School of Natural Sciences

Geography

Undergraduate Course Handbook

2019-20
### Academic Year Structure 2019/20

**Key Dates:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
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<tbody>
<tr>
<td>Freshers’/Orientation Week</td>
<td>Monday 2 September to Friday 6 September 2019</td>
</tr>
<tr>
<td>Semester 1 Teaching begins</td>
<td>Monday 9 September 2019</td>
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<tr>
<td>Study/Reading Week</td>
<td>Monday 21 October to Friday 25 October 2019</td>
</tr>
<tr>
<td>Semester 1 Teaching ends</td>
<td>Friday 29 November 2019</td>
</tr>
<tr>
<td>Semester 1 Revision Week</td>
<td>Monday 2 December to Friday 6 December 2019</td>
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<tr>
<td>Semester 1 Assessment Week</td>
<td>see below</td>
</tr>
<tr>
<td>Scholarship Examinations</td>
<td>Monday 6 January to 10 January 2020 ¹</td>
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<tr>
<td>Semester 2 Teaching begins</td>
<td>Monday 20 January 2020</td>
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<tr>
<td>Study/Reading Week</td>
<td>Monday 2 March to Friday 6 March 2020</td>
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<tr>
<td>Semester 2 Teaching ends</td>
<td>Friday 10 April 2019</td>
</tr>
<tr>
<td>Semester 2 Revision Week</td>
<td>Monday 13 April to Friday 17 April 2020</td>
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<tr>
<td>Semester 2 Assessment Week</td>
<td>see below</td>
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<tr>
<td>Trinity week</td>
<td>Monday 20 April to Friday 24 May 2020</td>
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**Formal Assessment weeks ²:**

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<tr>
<th>Component</th>
<th>Dates</th>
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<tr>
<td>Semester 1 examinations</td>
<td>Saturday 7 December to Friday 13 December 2019</td>
</tr>
<tr>
<td>Semester 2 examinations</td>
<td>Monday 27 April to Saturday 2 May 2019</td>
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</tbody>
</table>

¹ It may be necessary to hold some Foundation Scholarship examinations in the preceding week.

² Please note that the dates of formal assessment weeks may extend to begin earlier or run later – examination schedules may not be finalised at this time.

**IMPORTANT NOTE:** The details contained in this booklet are subject to change. In the event of any conflict or inconsistency between the General Regulations published in the University Calendar and information contained in this course handbook, the provisions of the General Regulations will prevail.
TABLE OF CONTENTS

1. Welcome to Geography at Trinity College Dublin ......................................................... 4
   Learning Outcomes........................................................................................................... 5
   Graduate Outcomes.......................................................................................................... 5

2. The Undergraduate Degree Programmes ...................................................................... 6
   Foundation Scholarship Examination................................................................................ 7
   Erasmus/Study Abroad......................................................................................................... 7

3. Course Structure and Module Outlines ...................................................................... 8
   Semesters and Module Teaching Blocks............................................................................... 8
   Programme Overview Academic Year 2019/20.................................................................. 9

Junior Fresh (Year 1) ................................................................................................... 10
   GSU11003 The Anthropocene (10 ECTS credits) ............................................................ 10
   GGU11926 Human Geography: Society and Space (10 ECTS credits)............................ 11
   GSU11004 Spaceship Earth: An Introduction to Earth System Science............................ 14

Senior Fresh (Year 2) ................................................................................................... 14
   GGU22923 Geography Student Seminars (10 ECTS credits).......................................... 14
   GGU22925 Human Geography: Changing Worlds (10 ECTS credits)......................... 15
   GSU22005 Sedimentary Processes & Environments (10 ECTS credits) ......................... 16

Junior Sophister (Year 3) ........................................................................................... 17
   Compulsory Geography Modules (NS & TSM students)................................................... 17
   GGU33928 Advanced Research Methods in Geography I (5 ECTS credits) .................... 17
   GGU33956 History and Philosophy of Geography (5 ECTS credits)............................... 18

Optional Geography Modules.......................................................................................... 19
   GGU33915 Globalisation and Geopolitics (5 ECTS credits)............................................. 19
   GGU33925 Advanced Research Methods in Geography II (5 ECTS credits).................... 20
   GGU33930 Environmental Governance 1 (10 ECTS credits).......................................... 21
   GGU33933 Geographical Information: Data & Tools (5 ECTS credits)............................ 22
   GGU33934 Practical Physical Geography (5 ECTS credits)............................................ 22
   GGU33937 Urban Structure and Regeneration (5 ECTS credits).................................... 23
   GGU33939 Exploring the Sustainable City (5ECTS credits)............................................ 24
   GGU33953 Deserts of Our Solar System (5 ECTS credits)............................................ 25

Senior Sophister (Year 4) .............................................................................................. 26
   GGU44930 Geography Dissertation (20 ECTS credits)................................................... 26

Optional Geography Modules.......................................................................................... 28
   GGU34978 Glacial Geomorphology (10 ECTS credits).................................................... 28
   GGU44926 Environmental Governance 2 (10 ECTS credits)......................................... 29
   GGU44936 Globalisation & African Development (5 ECTS credits)............................... 30
   GGU44961 Understanding Environmental Change (10 ECTS credits)......................... 31
   GGU44962 Spatial Analysis using GIS (5 ECTS credits)................................................ 32
GGU44966 Historical Geography 1 (5 ECTS credits) ................................................................. 33
GGU44967 Historical Geography 2 (5 ECTS credits) ................................................................. 34
GGU44969 Urban Geography: Cities, space and culture (10 ECTS credits) ............................... 35
GGU44971 Stormy Geomorphology (5 ECTS credits) ................................................................. 36

4. Examinations and Assessment ..................................................................................... 38
   Examinations ................................................................................................................. 38
   Coursework .................................................................................................................... 38
   Submission of assessed work in the Sophister years ....................................................... 39
   Policy regarding absence from in-class assessments ...................................................... 39
   Deadlines and penalties for late submission .................................................................. 40
   Students registered with the Disability Office .............................................................. 40
   Important note regarding plagiarism ........................................................................... 40
   Guidelines on referencing ............................................................................................. 40
   Marking criteria ............................................................................................................ 43

5. Geography Staff and Contact Information ................................................................. 45
   Academic Staff .............................................................................................................. 45
   Additional Staff ............................................................................................................. 46

6. Facilities, Conduct and Safety ................................................................................... 47
   Laboratories .................................................................................................................. 47
   Safety ............................................................................................................................ 47
   Emergencies .................................................................................................................. 48
   Project Work .................................................................................................................. 48
   Laboratory Safety ........................................................................................................ 48
   Fieldwork Safety .......................................................................................................... 49
   Fire Safety ..................................................................................................................... 49
   First Aid ......................................................................................................................... 49
   Security .......................................................................................................................... 50

7. The Freeman Library .................................................................................................. 50

8. Beyond a Geography Degree ...................................................................................... 51
   Careers for Geography Graduates ................................................................................ 51
   Research Opportunities ............................................................................................... 51
1. Welcome from the Head of Geography

Geography matters! In contemporary society it is clear that geographical knowledge and experience are more important than ever; helping us know and understand a dynamic and rapidly changing world. Geography at Trinity College Dublin is a place of intensive and extensive geographical scholarship in Ireland. We teach and research across the discipline from Nigeria to New Zealand, from development theory to coastal modelling, and from climate change to the workings of the social economy and we aim to challenge students intellectually, to foster and maintain world-class research and teaching in a supportive and collegial atmosphere. Geography is an integrative subject with an international outlook and openness to interdisciplinary collaboration. This handbook summarises the Geography undergraduate teaching programme in the School of Natural Sciences, and the regulations that are intended to ensure its effective implementation. Also included is a brief introduction to the staff in Geography and an indication of where a Geography degree might lead. Please check the Geography website and associated websites (including that of the School of Natural Sciences) for any updates on the content provided below. I hope that you find the information useful, and that you enjoy your time in Geography.

Geography is part of the School of Natural Sciences (other disciplines in the School are Botany, Geology and Zoology). The School also houses two research centres: The Centre for the Environment and the Centre for Biodiversity and Sustainable Development which was launched by Sir David Attenborough in 2009. Natural Sciences is one of the largest schools in the Faculty of Engineering, Mathematics and Science and conducts research, and delivers teaching, on all aspects of the natural world, from the formation of the earth, the behaviour of the environment, the evolution and ecology of its organisms and its interactions with human society. We are engaged with solving some of the major challenges facing human society through our teaching, research and partnership with industry and policy development both nationally and globally. We currently accommodate ca. 40 academic staff, 25 support staff, 20 postdoctoral research fellows and over 100 graduate research students. We have an annual research income in excess of €4 million and produce an average of 150 publications per year. The School delivers eight undergraduate and three taught masters degree programmes in Development Practice, Biodiversity and Conservation and Environmental Science.

The Geography staff, and the programmes we deliver, aim to provide high quality education through research-led teaching. Many Geography staff members are national and world leaders in their respective fields. Our research takes us far beyond the lecture theatre to international conferences, global editorial committees and policy-making think tanks, and our work is published in many formats including journals, books and through internet portals. Much of our research addresses major challenges for contemporary society including international development, environmental change and globalisation, but practically all issues we face have a geographical dimension, whether it is global climate change or local flooding in a river catchment.

The current economic situation clearly demonstrates that global flows of capital have direct implications for local communities in terms of employment and development. Geography, with its attention to space and place, to nature and society and to the past, present and future is perhaps the only academic discipline fully equipped to engage with the diverse nature of today's challenges. We hope that through our teaching programmes Geography graduates will be well equipped to become forward-thinking citizens of today and tomorrow.

Dr Pádraig Carmody, Associate Professor and Head of Geography
Learning Outcomes

On successful completion of your Geography degree, you will be able to:

- Discuss Geographical theories, concepts, methods and processes.
- Demonstrate a detailed knowledge of one or more specialised areas in Geography by, for example, being able to identify, analyse and resolve problems. Some of this geographical knowledge will be at the current boundaries of research.
- Apply this knowledge and comprehension in a manner that indicates a thorough and informed approach to your work, and have competences typically demonstrated through devising and sustaining arguments and formulating and solving problems.
- Use a number of specialised skills and tools, such as spatial data analysis and statistical techniques, which you can use selectively to address complex problems, or to conduct closely guided research.
- Devise data gathering experiments, and to gather and interpret relevant data to inform independent judgements which include reflection on relevant social, scientific or ethical issues.
- Communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- Undertake further study with a high degree of autonomy.

Graduate Attributes

The Trinity Graduate Attributes represent the qualities, skills and behaviours that you will have the opportunity to develop as a Trinity student over your entire university experience, in other words, not only in the classroom, but also through engagement in co- and extra-curricular activities (such as summer work placements, internships, or volunteering).

The four Trinity Graduate Attributes are:

- To Think Independently
- To Act Responsibly
- To Develop Continuously
- To Communicate Effectively

Why are the Graduate Attributes important?

The Trinity Graduate Attributes will enhance your personal, professional and intellectual development. They will also help to prepare you for lifelong learning and for the challenges of living and working in an increasingly complex and changing world.

The Graduate Attributes will enhance your employability. Whilst your degree remains fundamental, also being able to demonstrate these Graduate Attributes will help you to differentiate yourself as they encapsulate the kinds of transversal skills and abilities, which employers are looking for.

How will I develop these Graduate Attributes?

