbourhood 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: Lectures and seminars.

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

GG3260 Periglacial Geomorphology

Credits: 20 Semester: 1
Availability: 2011-12
Anti-requisite: GG3036

Description: Periglacial geomorphology is the study of the landforms of cold, non-glacial environments, the processes responsible for creating and modifying such landforms, and the environmental implications of periglacial landforms and deposits. This module focuses on frozen ground, permafrost and frost-action process, landforms and processes associated with cold mountain environments (blockfields, talus, debris flows, avalanches and rock glaciers), periglacial mass-movement (solifluction and active-layer sliding), permafrost hydrology and the geomorphic role of arctic rivers, and the origin of patterned ground. Additionally, students are required to research the origins of particular periglacial phenomena and present their findings in the form of peer-assessed group presentations.

Class Hour: To be arranged.
Teaching: Lectures and seminars, a practical and a residential field course.
Assessment: Continuous Assessment = 40%, 2 Hour Examination = 60%

GG3261 Quaternary Geomorphology of Scotland

Credits: 20 Semester: 1
Availability: 2011-12
Anti-requisites: GG3041, GG3042

Description: This module provides an introduction to current understanding of the evolution of the Scottish landscape during the Quaternary Era, with a particular focus on glacial, periglacial and paraglacial processes and their effects during the last 30,000 years. Introductory lectures on the structure of Scotland, Neogene landscape evolution and Quaternary dating techniques are followed by an in-depth reconstruction of the dimensions and chronology of the last ice sheet, the status of associated ice-sheet readvances, glaciation, periglaciation during the Loch Lomond Stade of 12.9-11.7 ka, Holocene landscape evolution, and Lateglacial and Holocene sea-level change. Students are required to prepare an essay on the glacial history of particular regions in the Scottish Highlands.

Class Hour: To be arranged.
Teaching: Lectures and seminars and a residential field course.
Assessment: Continuous Assessment = 40%, 2 Hour Examination = 60%

GG3262 Climate and Weather Systems

Credits: 20 Semester: 1
Availability: 2011-12
Anti-requisite: GG3069

Description: Weather affects every aspect of life, and is a fundamental control on many environmental systems. This module explores the workings of the atmosphere at a wide range of scales, from the formation of clouds and raindrops, through thunderstorms and cyclones, up to large-scale circulation of the atmosphere. Beginning from first principles, key physical processes are introduced and used to develop a deep understanding of the earth's weather and climate. The module concludes with a critical examination of the climate change debate.

Class Hour: To be arranged.
Teaching: Lectures.
Assessment: Continuous Assessment = 40%, 2 Hour Examination = 60%

Geography & Geosciences – Honours 2010/11 – August 2010

GG3263 Glaciers and Glaciation

Credits: 20 Semester: 1

Availability: 2011-12

Anti-requisites: GG3056, GG4057, GG4058

Description: In recent years, concern has risen about the impact of climate change on glaciers and ice sheets, and the implications for sea level rise, natural hazards and water resources. This course critically evaluates these issues, and explores the fundamental glaciological processes required to understand them. The first part of the course focuses on how glaciers function and interact with climate, and covers glacier mass balance (snowfall and ice melt), hydrology, processes of glacier motion and ice dynamics. The second part then applies these principles to important issues, such as glacier lake outburst floods, water resources in glacier-fed river basins, the future of the Antarctic and Greenland Ice Sheets, and sea level change.

Class Hour: To be arranged.

Teaching: Lectures, seminars and a residential field course.

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

GG3264 Oceans and Climate

Credits: 20 Semester: 1

Availability: 2011-12

Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002

Anti-requisites: GG3067

Description: The oceans play a key role in the global climate system. The aim of this module is to foster an understanding of: (1) changes in ocean circulation and climate, the possible mechanisms for such changes and the wider implications in terms of past, present and future global and regional climates; and (2) to provide an introduction to some of the research methods employed to determine oceanographic changes.

Class Hour: To be arranged.

Teaching: Lectures.

