

School of Geography & Geosciences

Environmental Geography (EG) modules

EG3020 Global Climate Change				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
Climate change is one of the most challenging environmental problems currently facing society. Recent global warming likely lies outside the range of natural variability when compared to the last 1000 or even 2000 years. This module addresses how this consensus view has been derived and considers the scientific evidence and arguments that underpin our current understanding of climate change. The module examines both strengths and limitations of long-term proxy climate records, historical datasets based upon direct observation, models of the climate system, and areas of greatest uncertainty within current knowledge. The impacts and policy responses to climate change are also introduced.				
Programme module type:	Optional for Earth Sciences, Geography and Environmental Earth Sciences			
Pre-requisite(s):	Normally ES2002 or ES2003 with the caveat that students with Geography Level 2 would also be acceptable.			
Anti-requisite(s):	GG3265, GG3268			
Learning and teaching methods and delivery:	Weekly contact: Lectures, practicals and tutorials			
	Scheduled learning: 35 hours		Guided independent study: 115 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%			
Module Co-ordinator:	Dr J Walden			
Lecturer(s)/Tutor(s):	Dr J Walden, Dr R Wilson, Dr T Hill, Dr T Raub			

EG3031 Special Topic for Physical Geography				
SCOTCAT Credits:	5	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Availability restrictions:	Available only to Geography students			
Planned timetable:	To be arranged.			
This module provides support and guidance for geography students taking one of the Earth & Environmental Science modules offered as part of the Geography degree (normally ES3020-ES3030). In addition Geography MA and BSc students taking 15-credit modules from the Science Faculty may find themselves 5 credits short and this module provides the necessary credit top-up.				
Programme module type:	Optional for Geography students also taking one of EG3020 - EG3030			
Pre-requisite(s):	Acceptance onto the Geography Honours Programme.			
Co-requisite(s):	One from EG3020 - EG3030			
Learning and teaching methods and delivery:	Weekly contact: Occasional tutorials.			
	Scheduled learning: 8 hours		Guided independent study: 40 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr J Walden			
Lecturer(s)/Tutor(s):	Dr J Walden			

Earth & Environmental Sciences (ES) modules

ES3001 Geological Mapping				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
This module provides training in independently constructing and interpreting geological maps and cross sections. It develops the student's abilities to recognise structures in both two and three dimensions and, by inferring how these structures have changed with time, to develop four-dimensional intellectual skills. The module provides training in defining geological sampling strategies and field report writing.				
Programme module type:	Compulsory for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Science			
Pre-requisite(s):			Anti-requisite(s):	
Required for:	ES3006, ES3010			
Learning and teaching methods and delivery:	Weekly contact: 1 hour of practicals or lectures each week and occasional 2-hour fieldwork tutorials.			
	Scheduled learning: 19 hours		Guided independent study: 131 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr T Prave			
Lecturer(s)/Tutor(s):	Dr T Prave			

ES3002 Analytical and Statistical Methods in Earth Sciences				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	11.00 am - 1.00 pm Mon (analytical methods), 2.00 pm - 4.00 pm Thu (stats).			
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.				
Programme module type:	Compulsory for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Science			
Required for:	ES3003, ES3008			
Learning and teaching methods and delivery:	Weekly contact: Lectures, practicals, tutorials, lab time and a mini-conference.			
	Scheduled learning: 51 hours		Guided independent study: 99 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr A Finch			
Lecturer(s)/Tutor(s):	Dr A Finch, Dr R Wilson			

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ES3003 GIS and Spatial Analysis for Earth Scientists				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	10.00 am - 1.00 pm Mon, Wed (lecture plus lab session).			
<p>This module covers the principles behind, and practical application of, spatial analysis in Earth Sciences. This includes the analysis of primary and secondary datasets, how to access and import a variety of data types, and the fundamentals of various spatial analytical methods including spatial statistics and modeling within a GIS environment. The module also prepares students for the correct presentation of maps and datasets in the dissertation proposal and thesis.</p>				
Programme module type:	Compulsory for BSc Geology and Environmental Earth Science, and MGeol Earth Science			
Pre-requisite(s):	Normally ES3002			
Learning and teaching methods and delivery:	Weekly contact: 2-3 lectures and practicals per week over 6 weeks.			
	Scheduled learning: 48 hours		Guided independent study: 102 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr R A J Robinson			
Lecturer(s)/Tutor(s):	Dr R A J Robinson			

ES3004 Sedimentology and Stratigraphy				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	10.00 am – 1.00 pm Mon and Wed (lectures), 2.00 – 5.00 pm Fri (practicals). 3 field days (9.00 am – 5.00 pm).			
<p>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, 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 fourth-year field course.</p>				
Programme module type:	Programme module type: Compulsory for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Science			
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures, practicals and field training			
	Scheduled learning: 54 hours		Guided independent study: 96 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%			
Module Co-ordinator:	Dr T Prave			
Lecturer(s)/Tutor(s):	Dr T Prave, Dr R Robinson, Mr S Allison			