Many of the Graduate Attributes are ‘slow learned’, in other words, you will develop them over the four or five years of your programme of study.

They are embedded in the curriculum and in assessments, for example, through undertaking independent research for your final year project, giving presentations and engaging in group work.

You will also develop them through the co-curricular and extra-curricular activities. If you help to run a club or society you will be improving your leadership skills, or if you play a sport you are building your communication and team-work skills.
2. The Undergraduate Degree Programmes

Geography at Trinity may be studied via one of five routes:


2. A special combined degree (TR029) is also run in Political Science & Geography. During the first three years students take both subjects on an equal basis and then choose at the end of their Junior Sophister year whether to continue studying both (joint honours) or to concentrate on either Political Science or Geography (single honours) in their final Senior Sophister year. Please note that joint honours PSG students cannot undertake a Geography dissertation. Additional details on this programme are available in the Political Science and Geography handbook. [https://www.tcd.ie/Political_Science/undergraduate/political-science-geography/handbook/](https://www.tcd.ie/Political_Science/undergraduate/political-science-geography/handbook/)

3. With its second intake in 2019/20 - Geography and Geoscience (TR062), with the ability to specialise in Geography in the final two years. (Please see the TR062 handbook for details of this programme). [https://www.tcd.ie/Science/TR062/](https://www.tcd.ie/Science/TR062/)

4. The Single Honours Moderatorship in Natural Science (NS TR071), concentrating solely on Geography in the final two years. This programme is no longer admitting new students.

5. The Two Subject Moderatorship (TSM) in which Geography is studied with a second subject for three or four years. This programme is no longer admitting new students.
   a) **TSM Pattern A**: you take Geography and your second subject in fourth year.
   b) **TSM Pattern B**: you specialise in either Geography or your second subject in fourth year.

Pattern B students will undertake an undergraduate dissertation.

In certain circumstances, a special TSM pathway (Pattern C) is available to students who spend their third year abroad on ERASMUS exchange to study Geography before returning for their fourth year of Geography in Trinity. Further details of these exchange possibilities are available from the Study Abroad Co-ordinator for Geography (see ERASMUS/Study abroad section below).

The choice of TSM pathway is made towards the end of the third year of study (Junior Sophister).

**Joint Honours, TSM and Political Science & Geography students** may apply to transfer to the Single Honours Geography Moderatorship in Natural Science (NS) before starting their third year. To be eligible for transfer, the student must pass their Senior Fresh examination in June and obtain at least a second class (second division) (II.2) grade in Geography. Transfer applications must be made to the Admissions Office via the student’s Tutor.

**Foundation Scholarship Examination in Geography**

The Scholarship exam for Geography in TSM* and Geography and Political Science consists of two examination papers. For Paper 1, candidates are examined in their course work up to the end of the Hilary Term of their Junior Freshman year together with such additional reading as may be required by the Head of Geography. Paper 2 is a general essay paper. Paper 1 will be a 3 hour exam accounting for 66.66 per cent of the subject mark. Paper 2 will be a 1.5 hour exam, accounting for 33.33 per cent of the subject’s mark." The Foundation Scholarship examination papers in Geography are constructed in such a way as to test the depth and breadth of the candidates’ overall understanding of the discipline.

The first two-hour paper is specifically designed to allow candidates to demonstrate a superior appreciation of the course-based material of their Junior Freshman programme with an additional list of advanced readings being provided to candidates by the lecturers involved.

In the second two-hour paper candidates will have an opportunity to demonstrate their ability to synthesise knowledge and appraise, critically, the broader issues, thus allowing them to integrate
disparate elements in the intellectual discourses within the discipline of Geography. In this regard, candidates are required to write two essays selected from an unseen list of broadly-themed topics within Geography which will change from year to year.

For further information, regulations and guidelines see:

2. College Calendar Part 1 (Foundation and Non-Foundation Scholarships)

or contact Geography’s Foundation Scholarship Coordinator, Dr Philip Lawton lawtonp@tcd.ie

*From 2021 onwards, this will be applied to Joint Honors program.

**Erasmus/Study Abroad**

Students may study abroad in their Junior Sophister year.

All students wishing to study abroad must agree a Teaching Contract with Geography’s Study Abroad Co-ordinator, Dr Mark Hennessy – mhnnessy@tcd.ie.

Students to be nominated for an Erasmus exchange and mobility grant will be selected on the basis of their overall Junior Fresh grade and a 600-word statement relating to their suitability for an exchange, to be submitted to the Study Abroad Coordinator by the last day of Michaelmas term in their Senior Fresh year.

For details of the Department’s exchange partnerships see the Geography website - Erasmus.

**Modules and ECTS for Erasmus/Study Abroad students**

Ensure you have completed your module choice form correctly. Students who are away for one semester only, must ensure that their module information and ECTS are correct for Trinity modules at the usual time.

1. For a full year abroad, email the Geography Office to ensure you are exempted from any compulsory modules.
2. For a student away for either Semester 1 or Semester 2 only, check your my.tcd.ie student account. Contact the Geography Office if your module codes or ECTS for your home semester are incorrect.

This information generates your end of year Coursework and Examination requirements.

**Regulations for dissertation proposal - Erasmus/Study Abroad students**

As part of their Geography degree, Natural Science students or Two Subject Moderatorship Pattern B and Pattern C students continuing to take Geography in their Senior Sophister Year are required to undertake an undergraduate dissertation (GGU44930).

The preparation and dissertation proposal are usually undertaken in GGU33928 (Advanced Research Methods 1), but it is not possible for TCD students on an Erasmus programme abroad in their Junior Sophister Year to undertake this module. However, the dissertation is still a requirement for their Senior Sophister mark so they are still required to prepare a dissertation proposal and to have that approved by their potential supervisor in consultation with the coordinator for the Advanced Research Methods module Dr. Pádraig Carmody – carmodyp@tcd.ie

Prior to departure on their Erasmus year the students should contact the GGU33928 coordinator to arrange for submission of the dissertation proposal while they are away. The dissertation proposal is prepared in portions and submitted during the course of GGU33928. TCD Erasmus students should submit these portions for feedback at the same time as others taking the Advanced Research Methods.
Once the final proposal has been prepared and accepted the student will then proceed to prepare the dissertation.
3. Course Structure and Module Outlines

The Geography programmes at Trinity have a modular structure that combines compulsory and optional core elements, thereby giving you more module choice as you progress with your studies.

Within specified limits, you may also opt to take elective modules during your Senior Fresh and Junior Sophister years for student entering in 2019/20, and Sophister years for student in other streams.

Every element of the teaching programme at Trinity is associated with a credit value.

The credits used in this book are equivalent to the European Credit Transfer and Accumulation System (ECTS). This is a student-centred system that is based upon the workload required to achieve the programme objectives. One year of study comprises work totalling 60 credits (equivalent to 60 ECTS).

++ One ECTS credit is equivalent to approximately 25 hours of student input ++

Note: Student input does not correlate with the number of contact hours (i.e. how long you will spend in lectures, seminars and practical sessions). Instead it measures YOUR input and includes not only your attendance at lectures etc. but also the time taken for completing assessment tasks and individual study including assigned reading, revision and examinations. Working outside of class is a vital element of your studies at Trinity and to meet the credit requirements it will sometimes be necessary to work outside of term time or the regular (5-day) working week. Module descriptions include illustrative breakdowns of input time to assist you in planning your work. These breakdowns are guides and precise input hours will inevitably vary between individuals.

Semesters and Module Teaching Blocks
Teaching is delivered in two semesters with week seven of each semester a “Study Week”. Taught modules valued at 10 ECTS normally run for the entire length of a semester while 5 ECTS modules are commonly half a semester in length.

Check the module descriptions for timetable information and guidance on required student input.

Students who register after the beginning of a Geography module (e.g. by transferring in after the start of the module) may miss examinations and course work. If this happens the student will be expected to take missed parts of the module at the Supplemental Session.

Please note that the “Study Week” is not a holiday! You are expected to undertake academic work during this period in each semester.

Most modules will have online material including notes, reading lists and assessment details. You should check the Geography Website and Blackboard regularly for updates and information relating to your modules.

General enquiries not covered within this booklet or on the website should be directed to the relevant course coordinator.

For Joint Honours (JH) and TSM, Dr Philip Lawton - lawtonp@tcd.ie
For Geography and Geoscience, Dr Robin Edwards – robin.edwards@tcd.ie
For Natural Science Geography, Prof. Peter Coxon – pcoxon@tcd.ie
For Political Science and Geography (PSG), Dr Patrick Bresnihan - pbresnihan@tcd.ie (until October 4th 2019: after that date Prof. Anna Davies – daviesa@tcd.ie).
<table>
<thead>
<tr>
<th>Year</th>
<th>Modules</th>
<th>ECTS</th>
<th>Course</th>
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<tbody>
<tr>
<td><strong>Year 1 (JF)</strong></td>
<td><strong>Compulsory Modules</strong>&lt;br&gt;GSU11003 The Anthropocene (S2) 10 JH &amp; PSG</td>
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<td></td>
<td>GSU11004 Spaceship Earth: An Introduction to Earth System Science (S1) 10 JH &amp; PSG</td>
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<td></td>
<td>GGU11926 Human Geography: Society &amp; Space (S1&amp;2) 10 JH &amp; PSG</td>
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<td><strong>Year 2 (SF)</strong></td>
<td><strong>Compulsory Modules</strong>&lt;br&gt;GGU22923 Geography Student Seminars (S1&amp;2) 10 TSM &amp; PSG</td>
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<td></td>
<td>GGU22005 Sedimentary Processes &amp; Environments (S2) 10 TSM &amp; PSG</td>
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<td>GGU22925 Human Geography: Changing Worlds (S1) 10 TSM &amp; PSG</td>
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<tr>
<td><strong>Year 3 (JS)</strong></td>
<td><strong>Compulsory Modules</strong>&lt;br&gt;GGU33928 Advanced Research Methods in Geography I (S2) 5 NS &amp; TSM, PSG*</td>
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<td></td>
<td>GGU33956 History and Philosophy of Geography (S1) 5 NS &amp; TSM (PSG Optional)</td>
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<td><strong>Optional Modules</strong>&lt;br&gt;GGU33915 Globalisation and Geopolitics (S2) 5 NS, TSM &amp; PSG</td>
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<td></td>
<td>GGU33925 Advanced Research Methods in Geography II (S1) 5 NS &amp; TSM, PSG</td>
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<td>GGU33930 Environmental Governance I (S2) 10 NS, TSM &amp; PSG</td>
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<td>GGU33933 Geographical Information: Data &amp; Tools (S2) 5 NS, TSM &amp; PSG</td>
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<td>GGU33934 Practical Physical Geography (S1) 5 NS, TSM &amp; PSG</td>
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<td>GGU33937 Urban Structure and Regeneration (S1) 5 NS, TSM &amp; PSG</td>
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<td>GGU33939 Exploring the Sustainable City (S1) 5 NS, TSM &amp; PSG</td>
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<td>GGU33953 Deserts of Our Solar System (S1) 5 NS, TSM &amp; PSG</td>
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<td>GGU34978 Glacial Geomorphology (S1) 10 NS, TSM &amp; PSG</td>
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<td>GGU34979 Human Origins (S2) 10 NS, TSM &amp; PSG</td>
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<td><strong>Year 4 (SS)</strong></td>
<td><strong>Compulsory Modules</strong>&lt;br&gt;GGU44930 Geography Dissertation (S1 &amp; 2) 20 NS, TSM B &amp; C, PSG*</td>
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<td></td>
<td>GGU34978 Periglacial Geomorphology (S1) 10 NS, TSM &amp; PSG</td>
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<td>GGU34979 Quaternary Oceans &amp; Climate (S2) 10 NS, TSM &amp; PSG</td>
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<td>GGU44926 Environmental Governance II (S2) 10 NS, TSM &amp; PSG</td>
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<td>GGU44936 Globalisation &amp; African Development (S2) 5 NS, TSM &amp; PSG</td>
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<td>GGU44961 Understanding Environmental Change (S1) 10 NS, TSM &amp; PSG</td>
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<td>GGU44962 Spatial Analysis using GIS (S2) 5 NS, TSM &amp; PSG</td>
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<td>GGU44966 Historical Geography I (S1) 5 NS, TSM &amp; PSG</td>
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<td>GGU44967 Historical Geography II (S1) 5 NS, TSM &amp; PSG</td>
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<td>GGU44969 Urban Geography: Cities, space and culture (S1) 10 NS, TSM &amp; PSG</td>
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<td>GGU44971 Stormy Geomorphology (S1) 10 NS, TSM &amp; PSG</td>
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* Compulsory for Political Science and Geography (PSG) students taking Geography as a single subject in Year 4.