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

GG3265 The Science of Climate Change

Credits: 20 Semester: 1

Availability: 2010-11

Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002

Description: The issue of climate change, and in particular the role that human activity may have in such change, is one of the most challenging environmental problems currently facing society. This module will consider the scientific evidence and arguments that underpin our current understanding of climate change. The module will consider such topics as long-term proxy records of natural climate change (ice cores, marine sediments), historical climatic data sets based upon direct observation, how the climate system is modelled, the evidence for human impacts upon our climate system and areas of current uncertainty within our knowledge. While the focus will be upon the scientific issues, the role of policy makers and the media in the broader perception of the climate change issue will also be introduced.

Class Hour: To be arranged.

Teaching: Lectures and a conference seminar.

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

GG3266 Rivers and Floodplains

Credits: 20 Semester: 1
Availability: 2010-11
Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002 or Passes in GS2011 and GS2012
Anti-requisite: GG3095
Description: Rivers and their floodplains are central to human populations and ecology, but must be carefully understood to maintain their benefits while minimizing risks associated with water supply, water quality, and flooding. This module investigates fluvial hydrology and geomorphology in the context of natural physical processes and their interaction with river management. It focuses on quantitative aspects of floods, sediment/contaminant transport, sedimentation, and floodplain evolution in contemporary settings. Students are required and encouraged to do mathematical calculations and engage with the latest scientific literature. The module highlights important case studies from river systems around the globe.
Class Hour: To be arranged.
Teaching: Lectures, a seminar and tutorials.
Assessment: Continuous Assessment = 100%

GG3267 Ecosystem Ecology

Credits: 20 Semester: 1
Availability: 2010-11
Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002 or Passes in GS2011 and GS2012
Anti-requisite: GG3096
Description: Terrestrial ecosystems modulate the flux of energy and materials at the Earth's surface, regulating trace gas exchange with the atmosphere, cycling of carbon and nutrients in soils, exchange of material with rivers and oceans, and the natural attenuation of pollutants. Understanding the structure and function of terrestrial ecosystems is critical for understanding environmental challenges such as global warming, stratospheric ozone loss, sustainable land management, and pollution. This module develops principles of systems ecology and biogeochemistry, exploring the fundamental role played by life in mediating biophysical and biogeochemical processes in the Earth system. This interdisciplinary module will draw on knowledge and techniques from plant physiological ecology, soil science, microbial ecology, and atmospheric chemistry.
Class Hour: To be arranged.
Teaching: Lectures and tutorials.
Assessment: Continuous Assessment = 60%, 2 Hour Examination = 40%

GG3268 Late Holocene Palaeoclimatology - Studying climate change for the last 2000 years

Credits: 20 Semester: 1
Availability: 2010-11
Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002 or Passes in GS2011 and GS2012
Anti-requisite: GG4090
Description: The current scientific consensus is that recent global warming is outside the range of natural variability when compared to the last 1000 or even 2000 years. This course addresses how this consensus view has been derived, adopting a critical focus (addressing both strengths and limitations) on the key palaeoclimate proxy sources which are used to reconstruct and understand climate for the last two millennia (e.g. ice cores, tree-rings, corals, speleothems, lake/marine sediments and historical documents). The course ends with a critical assessment of the "myths" often cited by the sceptical community to weaken the consensus view. Do the sceptics have a case? How certain is the science really?
Class Hour: To be arranged.
Teaching: Lectures, practicals and a field class.
Assessment: Continuous Assessment = 40%, 2 Hour Examination = 60%

Geography & Geosciences – Honours 2010/11 – August 2010

GG3269 Geochronology: dating the Quaternary and beyond

Credits: 20 Semester: 1
Availability: 2010-11
Prerequisites: Passes in GE2011 and GE2012 or Passes in SD2001 and SD2002 or Passes in GS2011 and GS2012
Description: From measuring lichens to isotopic dating techniques we will use a variety of simple and complex tools to understand the time frames of Earth surface processes such as erosion rates, sequences of moraine deposition, and successions of volcanic eruptions. By investigating research questions you will apply several dating techniques during practicals.
Class Hour: To be arranged.
Teaching: Lectures and practicals.
Assessment: Continuous Assessment = 50%, 2 Hour Examination = 50%

GG3301 Special Topic for Joint Honours in Geography (Junior Honours)