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ES3005 Field Remote Sensing Methods in Earth Sciences				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>This module covers the principles behind, and practical application of, field remote sensing methods in Earth Sciences. Key methods are presented that include survey techniques and remote sensing using high resolution geophysics for solid and drift mapping and soil 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.</p>				
Programme module type:	Compulsory for BSc Geology and Environmental Earth Science, and MGeol Earth Science			
Required for:	ES3008			
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures, practicals, demonstrations and tutorials			
	Scheduled learning: 29 hours		Guided independent study: 121 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr R Bates			
Lecturer(s)/Tutor(s):	Dr R Bates			

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ES3006 Advanced Geological Mapping				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	9.00 am - 5.00 pm Fri (map practicals).			
<p>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.</p>				
Programme module type:	Compulsory for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Science			
Pre-requisite(s):	ES3001	Required for:	ES4001	
Learning and teaching methods and delivery:	Weekly contact: Weekly practicals and fieldwork.			
	Scheduled learning: 83 hours		Guided independent study: 67 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr A Finch			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES3007 Structural Geology and Tectonics				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	11.00 am Tue and Thu (lectures), 2.00 – 5.00 pm (practicals)			
<p>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.</p>				
Programme module type:	Compulsory for BSc Geology and MGeol Earth Science			
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures, practicals and fieldwork.			
	Scheduled learning: 44 hours		Guided independent study: 106 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%			
Module Co-ordinator:	Prof P Cawood			
Lecturer(s)/Tutor(s):	Prof P Cawood			

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ES3008 Environmental Geoscience				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	12.00 noon Tue and Thu (lectures), 2.00 - 5.00 on Thu (practicals).			
The module focuses on building a comprehensive understanding of the Earth surface system, examining mineral-solution equilibria, the global carbon cycle, chemical weathering and soil genesis, controls on riverine and marine chemistry, and the role of microorganisms in cycling matter through the Earth's surface. These concepts are widely applicable to many problems across the Earth and environmental sciences, but are specifically used in this module to solve problems facing modern environmental geoscientists such as acid mine drainage, riverine / groundwater pollution and remediation, waste disposal, global climate change, and carbon sequestration. Case studies based on published data are used extensively.				
Programme module type:	Compulsory for BSc Environmental Earth Science and MGeol Earth Science Optional for BSc Geology and joint degrees with Biology and Chemistry			
Pre-requisite(s):	Normally ES3002, ES3005			
Learning and teaching methods and delivery:	Weekly contact: 17 lectures, 15 hours of laboratory classes, 2 or more field classes over the semester.			
	Scheduled learning: 54 hours		Guided independent study: 96 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%			
Module Co-ordinator:	Dr N Tosca			
Lecturer(s)/Tutor(s):	Dr NTosca, Dr E Tipper			

ES3009 Igneous and Metamorphic Petrology				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	2.00 pm - 5.00 pm Mon (practicals), 10.00 am Tue and Thu (lectures).			
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.				
Programme module type:	Compulsory for BSc Geology, joint degrees with Biology and Chemistry, and MGeol Earth Science; optional for BSc Environmental Earth Science			
Required for:	ES4006			
Learning and teaching methods and delivery:	Weekly contact: Lectures and practicals.			
	Scheduled learning: 38 hours		Guided independent study: 112 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 50%, Coursework = 0%			
	As used by St Andrews: 2-hour Written Examination = 50%, 2 x 2-hour Practical Examination = 50%			
Module Co-ordinator:	Dr C Donaldson			
Lecturer(s)/Tutor(s):	Dr C Donaldson, Dr E T Tipper, Dr A A Finch			

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ES3010 Advanced Environmental Field Methods				
SCOTCAT Credits:	15	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
This forms the introduction to methodologies and training in applied environmental problems. A specific environmental problem will be identified, and researched in detail before a one-week field excursion (see below) where an environmental impact problem will be addressed in the field including mapping geology, drift, surface and sub-surface hydrology and environmental impact.				
Programme module type:	Compulsory for BSc Environmental Earth Science			
Pre-requisite(s):	ES3001	Required for:	ES4008	
Learning and teaching methods and delivery:	Weekly contact: Fortnightly seminar and 2 x 1-week field excursion/courses.			
	Scheduled learning: 53 hours		Guided independent study: 97 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr E T Tipper			
Lecturer(s)/Tutor(s):	Dr E T Tipper			

ES3099 Field Methods in Geosciences				
SCOTCAT Credits:	30	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Availability restrictions:	Available to visiting students only.			
Planned timetable:	none - field-based module.			
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.				
Programme module type:	Available to visiting students only.			
Pre-requisite(s):	Must be studying Earth Science at an overseas university			
Learning and teaching methods and delivery:	Weekly contact: Occasional lectures, tutorials and practicals in addition to fieldwork.			
	Scheduled learning: 268 hours		Guided independent study: 32 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr R A J Robinson			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