**NB:** This programme may be subject to change.

S1 and S2 indicates the Semester a module is provisionally timetabled for.
Junior Fresh (Year 1)
JH & PSG Students must take all three introductory modules in Geography:

- GSU11003 - The Anthropocene
- GSU11004 - Spaceship Earth: An Introduction to Earth System Science
- GGU11926 - Human Geography: Society & Space

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<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
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<tr>
<td>GSU11003</td>
<td>The Anthropocene</td>
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Module Co-ordinator: TBC
Type: Compulsory (TSM, PSG)

Outline: The “Anthropocene” is a term that has become widely used since Nobel Prize Laureate Paul Crutzen and Eugene Stoermer began popularising it in 2000. They argued that humans had so dramatically transformed the planet that it was time to pronounce a new geological epoch: the Anthropocene—or, “the human age.”

Whether the Anthropocene is officially accepted as the designation of a new geological epoch or not, the term has sparked debates and discussions across the natural sciences, social sciences, arts and humanities. The multi-disciplinary interest in the Anthropocene demonstrates that the term is more than simply a geological or physical phenomenon; it has complex social, cultural, political, and economic dimensions.

From plastic-filled oceans to species extinction, there is little doubt that human activities are making their mark on the planet. The challenge is to develop more critical, trans-disciplinary understandings of how this situation has arisen and how we might learn to live better on a damaged planet. This module sets out to meet this challenge by engaging ideas and perspectives from the natural sciences, social sciences, arts and humanities, students will learn to describe and understand environmental change from multiple perspectives.

Learning Outcomes: At the end of this module students are expected to be able to:
- Understand and explain the scientific and cultural significance of the Anthropocene;
- Critically engage with key debates over the Anthropocene that span the natural sciences, social sciences, arts and humanities;
- Identify the major ethical and political questions facing humanity in a time of ecological uncertainty and environmental degradation;
- Connect the Anthropocene with current events and everyday life, particularly as relates to urban sustainability.

In terms of transferable skills, students will be expected to have:
- Developed their reading skills and capacity to synthesise and build arguments through involvement in small-class seminars;
- Developed their writing skills through formal and creative writing assignments.

Assessment: This module will be assessed through 100% coursework assessment. Participation and attendance in all lectures and seminars is required.

Module Breakdown: Contact Hours (Lectures = 20 hours; Seminars = 16 hours); Additional Input (Lecture/Seminar Preparation = 80hrs; Coursework preparation = 85hrs) TOTAL = 201hrs.

Key texts:

Module Breakdown: Contact hours (22 hours).

GGU11926 Human Geography: Society & Space 10 ECTS

Module Co-ordinator: Dr Cian O’Callaghan (ocallac8@tcd.ie)

Type: Compulsory (TSM, PSG)

Outline: This module aims to provide you with an insight into what it means to “think geographically”. Through contemporary and historical examples, it will provide an understanding of the development of the discipline of Geography, its philosophical bases and methodological practices. It will introduce a number of the key elements of human geography with which be explored in greater depth in later years.

The module is divided into three sections.

Section 1 of this module will introduce the approach to “thinking geographically”. It will explain the evolution of the discipline of geography within the development of rational scientific modes of enquiry and beyond. And it will use geographical concepts to reflect on a series of contemporary events. Through the module we will be asking: how are these events geographical and how can geographical methods be used to understand them?

Section 2 will explore global urbanism and its problems. It will begin by exploring how urbanisation occurs, why urbanisation is a global phenomenon and recognise the forces underlying the growth of urban settlements. It will then use a series of use a series of thematic urban challenges to addresses how the spatial form of the urban influences and organises human life in profound ways.

Section 3 of this module critically explores the issues of governance, economy and space in the context of globalisation. The aim is to introduce students to key approaches to our understandings of global economic forces through a primary focus on economic geography, but also incorporating relevant social and cultural theories of space. In doing so, this section of the course aims to equip students with theoretical insights that help to understand the underlying reasons for spatial inequalities resulting from economic globalisation. This is supplemented with a range of case studies that illustrate the inter-relationship between global and local forces.
Learning Outcomes: On successful completion of this module students will be able to:

- Describe the evolution of the discipline with respect to its philosophical bases, the range and changing character of methodological approaches and the foci of geographical enquiry;
- Demonstrate a knowledge of contemporary approaches to the study of human geography;
- Display an ability to use an approach to "thinking geographically" to analyse current events;
- Identify how urbanisation occurs, why urbanisation is a global phenomenon and recognise the forces underlying the growth of urban settlements;
- Describe the impact of urbanisation on different parts of the world;
- Apply approaches in urban geography to analyse key urban problems and challenges.
- Explain the impact of global forces on local areas and evaluate the underlying reasons for the intense spatial inequalities which can result.

Assessment: Continuous assessment (100%).

Module Breakdown: The 10-credit module comprises 250 hours of student workload, of which only a minority comprises direct contact with staff (lectures and tutorials).

Lectures 40 hours; tutorials 4 hours; tutorial preparation 40 hours; essays and projects 86 hours; other reading 80 hours.

Key texts: In addition to material presented during lectures or in tutorials, the following texts are considered to be key reading:

Section 1


Section 2


Section 3

• Lash, S. and Urry, J.: *Economies of signs and space* (Sage, 1993)

**GSU11004 Spaceship Earth: An Introduction to Earth System Science** 10 ECTS

**Module Co-Ordinator:** Dr Robin Edwards ([robin.edwards@tcd.ie](mailto:robin.edwards@tcd.ie))

**Type:** Compulsory (TSM, PSG)

**Outline:** More than 7 billion people now inhabit the Earth and no corner of the planet is unaffected by human activity. The rise of our species has been fuelled by our ability to access planetary storehouses of energy and employ this to manipulate the environments around us. The global-scale of human impacts has led some to suggest we are entering a new era of Earth history - the Anthropocene. Dealing with the effects of environmental and climate change is one of the most significant challenge that our species faces in the 21st century.

This module provides a foundation for understanding global environmental issues by considering the Earth as an interconnected system in which matter and energy are exchanged between the Geosphere, Biosphere, Atmosphere, Hydrosphere and the Anthroposphere. It considers the life-support systems of ‘spaceship Earth’ and aims to provide a theoretical basis for evaluating the role of humans as agents of climate and environmental change.

**Learning Outcomes:** On successful completion of this module students will be able to:

• Outline the fundamental concepts of Earth Systems Science with reference to its major subsystems: Geosphere, Biosphere, Atmosphere, Hydrosphere and Anthroposphere
• Illustrate how material and energy are cycled through the Earth system
• Describe the links between biotic and abiotic systems and their role in maintaining a habitable planet
• Apply an Earth Systems approach to describe the phenomena of environmental and climate change
• Discriminate between ‘weather’ and ‘climate’ and situate concerns about current climate change in a longer-term (geological) context
• Identify how human activities modify Earth System function
• Make links between Earth Systems Science and topics covered in their chosen field of study

**Assessment Details:** 100% continuous assessment via in-course tests and assignments.
**Senior Fresh (Year 2)**

TSM & PSG Students take three 10 credit modules

- GGU22923 - Geography Student Seminars
- GSU22005 - Sedimentary Processes & Environments
- GGU22925 - Human Geography: Changing Worlds

### GGU22923 Geography Student Seminars

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**Module Co-ordinator:** Dr Mark Hennessy ([mhnnessy@tcd.ie](mailto:mhnnessy@tcd.ie))

**Type:** Compulsory (TSM & PSG)

**Outline:** This module aims to develop skills in information gathering, critical thinking, writing and oral presentation. Students will learn how to address a research topic in a group setting, carry out research, including bibliographic searches, and make written and oral presentations regarding that topic. Students will learn how to improve their work through taking advantage of group and one-to-one feedback on work-in-progress. Seminar groups will be led by members of the academic staff, research staff and research postgraduate students.

The module is divided into four, linked components:

1. Skills preparation;
2. Presentations and discussions;
3. Essay writing;
4. Essay feedback and revision.

**Learning Outcomes:** On successful completion of this module students will be able to:

- Demonstrate awareness of the standards, expectations and praxis of Geography at a university level;
- Knowledgably and critically discuss selected key concepts and ideas in Geography;
- Identify appropriate data sources and resources for Geography, including books, journals and websites, and show an appreciation of the issues involved in their use;
- Produce written work of an acceptable style and standard;
- Undertake appropriate independent preparatory work for classes, including reading and research;
- Work productively as part of a group and present their work orally to a small group of their peers.

**Assessment:** Course work (100%)

**Module Breakdown:** Contact Hours (Seminars, workshops and individual feedback = 25hrs); Additional Input (Reading, preparation and course work = 225hrs). TOTAL = 250 hrs.

**Key texts:**

GGU22925 Human Geography: Changing Worlds 10 ECTS

Module Co-ordinator: Dr Philip Lawton (lawtonp@tcd.ie)

Type: Compulsory (TSM & PSG)

Outline: This module introduces students to a number of key issues within contemporary human geography and exposes them to a range of methodological approaches and research techniques. The overarching theme of the module is the way in which historical, cultural, environmental, political and economic geographies are changing under the force of globalisation. Specific areas covered include an examination of globalisation from a historical perspective; approaches, methods and sources in historical geography; emergence of global environmentalism in a changing world; the creation of ‘third world’ and the impact of globalisation on the developing world; and political and economic aspects of globalisation.

The module will cover:

Section 1 - Approaches and methods in historical geography: This section of the module introduces the diversity of approaches and methods employed in historical geography. Historical geography has traditionally been concerned with the evolution of landscapes and patterns of areal differentiation over time. Historical geography is concerned with how regions and places have come to acquire identity and character over time. It is therefore central to the wider study of geography. Since the 1980s historical geography has been open to theoretical and methodological innovation. This section of the module will give an introduction to the more traditional and modern approaches to the use of historical methods in geographical studies.

