

School of Geography & Geosciences

Earth & Environmental Sciences (ES) modules

ES1001 Planet Earth			
SCOTCAT Credits:	20	SCQF Level 7	Semester: 1
Planned timetable:	12.00 noon - 1.00 pm Mon - Fri; 2.00 pm - 4.00 pm Thu and Fri		
This module provides a foundation into the study of Earth and environmental sciences. The key elements of the planet will be introduced. The bulk structure of the solid Earth (and the other planets of our solar system), and the dynamic hydrosphere and atmosphere will be covered from planetary to atomistic scales. Practical and transferable skills will be developed in tutorials and laboratory exercises which include the identification of minerals and rocks both in hand specimen and using microscopes. Fieldwork will be introduced as two half-day excursions. University-level study skills associated with this module include working in groups, oral and written presentations, advanced use of the University's internet and library facilities for data acquisition, and critically assessing scientific data and reports.			
Programme module type:	Compulsory for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Sciences		
Anti-requisite(s):	GG1011	Required for:	ES2001
Learning and teaching methods and delivery:	Weekly contact: 5 lectures, tutorials and skills sessions, and 1 x 2-hour practical (x 11 weeks); 7-hours fieldwork in total.		
	Scheduled learning: 84 hours	Guided independent study: 116 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 30%, Coursework = 20%		
	As used by St Andrews: 2-hour Written Examination = 50%, 2-hour Practical Examination = 30%, Coursework = 20% Re-Assessment: Coursework 20%, 2-hour Examination = 80%		
Module Co-ordinator:	Dr V Rinterknecht		
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff		

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ES1002 Earth Resources and Environment				
SCOTCAT Credits:	20	SCQF Level 7	Semester:	2
Planned timetable:	12.00 noon - 1.00 pm Mon - Fri; 2.00 pm - 4.00 pm Thu and Fri			
This module builds on the understanding of planet Earth gained in ES1001, with an underlying theme of the Earth's resources and environment. The processes in action at different tectonic settings (volcanism, metamorphism etc) and the natural hazards induced by these processes leads into Earth resources (metals, hydrocarbons, energy and more) and the applied nature of Earth Sciences in problem-solving resource and environmental issues. Key skills for Earth and environment scientists are developed and the module includes a 4-day residential field excursion to the northeast of Scotland around Easter.				
Programme module type:	Compulsory for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Sciences			
Pre-requisite(s):	Normally ES1001	Anti-requisite(s):	GG1012	
Required for:	ES2001			
Learning and teaching methods and delivery:	Weekly contact: 5 lectures, tutorials and 1 x 2-hour practical (x 11 weeks), plus 40 hours of fieldwork over the semester.			
	Scheduled learning: 117 hours		Guided independent study: 83 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 25%, Coursework = 25%			
	As used by St Andrews: 2-hour Written Examination = 50%, 2-hour Practical Examination = 30%, Coursework = 20% Re-Assessment: Coursework 20%, 2-hour Examination = 80%			
Module Co-ordinator:	Dr V Rinterknecht			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES1801 Field Geology Summer School				
SCOTCAT Credits:	24	SCQF Level 7	Semester:	2
Availability restrictions:	Available only to University of California students.			
Planned timetable:	Mon-Thu, variable hours. Fri dedicated to personal study			
This module aims to introduce students to Earth Science in the context of Scottish Geology over a six--week course. Scotland is the ideal natural laboratory for this; it offers classic exposures of a variety of rock types relevant to key periods throughout the three billion-years of Earth History. The taught content of the module includes lectures, practical classes and fieldtrips. Assessment comprises of: exams (multiple choice/short answer questions, an illustrated essay), field notebook presentation, group oral presentations.				
Programme module type:	Summer module for University of California students only.			
Pre-requisite(s):	Attendance at a University of California College.			
Learning and teaching methods and delivery:	Weekly contact: Fieldwork, lectures, practical classes full-time over 6 weeks.			
	Scheduled learning: 157 hours		Guided independent study: 83 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%			
	As used by St Andrews: 2-hour Written Examination = 30%, 2-hour Mid-term Examination = 20%, Coursework = 50%			
Module Co-ordinator:	Dr J Chambers			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