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ES4001 Field Excursion and Map Interpretation				
SCOTCAT Credits:	15	SCQF Level 10	Semester:	1
Academic year:	2013/4			
Planned timetable:	12 days fieldwork in August – September. 9.00 am – 5.00 pm Fri (practicals)			
	Building on the field training of JH, this module develops the field observation and interpretation skills of collecting, recording, interpreting and synthesising data in the field and from geological maps and cross-sections. 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. Fieldwork will be combined with the interpretation of a region as represented on a geological map. Students will also be trained in the techniques of interpreting remotely sensed images of the Earth's surface by aerial photography and satellite imagery and constructing cross-sections.			
Programme module type:	Compulsory for BSc Geology and MGeol Earth Science			
Pre-requisite(s):	normally ES3006			
Learning and teaching methods and delivery:	Weekly contact: 2-week field course and 4 lab sessions.			
	Scheduled learning: 84 hours		Guided independent study: 66 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr T Prave			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES4002 Research Review, Essay and Seminar				
SCOTCAT Credits:	15	SCQF Level 10	Semester:	1 & 2 (taught twice)
Academic year:	2013/4			
Availability restrictions:	B.Sc. students may only take this module in semester 1, M.Geol. students can take this module in either semester.			
Planned timetable:	Not applicable.			
	The student proposes an Earth Science topic, one that has not been directly covered in a module. They discuss the suitability of the topic with a lecturer who agrees to become adviser to the student. Student and adviser are required to meet 2 further times during the module. Literature and web-based research is conducted and the student writes a critical review of ca. 3,500 words. The same material is also presented in a 15 minute seminar to staff and classmates. Advice on critical writing and presenting talks is given a year before the start of the module, on entry to Junior Honours, for use throughout the Honours programme. The seminar is assessed by both lecturers and peers. The module is normally carried out in Semester 1 but a Semester 2 Research Review may be considered for M.Geol. students on a case by case basis.			
Programme module type:	Compulsory for BSc Geology and Environmental Earth Science, and MGeol Earth Science			
Pre-requisite(s):	Admission to an Honours Earth Sciences programme or Environmental Earth Science			
Learning and teaching methods and delivery:	Weekly contact: 1 lecture per week and 3 meetings with adviser.			
	Scheduled learning: 4 hours		Guided independent study: 146 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 15%, Coursework = 85%			
	As used by St Andrews: Practical Examination = 15%, Coursework = 85%			
Module Co-ordinator:	Dr C H Donaldson			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

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ES4003 Research Dissertation				
SCOTCAT Credits:	45	SCQF Level 10	Semester:	Whole Year
Academic year:	2013/4			
Availability restrictions:	Available only to Single Honours Earth Science students			
Planned timetable:	Not applicable.			
<p>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). (Guidelines for printing and binding dissertations can be found at: http://www.st-andrews.ac.uk/printanddesign/dissertation/)</p>				
Programme module type:	Compulsory for BSc Geology and Environmental Earth Science			
Learning and teaching methods and delivery:	Weekly contact: none			
	Scheduled learning: 20 hours		Guided independent study: 430 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 10%, Coursework = 90%			
	As used by St Andrews: Proposal = 5%, Oral presentation = 10%, Dissertation = 85%			
Module Co-ordinator:	Dr T D Raub			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES4004 Integrated Earth Sciences				
SCOTCAT Credits:	15	SCQF Level 10	Semester:	Whole Year
Academic year:	2013/4			
Planned timetable:	10.00 am Mon and Wed (lectures). 9.00 – 12.00 noon Tue (practicals).			
<p>This module develops independent and critical thinking for students, writing skills, and confidence in discussions and therefore supports the dissertation module offered in fourth year. It also promotes the integration of knowledge in Earth and environmental sciences gained over four years, bringing together the various themes explored in the modules of the degree. It is assessed by reports based on seminars and associated literature, a single comprehensive 4-hour laboratory practical exam, and a Dissertation Conference where a poster on the key findings is produced and presented. Career skills are developed through a mock job application and interview with aff and professionals from industry.</p>				
Programme module type:	Compulsory for BSc Geology and Environmental Earth Science			
Pre-requisite(s):	Completion of Level 3 Geology			
Learning and teaching methods and delivery:	Weekly contact: Attendance at Department research seminars and visiting lectures compulsory. Tutorials, feedback sessions and mock job application to be arranged.			
	Scheduled learning: 6 hours		Guided independent study: 144 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 70%, Coursework = 30%			
	As used by St Andrews: 4-hour Practical Examination = 70%, Coursework = 30%			
Module Co-ordinator:	Dr R A J Robinson			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences Staff			