Section 2 - Emerging Environmental Movements: Interactions between humans and the environment are of central concern for geographers. These interactions may create positive or negative outcomes (or in some cases both) across time and space and are often geopolitically motivated. This section of the Changing Worlds module will address how human geography approaches the uneven and contested relationships that exist between humans and their environments in an increasingly globalised world. Attention will focus on the way environmental problems (climate change, overfishing, pollution) are experienced and understood by different actors.

Section 3 - Geographies of development: Most of humanity lives in the so-called “developing world”. This section of the module explores how the Third World was created historically and the mechanism through which it is reproduced. Attention will also be paid to the impact of “free” market policies in the developing world.

Section 4 - Economic geographies of globalisation: This section of the module will cover issues related to contemporary economic globalisation; governance of globalisation; multi-national corporations; global finance; global financial and economic crisis; geographies of transition economies; and policy challenges in the age of globalisation.

Section 5 - Collection & analysis of geographical data: Building on the above sections, this part of the module will specifically focus on methods in geographical research and a range of techniques used in acquisition and analysis of geographical data. In doing so, it will enable students to select appropriate methods to study diverse geographical issues and to develop students’ geographical skills of numeracy, data management, manipulation, analysis, display, interpretation and explanation.

Learning Outcomes: On successful completion of this module students will be able to:

- Identify important topics and themes in contemporary human geography;
- Appraise some of the major current debates in human geography;
- Outline and contrast a range of research methods in human geography.
Assessment: Examination (60%); course work (40%)

Module Breakdown: Contact hours (Lectures and seminars = 33 hrs); Additional Input (Lecture-related reading and individual study = 130hrs; Course work preparation = 47hrs; Revision/Examination = 40 hrs). TOTAL = 250hrs.

Key texts:

Section 1

Section 2

Section 3

Section 4

Section 5
**GSU22005 Sedimentary Processes & Environments**

**Module Co-ordinator:** Dr Micha Ruhl  ([micha.ruhl@tcd.ie](mailto:micha.ruhl@tcd.ie))

**Type:** Compulsory (TSM & PSG)

**Contact Hrs:**
- Lectures 4 / week = 40 hrs
- Total student contact = 40 hrs

**Module Aims**

Develop understanding of:

- Different Earth system environments
- Processes that control and impact on the Earth system environment
- Sediment generation, transport & deposition
- The impact of environmental processes on sediment generation, transport & deposition
- How sedimentary archives can record (changes in) the Earth system and environmental processes

**Learning Outcomes**

On successful completion of this module students will be able to:

- Classify siliciclastic and carbonate sedimentary rocks
- Describe (changes in) the origin and formation of sediments and sedimentary archives and interpret these in regards to changes in physical and Earth surface processes, and changing environments
- Appraise some of the major current debates around climate and environmental change and Earth surface processes
- Illustrate how physical processes (have) shape(d) Earth’s surface, in the past, present, and future
- Infer past climatic and environmental change from physical, chemical and biological data stored in sedimentary archives
- Explain how the understanding of modern processes is fundamental to our ability to reconstruct the past and predict the future

**Method of Assessment:** 100% in course

The course-content will be assessed through in-course assessment and online module-testing.

**Module Outline**

Earth’s climate has changed on multiple temporal and spatial scales throughout its history, which significantly impacted on physical processes and environments. Information on past climatic and environmental changes are recorded in physical, chemical and biological materials stored in sedimentary archives. Sedimentary materials storing such information can be found across most of the Earth’s crust, both on land and in the oceans, and much of our understanding of Earth history comes from their examination.

**Junior Sophister (Year 3)**

All JS Geography students (NS & TSM) take **two compulsory modules** comprising a total of **10 credits**:
GGU33928 Advanced Research Methods in Geography 1
GGU33956 History & Philosophy of Geography

- **NS Students** should select a further **50 credits of optional modules** from the Geography Core Programme (see below).
  You may substitute a minimum of 5 credits, up to a maximum of 20 credits, from elective modules outside of this core programme during your sophister years.

- **TSM Students** should select a further **20 credits of optional modules** from the Geography Core Programme (see below).
  In addition, you may choose to substitute up to 10 credits for elective modules outside of this core programme.

- It is a **College requirement** that students balance their modules, in terms of numbers of ECTS, equally across both semesters in all years. If in a two subject programme the number of ECTS taken in each subject must be 15 per semester.

- **Political Science and Geography Students** should refer to their Course Handbook.

In making module selections, it is your responsibility to ensure that:

a) module timetables do not clash - you must be able to attend all components of a module;

b) you pay careful attention to the pre-requisites for modules in the Sophister years.

### Compulsory Modules (NS & TSM)

**GGU33928 Advanced Research Methods in Geography 1**

- **5 ECTS**
- **Module Co-ordinator:** Dr Pádraig Carmody ([carmodyp@tcd.ie](mailto:carmodyp@tcd.ie))
- **Type:** Compulsory (NS & TSM, also PSG students taking Geography as a single subject in Year 4)
- **Pre-requisites:** None

**Outline:** The objective of this module is to develop further the research skills of students, in order that they will be well-equipped to plan and carry out their dissertation investigation, which will start towards the end of the JS year. The module focuses on approaches to solving geographic problems, although topics such as ethics, integrity, professionalism, philosophy, research project design, and presentation skills are also covered. In addition to classes, students on this module are also expected to attend research seminars in the School, and more broadly in College, in particular (although not exclusively) those of relevance to Geography.

The assessment for this module comprises several components, including student presentations in class, short critical reviews of key research articles relating to Geography, and dissertation proposal. For dissertation preparation regulations specific to Erasmus students, see page 5.

**Learning Outcomes:** On successful completion of this module students will be able to:

- Develop a research plan for a Geography dissertation;
- Communicate geographic ideas and results effectively in written and oral form;
- Evaluate the strengths and weaknesses of complementary and competing methodological approaches and research techniques commonly used by geographers;
- Develop a basis for informed opinions about the important intellectual and methodological debates in Geography.

**Assessment:** Course work (100%)

**Module Breakdown:** Contact Hours (Lectures = 12hrs); Additional Input (Reading, including weekly assignments = 62hrs; Proposal Reading and Writing = 48 hrs; Presentations = 3 hrs). TOTAL = 125 hrs
Key Texts:

GGU33956 History and Philosophy of Geography 5 ECTS
Module Co-ordinator: Dr Mark Hennessy (mhnnessy@tcd.ie)
Type: Compulsory (NS & TSM); Optional (PSG)
Pre-requisites: None
Outline: This module presents an overview of the development of the discipline of Geography from classical Greece through to contemporary developments. Throughout the focus is on how changes in the practice of geography are related to broader social, cultural and political contexts. A number of key topics are examined in detail.

I. The classical world. 1. Hecataeus, Eratosthenes and the early Greek geographers. 2. Ptolemy, Strabo, Pliny the Elder and other geographers from the period of the Roman empire.

II. Geography in the age of Victorian exploration. The relationship between empire and geography is a key theme in this section.

III. French Geography in the late nineteenth and early twentieth century. The contrasting ideological context of the Vidalian school and the work of Élisée Recus is considered. The influence of German geographers such as Von Humboldt, Ritter and Ratzel on this tradition is also dealt with.

IV. The “Quantitative Revolution”. Developments in geography in the late 1950s, ‘60s and ‘70s are examined and are contrasted with Hartshorne’s earlier outline of the scope and methods of geography.

V. Feminism and Geography. The influence of Feminist perspectives on research and writing in geography is traced and set within the wider context of the introduction of radical and anti-systemic ideologies to the practice of geography.

VI. Postmodernism and Geography. This section explores how the philosophical, methodological and ideological innovations associated with Postmodernism have influenced the practice of geography.

Teaching on the module is by lectures and class discussions. For some classes students will carry out prescribed preparation that forms the basis of class discussion facilitated by the lecturer.

Learning Outcomes: On successful completion of this module students will be able to:
- Have gained a knowledge of how the discipline of Geography has changed from Classical times to the present;
- Have a critical awareness of how intellectual and disciplinary change is related to broader patterns of historical change in Geography;
- Know how praxis is related to social, cultural and political contexts.

Assessment: 1.5 hour examination (50%) Answer 2 Q/4; Coursework (50%)
Module Breakdown: Contact Module Co-ordinator.

Key Texts:
Optional Geography Modules

Geography offers several optional 5 and 10 credit modules that you may take providing you have the required prerequisites (where applicable).

**GGU33915 Globalisation and Geopolitics**

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**Module Co-ordinator:** Dr Pádraig Carmody (carmodyp@tcd.ie)

**Type:** Optional (NS, TSM & PSG)

**Pre-requisites:** None

**Outline:** This module examines the impacts of globalisation in both the developed and developing world and its relation to geopolitics. Particular emphasis is placed on the theories of geopolitics and globalisation and topics covered include the implications of the rise of China and its international relations in the developing world, “shadow globalisation” – human, arms and drug trafficking and resistance to these processes through social movements, amongst others.

The module will be taught through a combination of lectures, and tutorial discussions. Attendance at the tutorials is an integral part of the module. Rather than being a revision exercise, the aim of the tutorials is to elicit a broader understanding of the issues involved by drawing out the social and policy implications of the content of the lectures.

Students taking this module will be expected to have undertaken reading in depth prior to each tutorial.

**Learning Outcomes:** On successful completion of this module students will be able to:

- Analyse the relationships between economic forces, spatial development, geopolitics and the role of the state at different scales of analysis in the developed and developing worlds;
- Judge and critique different perspectives on the nature of the globalisation;
- Comprehend and critique the influence of organisations such as the International Monetary Fund, World Bank and International Non-Governmental Organisations;
- Apprehend the construction and interaction between ethnicity, conflict and terrorism; regionalisation and globalisation;
- Discuss critically the relationship between different types of globalisation “from above” and “below”;
- Critically evaluate alternatives to globalisation.

**Assessment:** 2-hour examination (50%) Answer 2Q/6; Essay (50%)

**Module Breakdown:** Contact Hours (Lectures = 18hrs; Tutorials = 3hrs); Additional Input (Tutorial preparation = 15hrs; Essay = 32hrs; Other reading = 24 hrs; Revision and Examination = 33hrs). TOTAL = 125hrs.
Key Texts:
Oliver Stunkel: *Post-Western World* (Cambridge, Polity, 2016).

**GGU33925 Advanced Research Methods in Geography 2**

**Module Co-ordinator:** Dr. Frederico Cugurullo ([cugurulf@tcd.ie](mailto:cugurulf@tcd.ie))

**Type:** Optional (NS, TSM & PSG)

**Pre-requisites:** None

**Timing:** Field courses to be arranged during the academic year.

**Outline:** These are field courses held in Ireland. Students are required to complete 5 credits of field courses from those offered. Students are required to complete a series of guided research tasks and to present the results of their work in evening seminars and as a field notebook. Students are required to work individually and in groups.

In 2018 this module will be completed as a 5-credit field course in early September.

**Learning Outcomes:** On successful completion of this module students will be able to:
- Collect primary field data to address research questions as part of a guided research exercise;
- Conduct field research in a safe manner;
- Demonstrate technical proficiency in a range of primary data collection methods
- Distinguish between observations and interpretations, and compile a field notebook recording research activities and results;
- Work collectively to collate and analyse the results of fieldwork within strict time constraints;
- Interpret the results of fieldwork and present these findings in oral and written form.