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ES2001 Dynamic Earth: The Earth System				
SCOTCAT Credits:	30	SCQF Level 8	Semester:	1
Planned timetable:	10.00 am - 11.00 am Mon - Fri; 2.00 pm - 5.00 pm Tue			
<p>This module reflects an up-to-date approach to understanding of the behaviour of the solid Earth and its interaction with the atmosphere and biosphere and beyond. It will provide detailed training in some of the processes acting at or near the Earth's surface (for example the dynamics of erosional processes). The evolution of the planet as a whole (including the evolution of life) from magma oceans in the early Earth to the present day will be covered in detail. Practical and theoretical training in geophysical methods for probing the near surface of the Earth will be provided.</p>				
Programme module type:	Compulsory for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Sciences			
Pre-requisite(s):	ES1001 and ES1002 or equivalent	Required for:	ES2002, ES2003	
Learning and teaching methods and delivery:	Weekly contact: 5 lectures and 1 x 3-hour laboratory per week, and occasional tutorials; 16 hours fieldwork			
	Scheduled learning: 112 hours		Guided independent study: 188 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 30%, Coursework = 20%			
	As used by St Andrews: 2-hour Written Examination = 50%, 3-hour Practical Examination = 30%, Coursework = 20% Re-Assessment: Coursework 20%, 2-hour Examination = 80%			
Module Co-ordinator:	Dr V Rinterknecht			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

ES2002 Dynamic Earth: Magma, Minerals and Metamorphism				
SCOTCAT Credits:	30	SCQF Level 8	Semester:	2
Planned timetable:	10.00 am - 11.00 am Mon, Wed, Fri; 2.00 pm - 5.00 pm Tue			
<p>This module focuses on the geology and geochemistry of the solid Earth and high temperature processes in the Earth's interior. The mineral building blocks of the Earth will be covered in detail, as well as volcanic and metamorphic processes and geodynamics. A key component of this course is the residential field course to central Spain around the time of the Easter vacation, where independent field mapping will be introduced. Undergraduates on the BSc Geology degree must take ES2002, and are strongly encouraged also to take ES2003.</p>				
Programme module type:	Optional for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Sciences			
Pre-requisite(s):	Normally ES2001	Anti-requisite(s):	GS2012	
Learning and teaching methods and delivery:	Weekly contact: 5 lectures and 1 x 3-hour laboratory per week, and occasional tutorials; 16 hours fieldwork			
	Scheduled learning: 81 hours		Guided independent study: 219 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 20%, Coursework = 30%			
	As used by St Andrews: 2-hour Written Examination = 50%, 2-hour Practical Examination = 20%, Coursework = 30% Re-Assessment: Coursework 20%, 2-hour Examination = 80%			
Module Co-ordinator:	Dr V Rinterknecht			
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff			

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ES2003 Dynamic Earth: Earth Surface Processes			
SCOTCAT Credits:	30	SCQF Level 8	Semester: 2
Planned timetable:	10.00 am - 11.00 am Tue, Thu; practical 2.00 pm - 5.00 pm Mon		
<p>This module focuses on the low temperature processes that occur in the outer envelopes of the Earth, including land-atmosphere interactions, glacial processes, tectonic geomorphology, geomicrobiology and oceanography. Relationships between physical, chemical and biological processes occurring along Earth's surface, and their impact on climate, will be explored using case studies. A key component of this course will be fieldwork to sites of environmental interest developing field skills in water/sediment sampling and analysis, and unravelling contaminant flow-patterns.</p>			
Programme module type:	Optional for BSc Geology, Environmental Earth Science, joint degrees with Biology and Chemistry, and MGeol Earth Sciences		
Pre-requisite(s):	ES2001		
Learning and teaching methods and delivery:	Weekly contact: Weekly skills practical classes, tutorials and 80 hours fieldwork.		
	Scheduled learning: 96 hours	Guided independent study: 204 hours	
Assessment pattern:	<p>As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%</p>		
	<p>As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 20% Re-Assessment: Coursework 20%, 2-hour Examination = 80%</p>		
Module Co-ordinator:	Dr V Rinterknecht		
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff		