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ES4006 Advanced Igneous Petrogenesis				
SCOTCAT Credits:	15	SCQF Level 10	Semester:	1
Academic year:	2013/4			
Planned timetable:	10.00 am Mon and Wed (lectures). 9.00 – 12.00 noon Tue (practicals)			
<p>The Earth's crust is largely created by acid and basic magmatism and many of the planet's critical resources are formed from igneous processes. The module explores the nature of that magmatism, the petrography and geochemistry of the minerals and 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. The economic significance of alkaline rocks as the hosts for many of the world's critical metals is considered.</p>				
Programme module type:	Optional for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Science			
Pre-requisite(s):	Normally ES3009			
Learning and teaching methods and delivery:	Weekly contact: 18 lectures, 15 hours of laboratory work, 18 hours of field-related study over the semester.			
	Scheduled learning: 50 hours		Guided independent study: 100 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 50%, Coursework = 0%			
	As used by St Andrews: 2-hour Written Examination = 50%, 3-hour Practical Examination = 50%			
Module Co-ordinator:	Dr C H Donaldson			
Lecturer(s)/Tutor(s):	Dr C H Donaldson, Dr A A Finch			

ES4007 Petroleum Exploration and Geophysics				
SCOTCAT Credits:	15	SCQF Level 10	Semester:	1
Academic year:	2013/4			
Planned timetable:	11.00 am – 1.00 pm Thu (lectures), 2.00 -5.00 pm Thu (practicals).			
<p>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.</p>				
Programme module type:	Optional for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Science			
Learning and teaching methods and delivery:	Weekly contact: 17 lectures, 15 hours laboratory classes, field classes over the semester.			
	Scheduled learning: 38 hours		Guided independent study: 112 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%			
Module Co-ordinator:	Dr R Bates			
Lecturer(s)/Tutor(s):	Dr R Bates, Dr T Prave			

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ES4008 Environmental Excursion and Maps				
SCOTCAT Credits:	15	SCQF Level 10	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
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 and key analytical techniques.				
Programme module type:	Compulsory for BSc Environmental Earth Science			
Pre-requisite(s):	ES3010			
Learning and teaching methods and delivery:	Weekly contact: Lectures and practical classes			
	Scheduled learning: 36 hours		Guided independent study: 114 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr R A J Robinson			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES4010 Joint Honours Research Project				
SCOTCAT Credits:	30	SCQF Level 10	Semester:	Whole Year
Academic year:	2013/4			
Planned timetable:	Not applicable.			
An individual research project allows the student to pursue in depth a topic of personal interest. The student works largely independently and has the opportunity to demonstrate individuality, initiative and enterprise. Projects will normally include an aspect of field and analytical science. Skills of planning and executing research are learned, as well as the ability to work independently, and present the results orally and in dissertation form (up to 7,000 words).(Guidelines for printing and binding dissertations can be found at: http://www.st-andrews.ac.uk/printanddesign/dissertation/)				
Programme module type:	ES4010 and CH4448) OR ID4441 Compulsory for joint degrees with Biology and Chemistry			
Pre-requisite(s):	Admission to Joint Honours Geology			
Learning and teaching methods and delivery:	Weekly contact: none			
	Scheduled learning: 20 hours		Guided independent study: 280 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 10%, Coursework = 90%			
	As used by St Andrews: Proposal = 5%, Oral Presentation = 10%, Dissertation = 85%			
Module Co-ordinator:	Dr T A Raub			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

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ES4011 Work Placement in Earth Sciences				
SCOTCAT Credits:	30	SCQF Level 10	Semester:	1 or 2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>Practical experience of Earth Sciences is important to graduate job prospects and for students to understand the practical relevance of taught material course. This module is a platform for the students to obtain experience of the workplace through an 8-week industrial placement. The student finds their own work placement, some with the assistance of staff connections in industry and alumni. Work placements can be of a variety of forms, varying from office or lab-based work to engineering geology at sites in the UK to exploration geology across the world. The performance of the student in the workplace is assessed using similar criteria to those used when applying for Chartered (CGeol) status. The student reports on their activities during placement at the end of the placement period.</p>				
Programme module type:	ES4011 or ES4012 is compulsory for BSc Earth Sciences and MGeol Earth Science			
Learning and teaching methods and delivery:	Weekly contact: Meetings.			
	Scheduled learning: 0 hours		Guided independent study: 0 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 30%, Coursework = 70%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr A A Finch			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES4012 Research Placement in Earth Sciences				
SCOTCAT Credits:	30	SCQF Level 10	Semester:	1 or 2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>Practical experience of Earth Sciences is important to graduate job prospects and for students to understand the practical relevance of taught material in the course. The present module is a platform for the students to obtain experience of the working in an academic research team through a research placement. The student finds their own placement by negotiating with staff. The performance of the student in the workplace is assessed using similar criteria to those used when applying for Chartered (CGeol) status. The student reports on their activities during placement at the end of the placement period.</p>				
Programme module type:	ES4011 or ES4012 is compulsory for BSc Earth Sciences and MGeol Earth Science			
Learning and teaching methods and delivery:	Weekly contact: Meetings.			
	Scheduled learning: 0 hours		Guided independent study: 0 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr R Bates			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES5001 Expedition Field Course				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	Summer
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>Fieldwork in Earth Sciences is key to graduate job prospects and is a platform for students to bring together the many aspects of Earth Sciences. The present module will involve the students not just in carrying out fieldwork, but also in the logistical and interpersonal sides of success fieldwork design. Students will identify a field area for study in consultation with a member of the teaching staff, which includes several aspects of Earth sciences, such as igneous, sedimentary, economic and environmental geology. The students will form a team and divide the responsibilities for fieldwork and logistics. The assessment will include a memoir that will summarise the geological history of the area, similar to that published by a Geological Survey or the exploration industry. Some student groups may choose to use this module to carry out ambitious fieldwork in a remote setting.</p>				
Programme module type:	Compulsory for M.Geol.in Earth Sciences			
Pre-requisite(s):	Acceptance to Year 5 of MGeol in the Department of Earth Sciences			
Learning and teaching methods and delivery:	Weekly contact: 5 hours of orientation/tutorials over 2 weeks			
	Scheduled learning: 10 hours		Guided independent study: 140 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr T Prave			