**Assessment:** Course work (100%) comprising completion of fieldwork tasks and submission of field notebooks.

**Module Breakdown:** Contact hours: 60. Additional input (Preparation, reading): 30 hours. Write-up: 35 hours. TOTAL: 125 hours

**Key Texts:** Preparatory reading will be set in advance of the field courses.
GGU33930 Environmental Governance 1 10 ECTS

Module Co-ordinator: TBC
Type: Optional (NS, TSM & PSG)
Pre-requisites: None

Outline: The “environment” emerged as a new object of concern in the 1960s. Since then, and largely through the work of citizens, scientists, environmental justice movements, and NGOs, many different environmental problems have been raised - from chemical contamination to climate change, from oil spills to plastic-filled oceans. Despite growing awareness of these many forms of environmental degradation, the political and societal response has been far from adequate. How can we explain this? One starting point is to interrogate the contested history and development of environmental politics since the 1960s. What we learn from such an approach is that there have been radically different ways of framing environmental problems, giving rise to radically different proposals on how to deal with these problems. This historically informed understanding thus invites us to consider how re-framing current environmental problems may help us to orientate society towards a more just and sustainable future.

This module will introduce students to the emergence of environmental politics as a unique field of policy-making, scientific production, and conflict since the 1960s. It will discuss key texts, writers and thinkers, whose work has been instrumental in shaping how we think about the environment, as well as how private, public and civil society actors have responded to environmental problems in recent times.

Learning Outcomes: On successful completion of this module students will be able to:

- Understand the key developments and debates within modern environmentalism over the past fifty years;
- Identify and discuss the key thinkers and texts that have shaped modern environmental thinking;
- Debate the nature and impact of different environmental policies and initiatives at local, national and global scales;
- Use the critical analytic skills developed through the module to better examine a range of sources including documentary films, government reports, academic papers, and more.

Assessment: Examination= 50% (2 hr exam); Course Work = 30% (2,000 word review essay) Class participation/reading = 20% (incl. leading weekly group discussions; reading notes).

Module Breakdown: Contact Hours (Lectures = 20 hours); Additional Input (Lecture Preparation = 60hrs; Coursework preparation = 85hrs; examination preparation = 85 hours) TOTAL = 250hrs.

Key Texts:
GGU33933 Geographical Information: Data & Tools  
5 ECTS

Module Co-ordinator: Dr Philip Lawton (lawtonp@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Note: Places on this module are limited to 30. In the case of oversubscription, places will be allocated on the basis of student performance in GSU22005 and GGU22925

Outline: This module explores how to identify, create and use geographic data and tools. The object is to teach students about how data is constructed, used, found, and manipulated by geographic researchers. The module will enable students to: interpret maps; find and evaluate data; organise, manipulate and analyse data in statistical packages and GIS; create projects and maps using GIS; identify how geographic data construction and analysis differs from typical quantitative approaches.

Learning Outcomes: On successful completion of this module students will be able to:

- Explain the concepts and theories that underpin GIS and outline their application to the real world;
- Demonstrate technical proficiency in the use of an industry standard GIS software package;
- Apply GIS technologies in problem-solving;
- Design, implement and present the results from a project that makes use of GIS technologies.

Assessment: Course work (100%)

Module Breakdown: Contact Hours (Lectures & Practicals = 20hrs); Additional Input (Reading and course assignments = 105hrs). TOTAL = 125hrs.

Key Texts:

GGU33934 Practical Physical Geography  
5 ECTS

Module Co-ordinator: Professor Peter Coxon (pcoxon@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Note: Students considering a physical geography dissertation in SS year should take this module.

Outline: This course is aimed at students who are considering a physical geography dissertation project. The student numbers will be limited. A white laboratory coat is required for this course. Sharp pencils, calculator, ruler (metric) and a protractor are also required.

- Basic map work using OS 1:50,000 series maps and GSI geological maps.
- Fluvial geomorphology from maps, simple drainage basin analysis, analysing geological and climatic controls on fluvial landscapes.
- Orientation and altitude of corrie basins.
- Basic field and laboratory methods including sediment descriptions, clast fabric, particle size analysis and loss of ignition measurements.
- Simple data handling using spreadsheets and graphics packages.

Learning Outcomes: On successful completion of this module students will be able to:

- Have gained practical experience in the use of OS maps
- Have gained a knowledge of simple surveying techniques
- Have gained a knowledge of laboratory methods in physical geography

Assessment: 100% coursework
Outline: This module introduces you to some key themes, concepts, and debates in urban geography. In particular it will focus on the concept of urban regeneration. The module first considers the historic development of urbanisation, the transition to urban-based economies, and the development of urban studies. It then focusses specifically on the urban impacts of globalisation, in particular how cities in the developed world have managed the shift from industrialism to post-industrialism. Finally, the module examines regeneration from a number of perspectives. Particular attention will be given to the circular nature of processes of urban growth and decline and how regeneration efforts include and exclude particular social groups and identities.

Learning Outcomes: On successful completion of this module students will be able to:

- Demonstrate a thorough understanding of the processes underlying changing urban economic form and the concurrent shift in the cultural life of cities
- Have a detailed knowledge of the varied character of urban regeneration policies, their function and effectiveness.
- Demonstrate a knowledge of key concepts in urban geography and be able to apply them to real world situations

Assessment: Blog post + additional component (50%) & 2-hour examination (50%) answering 2 questions from 4.

Module Breakdown: Lectures (20 hrs), Fieldtrip (2 hrs), Additional inputs (Reading, exam revision, blog post preparation – 103hrs). Total 125 hrs.

Key Texts:
GGU33939 Exploring the Sustainable City  
5 ECTS

Module Co-ordinator: Dr Federico Cugurullo (cugurulf@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: What will the city of the future look like? To what extent are our models of city-making sustainable? Is the road that we are taking leading us towards an environmental utopia in which societies will grow in balance with nature, or are we paving the way for the collapse of our civilization?

These are the key questions that will drive our exploration of the different ways through which, today, sustainable urban development is understood and practiced across the world.

In this highly interdisciplinary module, we are going to use the tools of geography to examine the most critical socio-environmental issues faced by cities (climate change, consumption, happiness, environmental degradation, etc.), and discuss both the theory and practice of urban sustainability.

Using case studies from different continents, we will explore projects for eco-cities and smart cities, and evaluate their sustainability performance. We will also draw upon urban history and political philosophy to learn how the ideal city was imagined in past, and use this knowledge to foresee what urban futures alleged smart-eco cities are shaping.

Each session will be designed to stimulate interaction and will require curiosity and imagination. This module is more than a review of how urban sustainability is understood and practiced, and you will be asked to design, present and discuss practical plans of action to sustain urban living in the 21st century and beyond.

Learning Outcomes: By the end of the course the student will be able to:

- Demonstrate knowledge of key debates relating to theories and practices of sustainable urban development
- Show understanding of the different meanings of urban sustainability across geographical spaces
- Undertake analysis of complex, incomplete or contradictory areas of knowledge in relation to contemporary urban challenges
- Critically evaluate urban agendas from a sustainability perspective
- Design and evaluate strategies for sustainable urban development.

Assessment: 2 hour examination (50%) answer 2Q/6 + coursework (50%).

Module Breakdown: Contact hours (Lectures + seminars 22 hours); Additional inputs (Lectures + seminars preparation, coursework, revision and examination). TOTAL: 125 hours.

Key Texts:
GGU33953 Deserts of our Solar System 5 ECTS

Module Co-ordinator: Dr Mary Bourke (bourkem4@tcd.ie)
Type: Optional (NS, TSM & PSG)

Pre-requisites: GGU22924 (previously offered SF Physical Geography module) or GSU22005

Outline: Planetary geomorphology is the frontier field of Physical Geography. This module explores the desert landforms of our solar system. It focuses on the arid environments of Earth and Mars. Using the latest data from NASA and ESA we will explore how landforms and geomorphic processes vary under different atmospheric, gravity and temperature regimes. You will be introduced to geomorphic features that are not found on Earth. We will investigate how geomorphologists use landforms on Earth to understand those on other solar system bodies.

Learning outcomes: On successful completion of this module students will:
- Have gained a basic knowledge of the desert geomorphology on Earth and Mars
- Understand how and why landforms vary across our solar system
- Know how field and experimental studies are used in Planetary Geomorphology
- Be familiar with the latest findings from Lander and Orbiter missions

Assessment: Continuous Assessment [100%].

Module Breakdown: Lectures (24 hrs); Reading (50 hours); assessed work (26 hrs). Exam revision (25 hours).
Total = 125 hrs.

Key Texts:
**Senior Sophister (Year 4)**

All NS, TSM Pattern B and TSM Pattern C students and Political Science and Geography students who are taking geography as a single subject in their final year must undertake an individual research project (20 credits) which would result in the production of a dissertation (see below).

**NS Students** select a further **40 credits of optional modules** from the Geography Core Programme (see below).

They may substitute a minimum of 5 credits - up to a maximum of 20 credits - for elective modules outside of this core programme if they have not already done so during Year 3.

**TSM Pattern B students** continuing with Geography, and **TSM Pattern C students** and **Political Science and Geography students** who are taking geography as a single subject in their final year, select a further **40 credits of optional modules** from the Geography Core Programme (see below). They may substitute up to a maximum of 10 credits for elective modules outside of this core programme if they have not already done so during Year 3.

**TSM Pattern A students** select **30 credits of optional modules** from the Geography Core Programme (see below).

They may substitute up to a maximum of 10 credits for elective modules outside of this core programme if they have not already done so during Year 3.

Pattern A students cannot undertake a Geography Dissertation.

In making module selections, it is your responsibility to ensure that:

a) module timetables do not clash (you must be able to attend all components of a module);

b) you pay careful attention to the pre-requisites for modules in the Sophister years.

It is a College requirement that students balance their modules, in terms of numbers of ECTS, equally across both semesters in all years. If in a two-subject programme the number of ECTS taken in each subject must be 15 per semester for Geography.

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**GGU44930 Geography Dissertation**  20 ECTS

**Module Co-ordinator:** Dr Padraig Carmody ([carmodyp@tcd.ie](mailto:carmodyp@tcd.ie))

**Type:** Compulsory (NS, TSM B & C, also PSG students taking Geography as a single subject in Year 4)

**Pre-requisites:** GGU33928

**Outline:** The dissertation is an independent study in which field work or the study of original source material is expected to play an important role.

Data can be collected in a variety of ways - such as through field sampling or survey, laboratory analysis, questionnaire surveys, interviews, content analysis, census material or archival work or some combination of these - depending on the topic chosen.
The research topic is developed as part of GGU33928 Advanced Research Methods in Geography 1. A more complete description of the dissertation, together with recommendations regarding supervisor meetings, health and safety regarding field and laboratory work etc and regulations relating to late submission etc, can be found on the Geography website – see Courses, Current Students.

For dissertation preparation regulations specific to Erasmus students, see page 5.

**Learning Outcomes:** On successful completion of this module students will be able to:

- Complete a sustained piece of individual, academic research on a chosen topic within the field of Geography, under the guidance of a member of staff;
- Explain the methodological basis employed in their research;
- Critically evaluate existing research and its implications for the topic of study;
- Demonstrate technical proficiency in the application of the selected methods and techniques of data acquisition and analysis;
- Synthesise and discuss the results with reference to relevant academic literature;
- Present a succinct and precise written report of the research that is well presented, logically structured and accurately referenced.

**Assessment:** Independent research project dissertation (100%). All students must also give a short progress report presentation to the Department in Semester 1 in order to progress to submission in Semester 2.