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ES2004 Practical and Field Skills for Earth Sciences (Direct Entrants)			
SCOTCAT Credits:	30	SCQF Level 8	Semester: Whole Year
Availability restrictions:	Available only to students who have been accepted for direct 2nd year entry to an Earth Science degree programme.		
Planned timetable:	12.00 noon - 1.00 pm Mon - Fri; practical 2.00 pm - 4.00 pm Thu or Fri		
<p>This module is only available to students who have been accepted for direct 2nd year entry to an Earth Science degree programme. It provides basic practical and fieldwork skills that are not taught at secondary school and which characterise University-taught, accredited Earth Science programmes. Students will take part in level 1 practical and field-based exercises, and then apply these skills to the level 2 teaching programme. The students will also attend those aspects of the lecture programme that are not covered in A-level or Higher Geology curricula. The learning in this module will supplement and complement the ES2001, 2002 & 2003 teaching.</p>			
Programme module type:	Compulsory for Direct entrants to Second Year Geology		
Pre-requisite(s):	Direct Second Year acceptance to BSc Geology, BSc Environmental Earth Science or MGeol Earth Science Degrees		
Co-requisite(s):	Normally ES2001, ES2002 and ES2003	Anti-requisite(s):	ES1001, ES1002
Learning and teaching methods and delivery:	Weekly contact: Weekly lectures, practical classes, and fieldwork. Generally 5 hours per week lecture/lab time plus associated field classes.		
	Scheduled learning: 190 hours	Guided independent study: 110 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 0%, Practical Examinations = 50%, Coursework = 50%		
	As used by St Andrews: Coursework = 100% (made up of Group Work and 2 Field Excursions = 50%, Practical Examinations = 50%) Re-Assessment: Coursework = 100%		
Module Co-ordinator:	Dr V Rinterknecht		
Lecturer(s)/Tutor(s):	Earth and Environmental Sciences staff		

Geography (GG) modules

GG1001 Geography: Understanding our Changing World			
SCOTCAT Credits:	20	SCQF Level 7	Semester: 1
Planned timetable:	11.00 am		
<p>As the global population speeds past 7 billion, mounting evidence about resource depletion and climate change, and global economic inequality and social injustice, suggests that we are now living in the “Anthropocene” – an era in which human activity has, for the first time, become the dominant driver of environmental processes, and is causing unprecedented global change. The module shows how Geography, a discipline that draws on traditions across the social and natural sciences and the humanities, is uniquely placed to understand our changing world. Its combination of lectures, tutorials, laboratory sessions in spatial data analysis is relevant to students across the University.</p>			
Programme module type:	Either GG1001 or GG1002 is compulsory for all Single Honours, Joint Honours and 'with' Degrees in Geography		
Required for:	GG2011		
Learning and teaching methods and delivery:	Weekly contact: 3 lectures (x 11 weeks) + 6 x 1-hour skills/feedback sessions, 2 x 2-hour practical classes, 4 x 1-hour tutorials, and 1 x 8-hour field class during the semester.		
	Scheduled learning: 55 hours	Guided independent study: 145 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% Re-Assessment: 2-hour Written Examination = 100%		
Module Co-ordinator:	Dr M B Sothern		
Lecturer(s)/Tutor(s):	Team taught		