ES5003 Research Dissertation				
SCOTCAT Credits:	60	SCQF Level 11	Semester:	Whole Year
Academic year:	2013/4			
<p>An individual research project on a topic in geological sciences 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 7,000 words). The project report will be as a publication-ready article in the manner of the journal "Geology".</p>				
Programme module type:	Compulsory for M.Geol. Earth Sciences			
Learning and teaching methods and delivery:	Weekly contact: 3 Introductory meetings and regular meetings with supervisor.			
	Scheduled learning: hours		Guided independent study: hours	
Assessment pattern:	As defined by QAA: Written Examinations = %, Practical Examinations = %, Coursework = 100%			
	As used by St Andrews: Coursework = 100% (Project proposal = 5%, Oral Presentation = 10%, Dissertation = 85%)			
Module Co-ordinator:	Dr R Bates			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

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ES5004 Integrated Earth Sciences				
SCOTCAT Credits:	30	SCQF Level 11	Semester:	Whole Year
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>This module requires students to think of themselves as practitioners of a single integrated subject and thereby to bring together the various themes they have explored in the modules taken through their degree programme. It also promotes independent, critical thinking across the subject. It is assessed by reports on talks/key topics, attendance at a major international conference (EGU) and a single 4-hour exam, in which students are given many different forms of geological data (numerical, thin section, hand specimen, maps etc.) and asked to solve a complex geological problem. The module also acts as a platform through which we deliver employment skills and involves a mock job interview.</p>				
Programme module type:	Compulsory for M.Geol. Earth Sciences			
Learning and teaching methods and delivery:	Weekly contact: Tutorials, mock job interview, assistance in preparation of EGU throughout the year.			
	Scheduled learning: hours		Guided independent study: hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = %, Coursework = 50%			
	As used by St Andrews: 4-hour Written Examination = 50%, Coursework = 50%			
Module Co-ordinator:	Dr A A Finch			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES5009 Geodynamics				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>A study of the geodynamic evolution of Earth's crust since the Archaean, the evolution of convergent and divergent margins, and the relationships between tectonics, erosion and climate. hydrosphere. The module contrasts geodynamic evolution in the Archaean, Proterozoic, Palaeozoic, Mesozoic and Cenozoic using a number of case studies, including examples visited in the field. The module develops skills of geodynamic interpretation, field observation, use of numerical models, report writing and oral presentation.</p>				
Programme module type:	Compulsory for M.Geol. Earth Sciences; optional for B.Sc. Geology, Environmental Earth Science, and joint degrees in Biology and Chemistry			
Learning and teaching methods and delivery:	Weekly contact: 12 lectures, 1 laboratory class, 2 days in the field.			
	Scheduled learning: hours		Guided independent study: hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = %, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%,			
Module Co-ordinator:	Prof P Cawood			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

Geography (GG) modules

GG3201 Method, Field, Data: Researching Geographies in Practice				
SCOTCAT Credits:	60	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
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.				
Programme module type:	Compulsory for Single Honours Geography			
Anti-requisite(s):	GG3202, GG3203			
Required for:	GG4201, GG4221, GG4222, GG4223, GG4224, GG4225, GG4298, GG4301			
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars, tutorials and practicals.			
	Scheduled learning: 150 hours		Guided independent study: 450 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr D McCarthy			
Lecturer(s)/Tutor(s):	Team taught			

