School of Geography & Geosciences

Earth & Environmental Sciences (ES) modules

**ES1001 Planet Earth**

<table>
<thead>
<tr>
<th>SCOTCAT Credits:</th>
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<tbody>
<tr>
<td>SCQF Level:</td>
<td>7</td>
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<tr>
<td>Semester:</td>
<td>1</td>
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</table>

**Academic year:** 2016/7 & 2017/8

**Planned timetable:** 9.00 am 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 pattern:** 2-hour Written Examination = 80%, Coursework = 20%, No Re-Assessment if Coursework mark is <4

**Module Co-ordinator:** Dr S Mikhail

**Lecturer(s)/Tutor(s):** Earth and Environmental Sciences staff
## ES1002 Earth Resources and Environment

<table>
<thead>
<tr>
<th>SCOTCAT Credits:</th>
<th>20</th>
<th>SCQF Level: 7</th>
<th>Semester: 2</th>
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**Academic year:** 2016/7 & 2017/8  

**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 and energy) 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 pattern:**  
2-hour Written Examination = 80%, Coursework = 20%, No Re-Assessment if Coursework mark is <4

**Module Co-ordinator:** Dr M SInger

**Lecturer(s)/Tutor(s):** Earth and Environmental Sciences staff
This module aims to introduce students to Earth Science in the context of Scottish Geology over a five-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 component 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.

<table>
<thead>
<tr>
<th>Programme module type:</th>
<th>Summer module for non-graduating students only.</th>
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</thead>
<tbody>
<tr>
<td>Pre-requisite(s):</td>
<td>GPA of 3.0 or above (or equivalent)</td>
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<tr>
<td>Learning and teaching methods and delivery:</td>
<td>Weekly contact: Fieldwork, lectures, practical classes full-time over 5 weeks.</td>
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<tr>
<td></td>
<td>Scheduled learning: 157 hours Guided independent study: 83 hours</td>
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<tr>
<td>Assessment pattern:</td>
<td>As defined by QAA: Written Examinations = 40%, Practical Examinations = 0%, Coursework = 60%</td>
</tr>
<tr>
<td></td>
<td>As used by St Andrews: MCQ Test = 5%, 2-hour Mid-term Examination = 15%, 2-hour Final Examination = 20%, Coursework = 60%</td>
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<td>Re-Assessment pattern:</td>
<td>2-hour Written Examination = 80%, Coursework = 20%, No Re-Assessment if Coursework mark is &lt;4</td>
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<tr>
<td>Module Co-ordinator:</td>
<td>Dr W McCarthy</td>
</tr>
<tr>
<td>Lecturer(s)/Tutor(s):</td>
<td>Earth and Environmental Sciences staff</td>
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</table>
ES2001 Dynamic Earth: The Earth System

SCOTCAT Credits: 30  SCQF Level 8  Semester: 1

Academic year: 2016/7 & 2017/8

Planned timetable: 10.00 am - 11.00 am Mon - Fri; 2.00 pm - 5.00 pm Tue

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.

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 pattern: 2-hour Written Examination = 80%, Coursework = 20%, No Re-Assessment if Coursework mark is <4

Module Co-ordinator: Dr T Raub

Lecturer(s)/Tutor(s): Earth and Environmental Sciences staff
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.

### Programme module type:
Compulsory for BSc Geology, BSc Environmental Earth Sciences and 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:** 3 lectures and 1 x 3-hour laboratory per week and occasional tutorials; 54 hours fieldwork.

<table>
<thead>
<tr>
<th>Scheduled learning:</th>
<th>116 hours</th>
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<tbody>
<tr>
<td>Guided independent study:</td>
<td>184 hours</td>
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</table>

### 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 pattern:
2-hour Written Examination = 80%, Coursework = 20%, No Re-Assessment if Coursework mark is <4

### Module Co-ordinator:
Dr W McCarthy

### Lecturer(s)/Tutor(s):
Earth and Environmental Sciences staff
### ES2003 Dynamic Earth: Earth Surface Processes

<table>
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<tr>
<th>SCOTCAT Credits:</th>
<th>30</th>
<th>SCQF Level: 8</th>
<th>Semester:</th>
<th>2</th>
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<tr>
<td>Academic year:</td>
<td>2016/7 &amp; 2017/8</td>
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<tr>
<td>Planned timetable:</td>
<td>Lecture: 10.00 am - 11.00 am Tue, Thu and 2.00 pm - 3.00 pm Mon. Practical 3.00 pm - 6.00 pm Mon</td>
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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.