GG1002 A World in Crisis?				
SCOTCAT Credits:	20	SCQF Level 7	Semester:	2
Planned timetable:	11.00 am			
Contemporary global problems such as pollution, biodiversity loss and population growth are critical issues for the planet's future and demonstrate the interdependence of social and environmental systems. This module unpacks the complexity of these challenges by analyzing different manifestations of 'a world in crisis' as questions of geography – shaped by geographic processes operating at a range of scales (from the global to the local). The module thus explores how Geography works as a 'world discipline' that is equipped to examine global problems from a range of human, environmental and physical geography perspectives. Teaching comprises a mix of lecture learning and project work on selected global problems.				
Programme module type:	Either GG1001 or GG1002 is compulsory for all Single Honours, Joint Honours and 'with' Degrees in Geography			
Required for:	GG2011			
Learning and teaching methods and delivery:	Weekly contact: 3 lectures (x 11 weeks) + 6 x 1-hour skills/feedback sessions, 3 x 2-hour practical classes, 5 x 1-hour tutorials, and 1 x 4-hour field class during the semester.			
	Scheduled learning: 57 hours		Guided independent study: 143 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% Re-Assessment: 2-hour Written Examination = 100%			
Module Co-ordinator:	Dr M B Sothern			
Lecturer(s)/Tutor(s):	Team taught			

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GG2011 Geographical Processes and Change				
SCOTCAT Credits:	30	SCQF Level 8	Semester:	1
Planned timetable:	9.00 am Mon - Fri, 2.00 pm - 6.00 pm Mon			
This module examines some fundamental processes in human and physical geography. The physical geography component of the module considers the operation of a range of atmospheric, hydrological and geomorphological processes. Topics include hydrometeorological processes, weathering, slope processes, fluvial processes, glacial processes and periglacial processes. The human geography component of the module explores the extraordinary character of the modern world from a range of geographical perspectives. Topics include the economic, historical, political and social geography of capitalism, imperialism, urbanisation and globalisation.				
Programme module type:	Compulsory for all Single Honours, Joint Honours and 'with' Degrees in Geography			
Pre-requisite(s):	GG1001 or GG1002	Required for:	GG2012	
Learning and teaching methods and delivery:	Weekly contact: 4 lectures (x 11 weeks) + 4 x 1-hour skills/feedback sessions, 2 x 2-hour seminars, 3 x 1-hour tutorials, 2 x 2-hour practical classes and 1 x 8-hour field class during the semester.			
	Scheduled learning: 67 hours		Guided independent study: 233 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 40%, Practical Examinations = 15%, Coursework = 45%			
	As used by St Andrews: 2-hour Written Examination = 40%, Practical Examination = 15%, Coursework = 45%			
Module Co-ordinator:	Dr D Reuschke			
Lecturer(s)/Tutor(s):	Team taught			

GG2012 Processes, Perspectives and Ideas in Geography				
SCOTCAT Credits:	30	SCQF Level 8	Semester:	2
Planned timetable:	9.00 am Mon - Fri, 2.00 pm - 6.00 pm Mon			
The first part of the module extends the understanding of the physical and human world developed in GG2011 and explores the contemporary relevance of geography, using case studies of environmental problems and social inequalities in the developed world. The second part of the module then takes a holistic view of geography by examining some enduring themes which have fascinated geographers for centuries, before illustrating the potential for an integrated understanding of the world through a detailed case study of one world region (e.g. the Himalayas).				
Programme module type:	Compulsory for all Single Honours, Joint Honours and 'with' Degrees in Geography			
Pre-requisite(s):	GG2011			
Learning and teaching methods and delivery:	Weekly contact: 3-4 lectures (x10 weeks) + 4 x 1-hour skills/feedback sessions, 1 x 2-hour practical, 2 x 1-hour seminars during the semester.			
	Scheduled learning: 42 hours		Guided independent study: 258 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 Reuschke			
Lecturer(s)/Tutor(s):	Team taught			