Credits: 10 Semester: 1
Availability: 2010-11
Prerequisites: Entry to a Joint Honours programme in Geography
Description: This module is designed to allow Joint Honours students in their Junior Honours year to engage with the subject matter of a selected 20-credit optional module in Geography (GG3221 - GG3289) yet balance the workload across the four semesters of their Honours programme. Students complete the contact hours of their chosen module but undertake a separate assessment.
Class Hour: To be arranged.
Teaching: To be arranged.
Assessment: Continuous Assessment = 100%

GG3302 Special Topic for Joint Honours in Geography (Senior Honours)

Credits: 10 Semester: 1
Availability: 2010-11
Prerequisites: Entry to a Joint Honours programme in Geography
Description: This module is designed to allow Joint Honours students in their Senior Honours year to engage with the subject matter of a selected 20-credit optional module in Geography (GG3221 - GG3289) yet balance the workload across the four semesters of their Honours programme. Students complete the contact hours of their chosen module but undertake a separate assessment.
Class Hour: To be arranged.
Teaching: To be arranged.
Assessment: Continuous Assessment = 100%

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

Credits: 15 Semester: 2
Availability: 2010-11 only
Anti-requisite: GG3268
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%

GG4201 Advanced Debates in Geography

Credits: 10 Semester: 2

Prerequisites: Entry to Honours in Geography and normally passes in *either* GG3201 Method, field, data: Researching geographies in practice *or* GG3202 Joint Honours in Geography

Description: This module extends and provides a summation of work undertaken in the geography Honours programme, providing students with an opportunity to reflect on the scope and diversity of geography as a discipline and to think holistically about their own learning. The module is structured around a set of readings and seminars that encourage student to study and debate important contemporary issues and debates within geography (e.g. climate change, globalisation, the nature of social inequality, the interface between nature and culture). It is examined with a single three-hour examination comprised of a mixture of seen and unseen exam questions. These address the nature of geography as a discipline and the way in which geographical reasoning has or might be applied to significant contemporary issues.

Class Hour: To be arranged.

Teaching: Introductory lecture and 2 hour seminars.

Assessment: 3 Hour Examination = 100%

GG4221 Review Essay in Geography

Credits: 20 Semester: 1

Prerequisites: Entry to Honours in Geography and normally passes in *either* GG3201 Method, field, data: Researching Geographies in Practice *or* GG3202 Method, Field, Data: research training for Joint Honours in Geography

Anti-requisite: GE4019

Description: This elective requires students to identify independently and to review a body of literature within the discipline of Geography, giving an account of its substantive content, but also critically assessing the science on which it is based. Students can *either*, identify an intellectual field that lies outside those addressed in available 3000-level options modules, *or* build on a field covered in the programme, pursuing it at greater depth. In addition to supervisory sessions and module tutorials, students may also attend sessions in a relevant 3000-level option module running in the same semester.

Class Hour: To be arranged.

Teaching: Introductory lecture and seminar followed by tutorials.

Assessment: Continuous Assessment = 100%

GG4222 Geographies of Difference: Advanced Qualitative Analysis

Credits: 20 Semester: 1

Prerequisites: Entry to Honours in Geography and normally passes in *either* GG3201 *or* GG3202

Description: This module offers advanced training in methods of qualitative analysis that facilitate dissertation work and develop transferable skills for future careers. Learning will be project/problem-based, and students will gain practical experience of working with a range of qualitative data (e.g. archives, visual and textual documents and interview transcripts) using a range of analytical approaches (e.g. discourse analysis, deconstruction, grounded theory and computer assisted qualitative analysis). Research data will be drawn from a range of areas within human geography (e.g. cultural, historical, political, social, environmental, health and development geography) and will address issues of social, cultural, gender, sexual, and or generational difference. Techniques, themes and materials will alternate in accordance with staff availability.

Class Hour: To be arranged.

Teaching: Two seminars and two practical classes.

Assessment: Continuous Assessment = 100%

Geography & Geosciences – Honours 2010/11 – August 2010

GG4223 Geographies of Inequality: Advanced Quantitative Analysis

Credits: 20 Semester: 1

Prerequisites: Entry to Honours in Geography and normally passes in *either* GG3201 *or* GG3202

Description: Students taking this module will learn some of the core research skills necessary to be a professional quantitative social science researcher and then to carry out a typical consulting project. It will allow them to explore a substantive policy issue, carry out their own quantitative research and then make recommendations based on these findings. They will be presented with a ‘real world’ scenario and be expected to take on the role of a researcher who is advising policy makers; in simulations of various policy forums, they will then learn how to defend their recommendations and advice. They will first be taught the relevant quantitative research skills and introduced to potentially useful research resources. They will then be expected to construct their own research strategy, carry out the necessary research and present this in various formats, working independently of the teaching staff.