<table>
<thead>
<tr>
<th>Programme module type:</th>
<th>Compulsory for BSc Geology, BSc Environmental Earth Science and MGeol Earth Sciences.</th>
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</thead>
<tbody>
<tr>
<td>Pre-requisite(s):</td>
<td>ES2001</td>
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<tr>
<td>Learning and teaching methods and delivery:</td>
<td>Weekly contact: 3 x 1-hour lectures and 1 x 3-hour laboratory per week; 12 hours of tutorials and 16 hours fieldwork over the semester.</td>
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<tr>
<td>Scheduled learning:</td>
<td>94 hours</td>
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<td>Guided independent study:</td>
<td>206 hours</td>
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<td>Assessment pattern:</td>
<td>As defined by QAA: Written Examinations = 50%, Practical Examinations = 0%, Coursework = 50%</td>
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<tr>
<td></td>
<td>As used by St Andrews: 2-hour Written Examination = 50%, Coursework = 50%</td>
</tr>
<tr>
<td>Re-Assessment pattern:</td>
<td>2-hour Written Examination = 80%, Coursework = 20%, No Re-Assessment if Coursework mark is &lt;4</td>
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<td>Module Co-ordinator:</td>
<td>Dr N Allison</td>
</tr>
<tr>
<td>Lecturer(s)/Tutor(s):</td>
<td>Earth and Environmental Sciences staff</td>
</tr>
<tr>
<td>SCOTCAT Credits:</td>
<td>30</td>
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<tr>
<td>Academic year:</td>
<td>2016/7 &amp; 2017/8</td>
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<tr>
<td>Availability restrictions:</td>
<td>Available only to students who have been accepted for direct 2nd year entry to an Earth Science degree programme.</td>
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<tr>
<td>Planned timetable:</td>
<td>12.00 noon - 1.00 pm Mon - Fri; practical 2.00 pm - 4.00 pm Thu or Fri</td>
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</table>

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.

<table>
<thead>
<tr>
<th>Programme module type:</th>
<th>Compulsory for Direct entrants to Second Year Geology</th>
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<tbody>
<tr>
<td>Pre-requisite(s):</td>
<td>Direct Second Year acceptance to BSc Geology, BSc Environmental Earth Science or MGeol Earth Science Degrees</td>
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<tr>
<td>Anti-requisite(s):</td>
<td>ES1001, ES1002</td>
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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 pattern:

- 2-hour Written Examination = 100%

Module Co-ordinator:

- Dr S Mikhail

Lecturer(s)/Tutor(s):

- Earth and Environmental Sciences staff
### GG1001 Welcome to the Anthropocene: Society, Population, Environment

<table>
<thead>
<tr>
<th>SCOTCAT Credits:</th>
<th>20</th>
<th>SCQF Level 7</th>
<th>Semester:</th>
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<tr>
<td>Academic year:</td>
<td>2016/7 &amp; 2017/8</td>
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<tr>
<td>Planned timetable:</td>
<td>Lectures: 11.00 am Tue, Wed, Thu and tutorials: 11.00 am Mon and Fri</td>
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As the global population speeds past 7 billion, mounting evidence about resource depletion and climate change, and global economic inequality and social injustice, suggests current human development is unsustainable and 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 knowledge that spans the social and natural sciences and the humanities, is uniquely placed to understand our changing world. Its combination of lectures and tutorials are relevant to students across the University.

**Programme module type:** Compulsory for Single Honours, Joint Honours and 'with' Degrees in Geography and for Sustainable Development

**Required for:** GG1002 and GG2011, SD1000 and SD2001

**Learning and teaching methods and delivery:**

- **Weekly contact:** 3 lectures (x 11 weeks) + 3 x 2-hour laboratory, 5 x 1-hour tutorials, and 1 x 4-hour fieldtrip during the semester.