**Module Breakdown:** Contact Hours (Supervision = 10hrs); Additional Input (Individual research and dissertation writing = 490hrs). TOTAL = 500hrs.
Optional Geography Modules
Geography offers several optional 5 and 10 credit modules that you may take providing you have the required prerequisites (where applicable).

**GGU3475 Glacial Geomorphology** 10 ECTS credits

Module Co-ordinator: Professor Peter Coxon (pcoxon@tcd.ie)
Type: Optional (NS, TSM & PSG)
Pre-requisites: None

**Outline:** The course is an introduction to the landforms and processes of glaciation. It covers past and recent work on glacial geomorphology and concentrates on landforms and sediments and their production by glaciers. The topics covered include: history of glacial studies, physical properties of ice, ice motion, glacier systems, thermal regime, erosional processes and landforms, glacial deposition, mineral exploration in glacial terrain, engineering geology in glaciated areas, moraines and drumlins, meltwater deposition and erosion (process and form). Examples are taken from Ireland where relevant and the course outlines the need for further work in many regions of the country.

The module includes a compulsory 3-day field course Thursday- Sunday in the last weekend of study week in Semester 1. There may be two groups so you need to keep all of this time slot free. (This will be kept reasonably priced but is in addition to College fees etc.).

**Learning Outcomes:** On successful completion of this module students will be able to:

- Have gained a basic knowledge of the main elements of glaciology
- Have gained a knowledge Ireland’s glacial history
- Have gained a knowledge of modern glacial geomorphology
- Recognise the importance of the study of glacial geomorphology

**Assessment:** 2 Hour Examination (50%) Answer 2Q/5. Attendance and successful completion of a weekend field course and laboratory reports (50%).
** GGU44926 Environmental Governance 2 10 ECTS  

**Module Co-ordinator:** TBC  
**Type:** Optional (NS, TSM & PSG)  
**Pre-requisites:** GGU33930  

**Outline:** There is little disagreement that far-reaching societal, technological, political, and economic transformations are required if we are to avoid the worst effects of global, anthropogenic environmental change. What form these transformations should take and who should take responsibility for them are, however, far from settled.  

This module considers some of the key conceptual debates and environmental conflicts arising in this context. Examination of these debates and conflicts will demonstrate the contested and uneven nature of environmental change and the measures sought to address these changes. The overall aim of the module is to help students develop a more nuanced, critical and multi-disciplinary understanding of environmental change and the different, often contested, ways of responding to such changes.  

The module will consist of weekly interactive lectures/seminars, guest lectures, and set readings. Lectures will introduce students to key concepts and perspectives drawn from the broad field of political ecology. Each week part of the class will be set aside for students to develop their research projects. These projects will focus on a key area of environmental contestation in Ireland through a political ecology lens. The projects will involve group work and individual work, written assignments, oral presentations, and primary research. Class attendance is essential.  

**Learning Outcomes:** On successful completion of this module students will be able to:  
- Understand and apply key theoretical concepts from the field of political ecology to contemporary environmental debates and issues;  
- Identify and critically discuss key sites of environmental contestation in Ireland today;  
- Explain why an in-depth understanding of environmental problems today requires an understanding of the political, economic and social contexts out of which they emerge and within which they are managed  

**Assessment:** Research project = 80% (incl. two written assignments = 30% each; one oral presentation = 20%); Class Participation/reading = 20% (incl. leading weekly group discussion/reading notes).  

**Module Breakdown:** Contact Hours (Lectures = 10hrs; Seminars = 10hrs); Additional Input (Lecture & Seminar Preparation = 60hrs; Reading = 60hrs; Assessment Preparation = 110 hrs). TOTAL = 250 hrs.  

**Key texts:**  
GGU44936 Globalisation & African Development

Module Co-ordinator: Dr Pádraig Carmody (carmodyp@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: This module explores the nature and impacts of globalisation in Africa. Particular attention is paid to the geography of HIV/AIDS, gender and development, China’s rising role in the continent, oil politics and the so-called “resource curse” or paradox of plenty that Africa is the most resource rich continent in the world but also the poorest. Other topics covered included gender and the mobile phone revolution.

Learning Outcomes: On successful completion of this module students will be able to:

- Discuss critically the historical evolution of Africa’s incorporation into the global political economy;
- Judge and critique different perspectives on the nature of the globalization in Africa;
- Critically evaluate the influence of organizations such as the International Monetary Fund, World Bank and International Non-Governmental Organisations in Africa;
- Apprehend the construction and interaction between issues such ethnicity, conflict and terrorism; regionalisation and globalization and gender and development;
- Interrogate the geography and evolution of HIV/AIDS in Africa and its causal factors;
- Independently evaluate broader literatures on development in Africa.

Assessment: 2 hour examination (50%) Answer 2Q/6; Essay (50%)

Module Breakdown: Contact Hours (Lectures = 18hrs; Tutorials = 4 hours; Additional Input (Essay = 52 hrs; Other reading = 85hrs; Revision and examination = 66hrs). TOTAL = 250hrs.

Key Texts:
GGU44961 Understanding Environmental Change 10 ECTS

Module Co-ordinator: Dr Carlos Rocha (rochac@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: The global environment, including climate, is changing. This change has major economic, social and policy implications and will thus underpin living conditions for the whole of humanity going forward. The course will introduce the functional aspects of this change using an Earth Systems Science approach by providing the basis to understand how major components of the Earth System are linked and how these links change over time. Conceptual developments in this understanding, as well as the basic modern concepts in Environmental Change (both human-induced and natural) will be discussed as a basis to comprehend the utility of forecast tools used as a basis for societal response.

Learning Outcomes: On successful completion of this module students will be able to:

- Demonstrate a solid understanding of the earth system
- Articulate the complexity of feedbacks driving current environmental change
- Quantitatively examine the factors shaping the environment, including climate
- Describe and distinguish between natural and human-induced drivers of environmental change
- Critically analyse conflicting arguments on the issues of environmental change
- Examine and evaluate public policy aimed at coping with environmental change

Assessment: 100% Continuous Assessment (CA). CA includes: Homework – two individual quiz/short essay papers (15% each); two group oral presentations and researched class debates (15% each); One individual extended (4,000 words) essay (40%).

Module Breakdown: Lectures (30 hrs); Set reading, activities and independent study (180 hrs); Assessed work (38 hrs).

Recommended Reading:
Weart SR.: The Discovery of Global Warming (2004, Available online at: http://www.aip.org/history/climate


GGU44962 Spatial Analysis using GIS  
5 ECTS

Module Co-ordinator: Dr Niamh Harty (hartyn@tcd.ie)

Type: Optional (NS, TSM and PSG)

Prerequisite: GGU33933

Note: Places on this module are limited to 10 students. In the case of oversubscription, places will be allocated on the basis of student performance in GGU33933.

Outline: This module introduces students to the framework and methods used in real-life problems related to the field of Spatial Analysis by applying the theoretical knowledge gathered during the module to live project work. The module seeks to impart the necessary skills and knowledge to enable graduates to engage as team members and leaders in the types of large and complex sustainable environment projects that are increasingly being planned across the world. It aims to help fill a major and increasingly obvious skills gap. A unique feature of this module is the use of Dublin and Ireland as a learning laboratory, where the students will take responsibility of a project. The Spatial Analysis using GIS module is designed to introduce the student to spatial analysis using the Geographic Information Systems (GIS) platform ArcGIS.

Learning Outcomes: On successful completion of this module students will be able to:

- Solve Spatial Analysis problems by applying interdisciplinary approaches.
- Discuss and debating solutions to problems in the environment.
- Communicate effectively in technical and scientific writing, and presenting scientific/technical ideas concisely to a technical audience that may not be expert in the specific domain of the presentation.
- Implement technical knowledge to address a spatial analysis problem.
- Identify and use appropriate mathematical methods, numerical techniques and GIS tools for application to new and ill-defined spatial analysis problems.
- Describe succinctly, the relevant advantages and disadvantages of various technologies to a lay audience, and to communicate effectively in public.

Assessment: Course work (100%)

Module Breakdown: Contact Hours - Lectures = 7 hrs, Labs 18 hrs; Additional Inputs - Reading and work on project = 100 hrs. TOTAL = 122hrs.

Key Texts:

A list of recommended reading materials, standards, manuals, best practice documents is provided in the project section of the module. Each list is relevant to each specific project.
GGU44966 Historical Geography 1

Module Co-ordinator: Dr Mark Hennessy (mhnnessy@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: This module presents an overview of the historical geography of Ireland from the earliest human settlement in the Mesolithic through to c.1000 A.D. Throughout the module developments in Ireland are set within appropriate comparative and theoretical contexts.

The principle topics explored are settlement, land use and agriculture, the changing environment (including human impacts), patterns of cultural variation and interaction and how these have come together to forge changing landscapes and regions.

Learning Outcomes: On successful completion of this module students will be able to:

• Understand the development of landscapes and regional patterns in Ireland from prehistory to the early medieval period;
• Place developments in Ireland in appropriate comparative contexts;
• Critically evaluate alternative explanations/interpretations of the pattern of landscape and regional change in Ireland;
• Critically evaluate archaeological, field and documentary evidence relating to this topic.

Assessment: 1.5 hour examination (50%); coursework (50%)

Module Breakdown: Contact Hours (Lectures = 22 hrs); Additional Inputs (Reading and preparation for class discussions = 101 hrs; examination = 1.5 hrs). TOTAL = 124.5hrs.

Key Texts:
GGU44967 Historical Geography 2  
5 ECTS

Module Co-ordinator: Dr Mark Hennessy (mhnnessy@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: This module presents an overview of the historical geography of Ireland from c.1000 A.D. through to c.1900 A.D. Throughout the module developments in Ireland are set within appropriate comparative and theoretical contexts. The principle topics explored are settlement, land use and agriculture, the changing environment (including human impacts), patterns of cultural variation and interaction and how these have come together to forge changing landscapes and regions.

Learning Outcomes: On successful completion of this module students will be able to:

- Understand the development of landscapes and regional patterns in Ireland from the early medieval period to c.1900 A.D;
- Place developments in Ireland in appropriate comparative contexts;
- Critically evaluate alternative explanations/interpretations of the pattern of landscape and regional change in Ireland;
- Critically evaluate archaeological, field and documentary evidence relating to this topic.

Assessment: 1.5 hour examination (50%); coursework (50%)

Module Breakdown: Contact Hours (Lectures = 22 hrs); Additional Inputs (Reading and preparation for class discussions = 101 hrs; examination = 1.5 hrs). TOTAL = 124.5hrs.

Key Texts:
GU44969 Urban Geography: Cities, Space and Culture 10 ECTS

Module Co-ordinator: Dr Cian O’Callaghan (ocallac8@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: It is now claimed that we have entered an ‘urban age’. The bulk of the world’s population now live in ‘urban’ areas, while the future fate of humanity (either utopian or dystopian) is increasingly being tied to the fate of cities. This module will introduce students to key debates and concepts in urban geography that shed light on what it means to live in an ‘urban society’.

The first part of the module will outline how political economic processes, including the relationship between the supply of credit and the role of the property development sector and the role of entrepreneurial urbanism, produce urban space in highly uneven ways. The second part of the module will examine social and cultural geographies of cities, focusing on the role of identity and difference in shaping urban space and everyday life. The module will also use Dublin as a key case study and research laboratory to explore how these processes are shaping that city. Focussing on contemporary events, it will bring together rich and varied scholarship from leading researchers in Dublin and the experiential analysis of policy makers, community activists, and a range of other urban actors.