Sustainable Development (SD) modules

SD1001 Sustainable Development: Priorities and Pathways				
SCOTCAT Credits:	20	SCQF Level 7	Semester:	1
Planned timetable:	9.00 am Mon, Tue, Thu, Fri			
Sustainable development offers a framework to identify global priorities and to explore alternative pathways by which we may recognise environmental limits and strive for social justice, in order to leave a better world for future generations. This module takes an interdisciplinary approach to critique diverse interpretations of sustainable development and to discuss its application at local, national and global levels. The module is taught collaboratively by staff from across the University (e.g. Biology, Divinity, Geography and Geosciences, Modern History, Social Anthropology and Estates). Students will explore themes such as the history and frameworks of sustainable development; biodiversity conservation; international development and culture; and institutional sustainable development strategies. Cross-cutting themes will be identified and discussed and linkages will be developed across the module.				
Programme module type:	Either SD1001 or SD1003 is compulsory for Sustainable Development			
Learning and teaching methods and delivery:	Weekly contact: 3 lectures and 1 seminar (x 11 weeks), 5 x 1-hour tutorials, and 1 x 1-hour essay seminar during the semester.			
	Scheduled learning: 50 hours		Guided independent study: 150 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% Re-Assessment: 2-hour Written Examination = 100%			
Module Co-ordinator:	Dr R White			
Lecturer(s)/Tutor(s):	Team taught			

SD1003 Sustainable Development: Towards Alternative Futures			
SCOTCAT Credits:	20	SCQF Level 7	Semester: 2
Planned timetable:	9.00 am Mon, Tue, Thu, Fri		
<p>Sustainable development offers an approach to envisage alternative futures through the theoretical development of different paradigms and the practical application of such theories. This module takes an interdisciplinary approach to different perspectives of sustainable development and to discuss its application at local, national and global levels. The module is taught collaboratively by staff from across the University (e.g. Art History, Biology, Chemistry, Economics and Finance, Geography and Geosciences, International Relations, Management, Mathematics and Statistics and Medicine). It builds on some of the material from SD1001 but also can be taken as a stand-alone module. Students will explore themes such as climate change and responses; sound science, knowledge and learning for sustainable development; responding to the freshwater crisis; environmental economics; and governance for sustainable development. Cross-cutting themes will be identified and discussed and linkages will be developed across the module.</p>			
Programme module type:	Either SD1001 or SD1003 is compulsory for Sustainable Development		
Anti-requisite(s):	SD1002		
Learning and teaching methods and delivery:	Weekly contact: 3 lectures and 1 seminar (x 11 weeks), 5 x 1-hour tutorials, 1 x 1-hour essay seminars during the semester.		
	Scheduled learning: 50 hours	Guided independent study: 150 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% Re-Assessment: 2-hour Written Examination = 100%		
Module Co-ordinator:	Dr R M White		
Lecturer(s)/Tutor(s):	Team taught		

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SD2001 Sustainable Development: Ecological and Environmental Aspects			
SCOTCAT Credits:	30	SCQF Level 8	Semester: 1
Planned timetable:	1.00 pm Mon, Tue, Fri (lectures); 10.00 am and 11.00 am Wed, 10 am Thu (seminars/tutorials)		
<p>This module takes students through a range of ecological and environmental issues associated with sustainable development. This interdisciplinary module is taught collaboratively by staff from the Schools of Biology, Chemistry, and Geography & Geosciences. The module explores five main themes:</p> <p>Part A -ecosystem functions and services- provides a general introduction to key concepts, including: biodiversity, ecosystems, and the role of environmental cycles.</p> <p>Part B -the anthropogenic effects on ecosystem functions and services- explores the human impacts on natural systems, including issues of habitat change, global warming, agriculture, commercial and industrial impacts.</p> <p>Part C -technology and the environment- considers how advances in technology might play a crucial role in moving towards sustainability, and the potential impacts of technology, both positive and negative (focusing energy supply and use, and also geo-engineering).</p> <p>Part D -conservation and management - covers issues including species and habitat protection, protected area design, and community participation.</p> <p>Part E – environmental monitoring and assessment – considers the supporting evidence base required for sustainability. Techniques are explored through case studies at local and global levels.</p> <p>The module covers a wide range of theory and knowledge, and provides you with ideas and material from various disciplines. You will be assessed by an essay, which will enhance your understanding of a particular field and the constraints to achieving sustainable development. Essay topics will be supported by tutorial sessions. The seminar series offers an opportunity for peer learning and presentation by exploring case studies of a range of relevant topics and offering time for discussion.. There will be a fieldtrip to a coastal location.</p>			
Programme module type:	Compulsory for Sustainable Development		
Pre-requisite(s):	SD1001 or SD1003		
Learning and teaching methods and delivery:	Weekly contact: 3 lectures (x 11 weeks), 4 x 1-hour seminars, 5 x 1-hour tutorials, 2 x 1-hour debriefing sessions, 2 x 6-hour fieldtrips during the semester.		
	Scheduled learning: 56 hours	Guided independent study: 244 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 30%, Practical Examinations = 20%, Coursework = 50%		
	As used by St Andrews: 3-hour Written Examination = 50%, Coursework = 50% Re-Assessment: 3-hour Written Examination = 100%		
Module Co-ordinator:	Dr T A Stojanovic		
Lecturer(s)/Tutor(s):	Team taught		