GG3202 Method, Field, Data: Research Training for Joint Honours in Geography				
SCOTCAT Credits:	30	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
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 GG3201. The module concludes with students producing an independent research proposal for their Senior Honours dissertation research.				
Programme module type:	Compulsory for Joint Honours Geography			
Anti-requisite(s):	GG3201, GG3203			
Required for:	GG4221, GG4222, GG4223, GG4224, GG4225, GG4297, GG4301			
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars, tutorials and practicals.			
	Scheduled learning: 75 hours		Guided independent study: 225 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr D McCarthy			
Lecturer(s)/Tutor(s):	Team taught			

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GG3203 Method, Field, Data: Research Training for Major Honours in Geography				
SCOTCAT Credits:	50	SCQF Level 9	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>This module occupies a central place in our field-based research-orientated degree. It prepares students to undertake their independent 50-credit research dissertation (GG4298) 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. Students are also required to attend an overseas field course. There is opportunity for streaming and choice amongst units covering these themes, and Major 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 GG3201. The module concludes with students producing an independent research proposal for their Senior Honours dissertation research.</p>				
Programme module type:	Compulsory for Geography with Social Anthropology, Geography with Spanish			
Anti-requisite(s):	GG3201, GG3202			
Required for:	GG4221, GG4222, GG4223, GG4224, GG4225, GG4298, GG4301			
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars, tutorials and practicals.			
	Scheduled learning: 125 hours		Guided independent study: 375 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr D McCarthy			
Lecturer(s)/Tutor(s):	Team taught			

GG3221 Geographies of Identity and Power				
SCOTCAT Credits:	20	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>Drawing on theories of gender and sexuality, this module charts how political questions about identity and power have become central to a broad range of contemporary issues. This module introduces key concepts in the theorisation of gender and sexuality, contextualises their development in the social sciences more generally, and applies them to a range of contemporary geographic issues including: power, segregation, inequality, representation and the political.</p>				
Programme module type:	Optional for all degrees involving Geography			
Learning and teaching methods and delivery:	Weekly contact: 2-hour lecture.			
	Scheduled learning: 22 hours		Guided independent study: 178 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%			
Module Co-ordinator:	Dr M B Sothern			
Lecturer(s)/Tutor(s):	Dr M B Sothern			

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GG3224 HIV/AIDS in sub-Saharan Africa				
SCOTCAT Credits:	20	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography			
Anti-requisite(s):	GE4072			
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars and/or tutorials.			
	Scheduled learning: 22 hours		Guided independent study: 178 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 25%, Practical Examinations = 25%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 25%, 2-hour Practical Examination = 25%, Coursework = 50%			
Module Co-ordinator:	Dr M G Kesby			
Lecturer(s)/Tutor(s):	Dr M G Kesby			

GG3225 Managing Modern Cities: Strategies for Competitiveness, Sustainability and Social Justice				
SCOTCAT Credits:	20	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography			
Learning and teaching methods and delivery:	Weekly contact: 2 hours of lectures and seminars.			
	Scheduled learning: 22 hours		Guided independent study: 178 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 60%, Practical Examinations = 0%, Coursework = 40%			
	As used by St Andrews: 2-hour Written Examination = 60%, Coursework = 40%			
Module Co-ordinator:	Prof D Maclennan			
Lecturer(s)/Tutor(s):	Prof D Maclennan			

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GG3233 Transport and Sustainability				
SCOTCAT Credits:	20	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>This module provides an outline of the important roles that transport plays in facilitating economic development and globalisation, while identifying crucial constraints and vulnerabilities associated with complex transport networks and supply chains. Key environmental impacts associated with transport are highlighted, together with potential solutions, in the context of wider debates surrounding sustainability. The rationale for state intervention in transport provision is outlined, and models of private and public ownership and market regulation are critically examined, employing examples from air, bus and rail transport. Transport policy and planning in the UK is critically examined, and illustrated using case studies. The multi-disciplinary nature of transport studies is examined, with some reflections on the role of Transport Geography in particular.</p>				
Programme module type:	Optional for all degrees involving Geography			
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures and seminars.			
	Scheduled learning: 64 hours		Guided independent study: 136 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 60%, Practical Examinations = 0%, Coursework = 40%			
	As used by St Andrews: 2-hour Written Examination = 60%, Coursework = 40%			
Module Co-ordinator:	Dr D S Houston			
Lecturer(s)/Tutor(s):	Dr D S Houston			

GG3260 Periglacial Geomorphology				
SCOTCAT Credits:	20	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography, and - by arrangement - Environmental Geoscience			
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures and seminars, a practical and a residential field course.			
	Scheduled learning: 27 hours		Guided independent study: 173 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 60%, Practical Examinations = 24%, Coursework = 16%			
	As used by St Andrews: 2-hour Written Examination = 60%, Practical Examination = 24%, Coursework = 16%			
Module Co-ordinator:	Prof C K Ballantyne			
Lecturer(s)/Tutor(s):	Prof C K Ballantyne			