- **Scheduled learning:** 48 hours  
  **Guided independent study:** 154 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 pattern:**  
2-hour Written Examination = 100%

**Module Co-ordinator:** Dr M B Sothern

**Lecturer(s)/Tutor(s):** Team taught

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### GG1002 A World in Crisis?

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<tr>
<th>SCOTCAT Credits:</th>
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<th>SCQF Level 7</th>
<th>Semester:</th>
<th>2</th>
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<td>Academic year:</td>
<td>2016/7 &amp; 2017/8</td>
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<tr>
<td>Planned timetable:</td>
<td>Lectures: 11.00 am Tue, Wed, Thu and tutorials: 11.00 am Mon and Fri</td>
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</table>

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:** Compulsory for all Single Honours, Joint Honours and 'with' Degrees in Geography

**Pre-requisite(s):** GG1001

**Required for:** GG2011

**Learning and teaching methods and delivery:**

- **Weekly contact:** 3 lectures (x 11 weeks) 5 x 1-hour tutorials, and 1 x 8-hour field class during the semester.

- **Scheduled learning:** 46 hours  
  **Guided independent study:** 154 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 pattern:**  
2-hour Written Examination = 100%

**Module Co-ordinator:** Dr M B Sothern

**Lecturer(s)/Tutor(s):** Team taught
Geography is the study of the world around us, and how it is changing and has changed. The module encourages students to think ‘geographically’ about particular physical and human dimensions of global change: environmental, atmospheric, hydrological, geomorphological and palaeoecological change; and demographic and economic change. These geographical themes will be framed by a discussion of the nature and evolution of geography as a discipline, and how thinking ‘geographically’ involves understanding the operation of and interactions between complex bio-physical and social processes. The module explores how the geographer views such processes through the conceptual lenses of time, space, context, scale and variation, and using field, laboratory and model-based methods. Classroom instruction is complemented by lab work which develops key skills in cartography and Geographic Information Science.

Programme module type: Compulsory for all Single Honours, Joint Honours and 'with' Degrees in Geography
Pre-requisite(s): GG1001 and/or GG1002 (2015/6) GG1002 and GG1002 (2016/7)
Required for: GG2012
Learning and teaching methods and delivery:
- Weekly contact: 4 lectures (x 11 weeks), 4 x 1 hour tutorials, 1 x 8 hours fieldtrip, 2 x 2 hour practicals during the semester.
- Scheduled learning: 60 hours
- Guided independent study: 242 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%

Re-Assessment pattern: 2-hour Written Examination = 100%
Module Co-ordinator: Dr D McCollum
Lecturer(s)/Tutor(s): Team taught
An important contemporary focus within Geography is the reconstruction of physical and human environments, and the study of processes of environmental and social change in order to understand present-day patterns and explore future scenarios. Geographers from all parts of the discipline share a concern with how and why different peoples, places and bio-physical and social processes operated in both time and space. The different lecture blocks in the module on environmental management, ecological change, health inequalities, and cultural difference - explore these folds between time and space. The module prepares students for entry to Honours Geography, and, through a residential fieldtrip, broadens their geographic interests and skills in physical and human geography.

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: 4 lectures (x 11 weeks) + 4 x 1-hour tutorials, 2 x 3-hour practicals, 1 x 16-hour fieldtrip during the semester. |
| Scheduled learning: 70 hours | Guided independent study: 226 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 pattern: 2-hour Written Examination = 100%

Module Co-ordinator: Dr D McCollum

Lecturer(s)/Tutor(s): Team taught
**SD1000 What is Sustainable Development?**

<table>
<thead>
<tr>
<th>SCOTCAT Credits:</th>
<th>20</th>
<th>SCQF Level 7</th>
<th>Semester:</th>
<th>2</th>
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<td>Academic year:</td>
<td>2016/7 &amp; 2017/8</td>
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<td>Planned timetable:</td>
<td>9.00 am Mon - Fri</td>
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"Sustainable Development" is a term that is very widely used internationally, nationally and locally by academics, policy-makers, businesses and NGOs, but what does it really mean? This module is designed to provide an introductory overview to underpinning ideas, such as social justice, human well-being, inter-generational equity and environmental stewardship, which are embedded within notions of sustainable development as key areas of debate in defining and interpreting the concept. The module also provides an account of how sustainable development has emerged as such a powerful idea, and examines different disciplinary perspectives on what issues sustainable development should be trying to address, as well as exploring the value of an interdisciplinary approach in studying and facilitating sustainable development.