SD2002 Sustainable Development: Social and Economic Aspects				
SCOTCAT Credits:	30	SCQF Level 8	Semester:	2
Planned timetable:	1.00 pm (lectures); 10.00 am and 11.00 am Wed, 10.00 am Thu (seminars/tutorials)			
<p>SD2002 is designed to explore social and economic aspects of sustainability and of development.</p> <p>Part A questions the assumptions regarding sustainability and development. We consider some of the values attached to sustainability and the seemingly conflicting nature of capitalism and sustainable development. We will explore how underpinning philosophies are linked to sustainability and development, and debate their merit.</p> <p>Part B investigates the development, cultures, and social justice aspects of sustainable development. Anthropological approaches to sustainability and development uncover hidden aspects and provide additional critical perspectives. We will examine cultural interpretations of sustainability from through case studies that demonstrate how sustainability interfaces with livelihoods. Lectures will question the idea of one agreed, Western definition of sustainability and of development.</p> <p>Part C examines markets and institutions. We begin this section by looking at an iconic institution here in St Andrews, The Links, and how they implement sustainable practices in golf course management. We will accompany this section with a field trip to The Links to see first-hand what goes on there. We will also learn about organisations and management for SD and the corporation is considered as a key organisational unit in the modern economy. The concepts of ethical investment, SD reporting, and organisational change are critical in changing the culture of capitalism as well as providing information to assist you with your social accounting exercise. We move on to practical development decisions by looking at the use of Strategic Environmental Assessment and Environmental Impact Assessment in the UK. We will also explore the contribution of planning to sustainability and environmentally sound development.</p> <p>Finally, in Part D we will develop our quantitative analysis skills, by learning how statistics and quantitative analysis can augment and enhance our understanding and evidence of change. These skills will provide a foundation for future methods-based modules at the junior-honours and honours level. Through lab work, we will explore how data and data analysis can provide new and interesting insights into the problems we study.</p>				
Programme module type:	Compulsory for Sustainable Development			
Pre-requisite(s):	SD2001			
Learning and teaching methods and delivery:	Weekly contact: 38 lectures (3 lectures x 11 weeks plus 5 extra lectures); 1-hour seminar (x 4 weeks); 1-hour tutorial (x 4 weeks); (2-hours practicals (x 2 weeks); and 1 x 6-hours fieldtrip			
	Scheduled learning: 56 hours		Guided independent study: 244 hours	
Assessment pattern:	As defined by QAA: Written Examinations = 50%, Practical Examinations = 20%, Coursework = 30%			
	As used by St Andrews: 3-hour Written Examination = 50%, Coursework = 50% Re-Assessment: 3-hour Written Examination = 100%			
Module Co-ordinator:	Dr J Long			
Lecturer(s)/Tutor(s):	Team taught			