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GG3261 Quaternary Geomorphology of Scotland				
SCOTCAT Credits:	20	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography, and - by arrangement - Environmental Geoscience			
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures and seminars and a residential field course.			
	Scheduled learning: 29 hours		Guided independent study: 171 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 60%, Practical Examinations = 10%, Coursework = 30%			
	As used by St Andrews: 2-hour Written Examination = 60%, Practical Examination = 10%, Coursework = 30%			
Module Co-ordinator:	Prof C K Ballantyne			
Lecturer(s)/Tutor(s):	Prof C K Ballantyne			

GG3271 Coastal Processes				
SCOTCAT Credits:	20	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>The majority of the world's population live in close proximity to the coastal zone. Coastal processes are highly dynamic and sensitive to external drivers, including long-term climate change and anthropogenic activities. Understanding these systems is important for developing appropriate coastal management strategies. Coasts (and coastal processes) therefore represent an excellent opportunity to study the interactions between humans and their physical environment.</p> <p>The module aims to enhance students' understanding of environment-shaping processes and to offer advanced field-based training in the coastal environment. Including practical classes and an obligatory, reasonably priced, weekend field excursion, it encourages students to think about the ways in which process knowledge can inform coastal management.</p>				
Programme module type:	Optional for all degrees involving Geography, and - by arrangement - Environmental Geoscience			
Pre-requisite(s):	Entry to Honours in Geography or Sustainable Development.	Anti-requisite(s):	GG3067	
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures.			
	Scheduled learning: 30 hours		Guided independent study: 170 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 60%, Practical Examinations = 0%, Coursework = 40%			
	As used by St Andrews: 2-hour Written Examination = 60%, Coursework = 40%			
Module Co-ordinator:	Dr W E N Austin			
Lecturer(s)/Tutor(s):	Dr W E N Austin			

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GG3301 Special Topic for Joint or Major Honours in Geography (Junior Honours)				
SCOTCAT Credits:	10	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Availability restrictions:	Entry to a Joint or Major Honours programme in Geography.			
Planned timetable:	To be arranged.			
This module is designed to allow Joint or Major 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.				
Programme module type:	Compulsory for Joint Honours Geography Optional for all 'Geography with' degrees			
Learning and teaching methods and delivery:	Weekly contact: To be arranged.			
	Scheduled learning: 23 hours		Guided independent study: 77 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr C C B Wilson			
Lecturer(s)/Tutor(s):	Various			

GG3302 Special Topic for Honours in Geography (Senior Honours)				
SCOTCAT Credits:	10	SCQF Level 9	Semester:	1
Academic year:	2013/4			
Availability restrictions:	Entry to a Joint or Major Honours programme in Geography, or Single Honours Geography.			
Planned timetable:	To be arranged.			
This module is designed to allow 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.				
Programme module type:	Optional for Joint Honours Geography, all 'Geography with' degrees and Single Honours students also taking ID4001 or ID4002.			
Required for:	Single Honours Geography students also taking ID4001 or ID4002			
Learning and teaching methods and delivery:	Weekly contact: To be arranged.			
	Scheduled learning: 23 hours		Guided independent study: 77 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr C C B Wilson			
Lecturer(s)/Tutor(s):	Various			

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GG4201 Advanced Debates in Geography				
SCOTCAT Credits:	10	SCQF Level 10	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for Single Honours Geography and all 'Geography with' degrees			
Pre-requisite(s):	GG3201			
Learning and teaching methods and delivery:	Weekly contact: Introductory lecture and weekly 2-hour seminars.			
	Scheduled learning: 22 hours		Guided independent study: 78 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 100%, Practical Examinations = 0%, Coursework = 0%			
	As used by St Andrews: 2-hour Written Examination = 100%			
Module Co-ordinator:	Dr D W Clayton			
Lecturer(s)/Tutor(s):	Team taught			

GG4221 Review Essay in Geography				
SCOTCAT Credits:	20	SCQF Level 10	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography			
Pre-requisite(s):	Passes in one of GG3201, GG32,2, GG3203	Anti-requisite(s):	GE4019	
Learning and teaching methods and delivery:	Weekly contact: Introductory lecture and seminar followed by one-to-one supervision.			
	Scheduled learning: 7 hours		Guided independent study: 193 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Prof C K Ballantyne			
Lecturer(s)/Tutor(s):	Team taught			

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GG4222 Geographies of Difference: Advanced Qualitative Analysis				
SCOTCAT Credits:	20	SCQF Level 10	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography			
Pre-requisite(s):	Passes in one of GG3201, GG3202, GG3203			
Learning and teaching methods and delivery:	Weekly contact: 2 seminars and 2 practical classes.			
	Scheduled learning: 20 hours		Guided independent study: 180 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr K McKee			
Lecturer(s)/Tutor(s):	Team taught			