Class Hour: To be arranged.

Teaching: Lectures, tutorials and practical classes.

Assessment: Continuous Assessment = 100%

GG4224 Advanced Topics in Physical Geography

Credits: 20 Semester: 1

Prerequisites: Entry to Honours in Geography and normally passes in *either* GG3201 *or* GG3202

Description: This module will introduce students to a range of advanced and cutting edge topics in Physical Geography. Four topics will be offered each year that will build on material explored in 3000-level Honours modules, and will also expand and deepen students’ practical skill base. Each topic will include in-depth study of the primary literature, combined with advanced training in analytical, technical or methodological approaches, thus integrating “hands-on” applied learning with critical reading of the primary literature.

Class Hour: To be arranged.

Teaching: 2 hour lectures and one one-day field class.

Assessment: Continuous Assessment = 100%

GG4297 Joint Honours Research Dissertation in Geography

Credits: 30 Semester: 2

Prerequisites: Entry to Honours in Geography and a pass in GG3202

Anti-requisites: GG4298, GE4018

Description: The research dissertation is the fundamental piece of independent work upon which the Geography degree is based. It provides students with the opportunity to design and undertake an independent, original piece of empirical research under the supervision of a member of staff. The dissertation is a substantial, independent piece of research that represents the culmination of both substantive and core training in Geography.

Class Hour: To be arranged.

Teaching: tutorials.

Assessment: Dissertation of not more than 10,000 words = 100%

GG4298 Research Dissertation in Geography

Credits: 50 Semester: 2
Prerequisites: Entry to Honours in Geography and a pass in GG3201
Anti-requisites: GG4297, GE4018

Description: The research dissertation is the fundamental piece of independent research work upon which the Geography degree is based. It provides students with the opportunity to design and undertake an independent, original piece of empirical research under the supervision of a member of staff. The dissertation is a substantial, independent piece of research that represents the culmination of substantive and core training in Geography. An important component of the dissertation is the annual Senior Honours Research Conference at which all students present their work to members of the school and to Junior Honours students in either oral paper sessions or scientific poster sessions.

Class Hour: To be arranged.
Teaching: tutorials.
Assessment: Dissertation of not more than 12,000 words and Conference paper = 100%

GG4301 Advanced Study for Joint Honours in Geography

Credits: 10 Semester: 1
Availability: 2010-11
Prerequisites: Entry to a Joint Honours programme in Geography, and normally a pass in GG3301

Description: This module is designed to allow Joint Honours students in their Senior Honours year to engage with the subject matter of a selected 20-credit optional module in Geography (GG3221 - GG3289) yet balance the workload across the four semesters of their Honours programme. Students complete the contact hours of their chosen module but undertake a separate assessment, at 4000-level (an advanced essay).

Class Hour: To be arranged.
Teaching: To be arranged.
Assessment: Continuous Assessment = 100%

Geography (GG) Modules which apply to Geoscience Degrees

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%

Geography & Geosciences – Honours 2010/11 – August 2010

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:	45	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

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: 45 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%

GS4009 Joint Honours Research Project

Credits: 20 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%

Geography & Geosciences – Honours 2010/11 – August 2010

GS4083 Granites and Basalts

Credits: 15 Semester: 2

Availability: 2010-11

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

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: not available 2010-11

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

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%

GS4085 Geodynamics

Credits: 15 Semester: 2

Prerequisites: [GS2011, GS2012]-to get into honours you must have done these. GS3081 *and* admission to Honours Geoscience

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

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: 1

Prerequisites: GS2011, GS2012 *and* admission to Honours Geoscience

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%

ID4441 Combined Chemistry and Geoscience Research Project

Credits: 40 Semester: Whole Year

Prerequisites: Admission to stage 4 of BSc programme in Joint Honours Chemistry and Geoscience

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%