**Programme module type:** Compulsory for Sustainable Development

**Pre-requisite(s):** GG1001

**Learning and teaching methods and delivery:**
- **Weekly contact:** 3 x 1-hour lectures (x 11 weeks) 1-hour tutorials (x 5 weeks), 1 x 8-hour fieldwork and 2 further contact hours in total
- **Scheduled learning:** 48 hours **Guided independent study:** 154 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 pattern:**
- 2-hour Written Examination = 100%

**Module Co-ordinator:** Dr A Brown

**Lecturer(s)/Tutor(s):** Team taught
<table>
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<tr>
<th>SCOTCAT Credits:</th>
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<th>SCQF Level: 8</th>
<th>Semester:</th>
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<tbody>
<tr>
<td>Academic year:</td>
<td>2016/7 &amp; 2017/8</td>
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<tr>
<td>Planned timetable:</td>
<td>1.00 pm Mon, Tue, Fri (lectures), 9.00 am and 10.00 am Wed, 10.00 am Thu (seminars/tutorials)</td>
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Having considered in Level 1 why the concept of sustainable development (SD) is important and key concerns and areas of debate in understanding meanings of SD, Level 2 of the programme progresses to introduce aspects of how SD might be encouraged and facilitated. This module considers broad conceptual approaches to implementing SD. It includes more traditional frameworks based on governance and regulation (‘command and control’) as well as examining the role and importance of other approaches, including environmental economics and the use of market-based mechanisms, technological innovation, self-regulation, changing individual lifestyles, education and community-based enablement, and the principles of conservation science. The module also addresses the extent to which these different approaches are independent or can be used together to bring about change for SD.

**Programme module type:** Compulsory for Sustainable Development

**Pre-requisite(s):** GG1001 and SD1000

**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:** 2-hour Written Examination = 50%, Coursework = 50%

**Re-Assessment pattern:** 2-hour Written Examination = 100%

**Module Co-ordinator:** Dr T A Stojanovic

**Lecturer(s)/Tutor(s):** Team taught
<table>
<thead>
<tr>
<th>SD2002 Sustainable Development: Tools for Action</th>
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</thead>
<tbody>
<tr>
<td><strong>SCOTCAT Credits:</strong> 30</td>
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<tr>
<td><strong>Academic year:</strong> 2016/7 &amp; 2017/8</td>
</tr>
<tr>
<td><strong>Planned timetable:</strong> 1.00 pm Mon, Tue, Thu, Fri (lectures), 10.00 am and 11.00 am Tue &amp; Wed, 9.00 am &amp; 10.00 am Thu (seminars/tutorials), 10.00 am Wed &amp; Thu (labs)</td>
</tr>
</tbody>
</table>

It is not often clear how ideas from sustainable development catalysed real-world change. The SD2002 module builds upon core themes from SD2001 and looks at 'how' different agents, such as governments, corporations, and individuals enact change. Fundamental to this module is the development of methodologies used to gather evidence and study the problems faced in SD. The module will challenge students to develop critical analysis skills; both qualitative and quantitative. A highlighting feature of the SD2002 module is a field-trip to the Links at St Andrews, to learn about sustainability initiatives in the golf industry.

| **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 8 weeks); 1-hour tutorial (x 4 weeks); 2-hours practicals (x 3 weeks); and 1 x 4-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: 2-hour Written Examination = 50%, Coursework = 50%

**Re-Assessment pattern:** 2-hour Written Examination = 100%

**Module Co-ordinator:** Dr J Long

**Lecturer(s)/Tutor(s):** Team taught