Students will be expected to attend lectures and read widely in preparation, engage in group activities and discussions. The course comprises lectures, seminar-based classes, one-day fieldtrip, and group-based activities.

Learning Outcomes: On successful completion of this module students will be able to:

• Demonstrate a knowledge of key theoretical debates in urban geography and be able to apply key concepts to real world situations
• Have a detailed knowledge of the factors underlying patterns and approaches to urban economic development.
• Recognise the impacts of urban regeneration and culture-led approaches to urban planning and development.
• Demonstrate knowledge of how identity and difference shapes urban space and everyday life.
• Demonstrate a critical awareness of current socio-spatial issues and challenges relating to Dublin

Assessment: 2hr Examination (50%); coursework (essay and project 50%)

• CW1 Concept essay: The concept essay asks you to pick a concept we covered in class and write a concept essay (literature review) of how it has been used in relevant urban geography studies.
• CW2 Project: The research project asks you to pick one topic we have covered in class, and research how it can be applied to study recent trends or issues in Dublin. You should identify a particular policy, initiative, or case study area that relates to your chosen topic and conduct independent research on this. The independent research you conduct can include interviews, ethnography, surveys and/or documentary analysis. You should then write a report (3,000 words) documenting your research and applying the conceptual literature to analyse your case study.

Module Breakdown: Contact Hours (Lectures = 30 hrs; Seminars = 12 hrs; Fieldtrip = 2 hrs); Additional Inputs (Reading and preparation for class discussions; Essay; Project. examination = 206 hrs). TOTAL = 250 hrs.

Key Texts:


### GGU44971 Stormy Geomorphology

**10 ECTS**

**Module Co-ordinator:** Dr Mary Bourke ([bourkem4@tcd.ie](mailto:bourkem4@tcd.ie))

**Type:** Optional (NS, TSM, PSG & ES)

**Pre-requisites:** None

This is a 5-day field residential course in Ireland, usually taking place in September.

**Outline:** Did you know that the world’s largest wave was recorded off the coast of Ireland in 2016 - a wall of water 19 m high? Or that 180 km/hr winds ripped across Ireland peeling the roofs off houses like tin cans, killing hundreds of people in its path?

There is no doubt that the severity of extreme climate events has become increasingly evident. However, separation of global & regional trends from local effects is confounded by 1. internal landscape system dynamics and 2. external forcing factors such as changes in land use, river and coastal engineering. Geomorphology is a critical discipline in disentangling climate change impacts from other controlling factors.

During this field trip you will examine the geomorphological evidence for extreme events. The sites will include a location where mega clasts (the size of cars) were thrown on top of cliffs 30 m high by waves. We will build your skills and knowledge so that you can understand the role of extreme events in the evolution of the Irish landscape. You will receive field instruction on how to collect data using established and advanced technologies in order to build data sets on key environmental parameters. For example, students will be shown how to deploy drones to collect data from which to build high resolution topographic data sets.

**Learning Outcomes:** On successful completion of this module students will be able to:

- Classify and describe landforms in a coastal setting.
- Use their knowledge of systems theory as applied to geomorphology specifically with regard to the concepts of feedback, thresholds, and equilibrium.
- Observe the significance of spatial and temporal scales in geomorphology.
- Analyse geomorphological systems in terms of resisting and driving forces.
- Understand a range of dynamic surface processes that are important in the stability of landforms.
- Increase their ability to quantitatively use and evaluate geomorphological data with numerical, statistical and cartographical methods.
- Further understand relationships between physical and human aspects of environments and landscapes.
- Formulate research hypotheses.
- Collect process and analyse primary field data.
- Conduct field research safely.
- Demonstrate technical proficiency in a range of primary data collection methods.
- Work collectively to collate and analyse the results of fieldwork within strict time constraints.
• Distinguish between observations and interpretations, and compile a field notebook recording research activities and results.
• Increase their ability to synthesize and communicate scientific findings by their interpretation of their fieldwork and present these findings in oral and written form.
• Contribute to debates over societal adaptation to extreme events.

Assessment: Course work (100%)
4. Examinations and Assessment

Throughout your degree, your progress will be evaluated by examination and course work. Details concerning examination procedures are documented in the College Calendar and you are advised to familiarise yourselves with these at the earliest opportunity. Modules are assessed in the semester in which they are taught.

In all cases, the end-of-year Geography mark is calculated according to the relative ECTS weightings of the modules taken.

For NS students 20% of the final degree mark in Geography is contributed by the third-year (JS) mark. The remaining 80% is based on the final-year (SS) mark.

Students following TSM Pattern B taking Geography as their major subject have 25% of their final degree marks contributed by their minor moderatorship subject (these exams being taken at the end of the JS year), 25% contributed by their JS Geography mark and 50% contributed by their final-year mark in Geography.

Students following TSM Pattern B and dropping Geography at the end of the JS year, take their minor moderatorship examination in Geography at the end of their third year and then have the bulk of their degree result - 75% - determined by their major moderatorship subject.

The final degree mark for TSM A students is made up of 50% Geography and 50% from the other subject, for the Senior Sophister year only. There is no carry forward of the grade from JS.

For students taking the Politics-Geography combination, see the Political Science and Geography Handbook (http://www.tcd.ie/Political_Science/undergraduate/political-science-geography/)

The Haughton Prize is awarded annually to the student who achieves the highest overall Geography mark in the Junior Sophister year.

Examinations

The regulations governing examinations are set out in the College Calendar.

Examination timetables are published in advance of the dates of examinations. See the examinations office website for more details (http://www.tcd.ie/Examinations/Timetables/). You must ensure that you are available for the duration of the examinations period as presented in the College Calendar (http://www.tcd.ie/calendar/).

It is the student’s responsibility to establish the dates, times and venues of examinations No reminders will be sent to you

The College employs anonymous marking where practically possible. Results will be published by student number. The marking criteria used when marking Geography examination scripts are presented in the relevant section below.

Course work

The form of course work will vary between modules. Details concerning the assessment requirements, value, marking criteria, and deadline/process for submission will be circulated by the module co-ordinator or lecturer when the assessment task is set.

Under normal circumstances, course work will be submitted on a Monday and marked within 20 working days of submission (this does not apply to the Dissertation). The results will be notified to students by the module coordinator or lecturer.

All submitted course work must have a completed Assignment Submission Form attached. These are available from the Geography website – see Courses, Current Students – or from the Geography Desk.
Marks are returned in the form of indicative grades as presented in the table below. These grades are provisional, being subject to moderation at the Examiners’ Meeting.

<table>
<thead>
<tr>
<th>Mark Range</th>
<th>Indicative Grade</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A++</td>
</tr>
<tr>
<td>80-89</td>
<td>A+</td>
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<tr>
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<tr>
<td>40-44</td>
<td>D</td>
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<tr>
<td>&lt;40</td>
<td>F</td>
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</table>

**Submission of assessed course work in the Sophister Years**

It is the student’s responsibility to ensure that you accurately note the deadline and procedure for submission of assessed work.

When work is handed in a register of its receipt is kept. The register includes the date of submission and the student’s signature.

For work that is submitted electronically, the student must obtain acknowledgement from the member of the academic staff responsible that the submission has been received. Unless otherwise stipulated, all written work must be word-processed.

The student must keep a paper and electronic copy of all work submitted for assessment.

**Policy regarding absence from in-class assessments**

Please note that attendance at all undergraduate classes (lectures, laboratory classes etc.) in the fresh years is mandatory. Unsatisfactory attendance can result in you not being permitted to rise with the year. Please see the college calendar for the regulations regarding attendance (general regulations ii, 17 – 23).

In Sophister years, the importance of attendance increases as both years generally contribute directly to your final degree mark.

Attendance at assessments is compulsory in all years. Students must be available during term and certainly during the teaching term. However, in exceptional circumstances and if a reasonable case is made, staff can make special arrangements for students regarding assessments. Each case will be considered on its merits.

Paid employment, family holidays, weddings, birthdays etc. do not constitute grounds for making special assessment arrangements.

The Undergraduate Studies website contains further information concerning the academic regulations governing study at Trinity College.
Deadlines and penalties for late submission
The time, date and mode of submission of all coursework will be communicated to you by the lecturer concerned. It is your responsibility to accurately note this information and plan your time accordingly. In the event that you are unclear about any aspect of coursework submission, you should seek clarification from the lecturer in advance of the deadline.

Failure to submit assessed work by the stipulated deadline will result in a zero mark for that component. Students failing to submit more than a third of the required coursework in any term will be reported as ‘non-satisfactory’ and may be required to repeat the year (general regulations ii, 25-26). Requests for extensions on medical or other grounds should be made via your tutor in advance of the deadline. Further information can be found in part II of the College Calendar (General Regulations 45).

Students registered with the Disability Office
Students registered with the Disability Office are advised to contact the Module Coordinator or Lecturer at the beginning of a module, to ensure their learning and assessment requirements are met and to enable any adjustments to examination conditions are implemented. The student should bring a copy of their LENS report with them.

Important note regarding plagiarism
All students (undergraduate and postgraduate, new entrants and existing students) must ensure that they have a clear understanding of what plagiarism is, how Trinity deals with cases of plagiarism, and how to avoid it.

We ask you to take the following steps:

- Visit the online resources to inform yourself about how Trinity deals with plagiarism and how you can avoid it at http://tcd-ie.libguides.com/plagiarism You should also familiarise yourself with the Calendar entry on plagiarism and the sanctions which are applied.
- Complete the ‘Ready, Steady, Write’ online tutorial on plagiarism at http://tcd-ie.libguides.com/plagiarism/ready-steady-write. Completing the tutorial is compulsory for all students.
- Familiarise yourself with the declaration that you will be asked to sign when submitting course work at http://tcd-ie.libguides.com/plagiarism/declaration (coursework/assignment submission forms can be downloaded from Geography’s Undergraduate web page - https://www.tcd.ie/Geography/local/#assignmentsubform )
- Contact your College Tutor, your Course Director, or your Lecturer if you are unsure about any aspect of plagiarism.

Plagiarism is interpreted by the University as the act of presenting the work of others as one’s own work, without acknowledgement. Plagiarism is considered as academically fraudulent, and an offence against University discipline. The University considers plagiarism to be a major offence, and subject to the disciplinary procedures of the University.

Plagiarism can arise from deliberate actions and also through careless thinking and/or methodology. The offence lies not in the attitude or intention of the perpetrator, but in the action and in its consequences.

Plagiarism can arise from actions such as:
- a) copying another student’s work;
- b) enlisting another person or persons to complete an assignment on the student’s behalf;
c) quoting directly, without acknowledgement, from books, articles or other sources, either in printed, recorded or electronic format;

d) paraphrasing, without acknowledgement, the writings of other authors.

Examples (c) and (d) in particular can arise through careless thinking and/or methodology where students:

- fail to distinguish between their own ideas and those of others;
- fail to take proper notes during preliminary research and therefore lose track of the sources from which the notes were drawn;
- fail to distinguish between information which needs no acknowledgement because it is firmly in the public domain, and information which might be widely known, but which nevertheless requires some sort of acknowledgement;
- come across a distinctive methodology or idea and fail to record its source.

All the above serve only as examples and are not exhaustive.