GG4223 Geographies of Inequality: Advanced Quantitative Analysis				
SCOTCAT Credits:	20	SCQF Level 10	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography			
Pre-requisite(s):	Passes in one of GG3201, GG3202, GG3203			
Learning and teaching methods and delivery:	Weekly contact: Lectures, tutorials and practical classes.			
	Scheduled learning: 22 hours		Guided independent study: 178 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 13%, Coursework = 87%			
	As used by St Andrews: Practical Examination = 13%, Coursework = 87%			
Module Co-ordinator:	Prof S Fotheringham			
Lecturer(s)/Tutor(s):	Team taught			

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GG4224 Advanced Topics in Physical Geography				
SCOTCAT Credits:	20	SCQF Level 10	Semester:	1
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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.</p>				
Programme module type:	Optional for all degrees involving Geography			
Pre-requisite(s):	Passes in one of GG3201, GG3202, GG3203			
Learning and teaching methods and delivery:	Weekly contact: 2-hour lectures weekly and 1 x 1-day field class.			
	Scheduled learning: 32 hours		Guided independent study: 168 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Module Co-ordinator:	Dr R J S Wilson			
Lecturer(s)/Tutor(s):	Dr R J S Wilson, Dr V Rinterknecht, Dr M D Singer, Prof A Werritty			

GG4297 Joint Honours Research Dissertation in Geography				
SCOTCAT Credits:	30	SCQF Level 10	Semester:	2
Academic year:	2013/4			
Planned timetable:	To be arranged.			
<p>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. (Guidelines for printing and binding dissertations can be found at: http://www.st-andrews.ac.uk/printanddesign/dissertation/)</p>				
Programme module type:	Compulsory for Joint Honours Geography			
Pre-requisite(s):	GG3202	Anti-requisite(s):	GG4298, GE4018	
Learning and teaching methods and delivery:	Weekly contact: one-to-one supervision			
	Scheduled learning: 6 hours		Guided independent study: 294 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Dissertation = 100%			
Module Co-ordinator:	Dr S Leahy			
Lecturer(s)/Tutor(s):	Team taught			

Geography & Geosciences – Honours Level 2013/14 - August 2013

GG4298 Research Dissertation in Geography			
SCOTCAT Credits:	50	SCQF Level 10	Semester: 2
Academic year:	2013/4		
Planned timetable:	To be arranged.		
<p>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. (Guidelines for printing and binding dissertations can be found at: http://www.st-andrews.ac.uk/printanddesign/dissertation/)</p>			
Programme module type:	Compulsory for Single Honours Geography, all 'Geography with' degrees		
Pre-requisite(s):	GG3201 or GG3203	Anti-requisite(s):	GG4297, GE4018
Learning and teaching methods and delivery:	Weekly contact: one-to-one supervision		
	Scheduled learning: 12 hours	Guided independent study: 488 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%		
	As used by St Andrews: Dissertation and Conference paper = 100%		
Module Co-ordinator:	Dr S Leahy		
Lecturer(s)/Tutor(s):	Team taught		

Geography & Geosciences Honours Level - 2013/14 - August 2013

GG4301 Advanced Study for Joint or Major Honours in Geography			
SCOTCAT Credits:	10	SCQF Level 10	Semester: 1
Academic year:	2013/4		
Planned timetable:	To be arranged.		
<p>This module is designed to allow Joint or Major 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).</p>			
Programme module type:	Optional for all degrees involving Geography except Single Honours		
Pre-requisite(s):	Entry to a Joint or Major Honours programme in Geography, and normally a pass in one of GG3201, GG3202, GG3203		
Learning and teaching methods and delivery:	Weekly contact: To be arranged.		
	Scheduled learning: 23 hours	Guided independent study: 77 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%		
	As used by St Andrews: Coursework = 100%		
Module Co-ordinator:	Dr C C B Wilson		
Lecturer(s)/Tutor(s):	Various		

Sustainable Geography (SG) modules

SG3235 Science, Society and Natural Resource Management			
SCOTCAT Credits:	20	SCQF Level 9	Semester: 1
Academic year:	2013/4		
Planned timetable:	To be arranged.		
<p>This module examines the role of natural science in understanding the relationship between people and their environment. Much environmental management relies on 'evidence-based' decision-making, perhaps giving the impression that this evidence provides all the answers. This module illustrates how the 'answers' provided by natural science often depend on the interests of the questioner, and explores conflict and debate over issues of natural resource conservation and restoration between scientific, policy and lobby groups. Using a range of Scottish and international case studies – peatlands, woodlands, climate change, and heritage values – the module examines how scientific research is used and translated into practice.</p>			
Programme module type:	Optional for all degrees involving Geography or Sustainable Development		
Learning and teaching methods and delivery:	Weekly contact: 1 lecture and 1 seminar.		
	Scheduled learning: 26 hours	Guided independent study: 174 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 60%, Practical Examinations = 0%, Coursework = 40%		
	As used by St Andrews: 2-hour Written Examination = 60%, Coursework = 40%		
Module Co-ordinator:	Dr A Davies		
Lecturer(s)/Tutor(s):	Dr A Davies		