Students should submit work done in co-operation with other students only when it is done with the full knowledge and permission of the lecturer concerned. Without this, work submitted which is the product of collusion with other students may be considered to be plagiarism.

It is clearly understood that all members of the academic community use and build on the work of others. It is commonly accepted also, however, that we build on the work of others in an open and explicit manner, and with due acknowledgement. Many cases of plagiarism that arise could be avoided by following some simple guidelines:

- Any material used in a piece of work, of any form, that is not the original thought of the author should be fully referenced in the work and attributed to its source. The material should either be quoted directly or paraphrased. Either way, an explicit citation of the work referred to should be provided, in the text, in a footnote, or both. Not to do so is to commit plagiarism.
- When taking notes from any source it is very important to record the precise words or ideas that are being used and their precise sources.
- While the Internet often offers a wide range of possibilities for researching particular themes, it also requires particular attention to be paid to the distinction between one’s own work and the work of others. Particular care should be taken to keep track of the source of the electronic information obtained from the Internet or other electronic sources and ensure that it is explicitly and correctly acknowledged.

It is the student’s responsibility to ensure you do not commit plagiarism. If in doubt, you should seek advice from a lecturer, tutor or supervisor on avoiding plagiarism.

See Guidelines on Referencing below.

NB: Assignments may be checked using anti-plagiarism software

**Guidelines on Referencing**

Geography employs the Harvard Referencing system and students must use this method in all written work (including presentations). Please note the following points:

- You should insert a citation when referring to the work or ideas of others. This can be done when you are reviewing existing work or using the work of others to support your own arguments.
- You should cite all references within the text using the author’s surname (no first names or initials) followed by the year of publication. For example, “Smith (2009) demonstrates that...” or “These results support previous work in this area (Smith, 2009).”
• If there are two authors, include both in the citation within the text. For example, “Smith & Jones (2009) demonstrate that...”. If there are three or more authors, insert “et al.” after the first author. For example, if Smith & Jones write a paper with their colleague Bloggs, this should be cited in the text as “Smith et al. (2009) demonstrate that...”.

• When citing multiple works, references must be arranged in chronological order within the text. For example, “These results support previous work in this area (Smith, 2001; Jones, 2004; Smith et al., 2009).

• At the end of your assignment, you must compile a reference list that includes all of the material cited in your work. This differs from other forms of Bibliography that may list work that has not been cited (e.g. recommended reading).

• Your reference list must be in alphabetical order by first author’s surname, with material by individual authors ordered chronologically. For example, the papers above would be listed as:
  Smith, C.D. (2001)
  Smith, C.D. (2009)
  Smith, C.D., Jones, A.B. (2009)

• The precise format of the references varies with publication type. Common examples are:
  **Academic Journal papers:**
  **Books:**
  **Website:**
  Author names (Year) *Title of webpage* (online), URL, [Date Accessed]

For more information see the
Freeman Library website:

https://www.tcd.ie/Geography/freeman-library/

Marking Criteria
Geography uses the following guidelines on awarding grades for essays and examination answers.

<table>
<thead>
<tr>
<th>Class</th>
<th>Mark Range</th>
<th>Criteria</th>
</tr>
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<tbody>
<tr>
<td>I</td>
<td>90-100</td>
<td>EXCEPTIONAL ANSWER; This answer will show original thought and a sophisticated insight into the subject, and mastery of the available information on the subject. It should make compelling arguments for any case it is putting forward and show a rounded view of all sides of the argument. In exam questions, important examples will be supported by attribution to relevant authors and, while not necessarily giving the exact date, should show an awareness of the approximate period. In essays, the referencing will be comprehensive and accurate.</td>
</tr>
<tr>
<td>I</td>
<td>80-89</td>
<td>OUTSTANDING ANSWER; This answer will show frequent originality of thought and make new connections between pieces of evidence beyond those presented in lectures. There will be evidence of awareness of the background behind the subject area discussed, with evidence of deep understanding of more than one view on any debatable points. It will be written clearly in a style which is easy to follow. In exams, authors of important examples may be provided. In essays all important examples will be referenced accurately.</td>
</tr>
<tr>
<td>I</td>
<td>70-79</td>
<td>INSIGHTFUL ANSWER; showing a grasp of the full relevance of all course material discussed and will include one or two examples from wider reading to extend the arguments presented. It should show some original connections of concepts. There will be only minor errors in examples given. All arguments will be entirely logical and well written. Referencing in exams will be sporadic but referencing should be present and accurate in essays.</td>
</tr>
<tr>
<td>II-1</td>
<td>65-69</td>
<td>VERY COMPREHENSIVE ANSWER; good understanding of concepts supported by broad knowledge of subject. Notable for synthesis of information rather than originality. Evidence of relevant reading outside lecture notes and coursework. Mostly accurate and logical with appropriate examples. Occasional lapse in detail.</td>
</tr>
<tr>
<td>II-1</td>
<td>60-64</td>
<td>LESS COMPREHENSIVE ANSWER; mostly confined to good recall of coursework. Some synthesis of information or ideas. Accurate and logical within a limited scope. Some lapses in detail tolerated. Evidence of reading the assigned course literature.</td>
</tr>
<tr>
<td>II-2</td>
<td>55-59</td>
<td>SOUND BUT INCOMPLETE ANSWER; based on coursework alone but suffers from a significant omission, error or misunderstanding. Usually lacks synthesis of information or ideas. Mainly logical and accurate within its limited scope and with lapses in detail.</td>
</tr>
<tr>
<td>II-2</td>
<td>50-54</td>
<td>INCOMPLETE ANSWER; suffers from significant omissions, errors and misunderstandings, but still with understanding of main concepts and showing sound knowledge. Several lapses in detail.</td>
</tr>
<tr>
<td>III</td>
<td>45-49</td>
<td>WEAK ANSWER; limited understanding and knowledge of subject. Serious omissions, errors and misunderstandings, so that answer is no more than adequate.</td>
</tr>
<tr>
<td>III</td>
<td>40-44</td>
<td>VERY WEAK ANSWER; a poor answer, lacking substance but giving some relevant information. Information given may not be in context or well explained, but will contain passages and words, which indicate a marginally adequate understanding.</td>
</tr>
<tr>
<td>Fail</td>
<td>35-39</td>
<td>MARGINAL FAIL; inadequate answer, with no substance or understanding, but with a vague knowledge relevant to the question.</td>
</tr>
<tr>
<td>Fail</td>
<td>30-34</td>
<td>CLEAR FAILURE; some attempt made to write something relevant to the question. Errors serious but not absurd. Could also be a sound answer to the misinterpretation of a question.</td>
</tr>
<tr>
<td>Fail</td>
<td>0-29</td>
<td>UTTER FAILURE; with little hint of knowledge. Errors serious and absurd. Could also be a trivial response to the misinterpretation of a question.</td>
</tr>
</tbody>
</table>
Geography uses the following agreed guidelines on marking for project/dissertation assessment.

<table>
<thead>
<tr>
<th>Class</th>
<th>Mark Range</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>80-100</td>
<td>Exceptional project report showing broad understanding of the project area and excellent knowledge of the relevant literature. Exemplary presentation and analysis of results, logical organisation and ability to evaluate critically and discuss results coupled with insight and originality.</td>
</tr>
<tr>
<td></td>
<td>70-80</td>
<td>A very good to excellent project report showing evidence of wide reading, with clear presentation and thorough analysis of results and an ability to evaluate critically and discuss research findings. Clear indication of some insight and originality. A very competent and well-presented report overall but with some room for improvement.</td>
</tr>
<tr>
<td>II-1</td>
<td>60-69</td>
<td>A good to very good project report which shows a reasonably good understanding of the problem and knowledge of the relevant literature. Mostly sound presentation and analysis of results but with occasional lapses. Relevant interpretation and critical evaluation of results, though somewhat limited in scope. General standard of presentation and organisation adequate to good.</td>
</tr>
<tr>
<td>II-2</td>
<td>50-59</td>
<td>A moderately good project report which shows some understanding of the problem but limited knowledge and appreciation of the relevant literature. Presentation, analysis and interpretation of the results at a basic level and showing little or no originality or critical evaluation. Insufficient attention to organisation and presentation of the report.</td>
</tr>
<tr>
<td>III</td>
<td>40-49</td>
<td>A weak project report showing only limited understanding of the problem and superficial knowledge of the relevant literature. Results presented in a confused or inappropriate manner and incomplete or erroneous analysis. Discussion and interpretation of results severely limited, including some basic misapprehensions and lacking any originality or critical evaluation. General standard of presentation poor.</td>
</tr>
<tr>
<td>Fail</td>
<td>20-39</td>
<td>An unsatisfactory project containing substantial errors and omissions. Very limited understanding or, in some cases, misunderstanding of the problem and very restricted and superficial appreciation of the relevant literature. Very poor, confused and, in some cases, incomplete presentation of the results and limited analysis of the results including some serious errors. Severely limited discussion and interpretation of the results revealing little or no ability to relate experimental results to the existing literature. Very poor overall standard of presentation.</td>
</tr>
<tr>
<td>Fail</td>
<td>0-19</td>
<td>A very poor project report containing every conceivable error and fault. Showing virtually no real understanding or appreciation of the problem and of the literature pertaining to it. Chaotic presentation of results and, in some cases, incompletely presented and virtually non-existent or inappropriate or plainly wrong analysis. Discussion and interpretation seriously confused or wholly erroneous revealing basic misapprehensions.</td>
</tr>
</tbody>
</table>
5. Geography Staff and Contact Information

The Geography Undergraduate Teaching and Learning desk is in the School of Natural Sciences Office on the ground floor of the Museum Building:

Email: geography@tcd.ie
Tel: +353-(0)1 896 1576
Executive Officer: TBC

Members of staff from across the School of Natural Sciences contribute to the teaching programmes in Geography. Specific enquiries relating to individual modules should be directed to the module co-ordinator or the member of teaching staff involved.

Academic Staff

**Dr Mary Bourke**, BA, MA (UCD), Ph.D. (Australian National University) FTCD
Research Interests: Physical Geography: Geomorphology of Mars and Earth; fluvial, aeolian, mass wasting and rock breakdown, arid zone geomorphology, natural hazards, rock coasts.
Contact: bourkem4@tcd.ie

**Dr Patrick Bresnihan**, BA (Dublin), MPhil (Cambridge), PhD (Dublin)
Research Interests: Political ecology and environmental infrastructures with a particular focus on water and energy.
Contact: pbresnih@tcd.ie

**Dr Pádraig Carmody**, BA (Dublin), MSc (Dublin), PhD (Minnesota), FTCD, MRIA
Research Interests: Development and economic geography, political economy, globalisation, Africa.
Contact: carmodyp@tcd.ie

**Professor Peter Coxon**, BSc (Sussex), PhD (Cantab.), FTCD, MRIA, Science course coordinator
Research Interests: Dating and analysis of landscape change using pollen analysis; biostratigraphy of late Tertiary and mid-late Pleistocene deposits; glacial geomorphology; bog flows; environmental archaeology of buried walls and Early Christian structures in western Ireland.
Contact: pcoxon@tcd.ie

**Dr Federico Cugurullo**, BA, MA (Cagliari), PhD (London)
Research interests: sustainable urban development; smart cities; eco-cities; experimental urbanism; the ideal city; Southeast Asia; Middle East.
Contact: cugurulf@tcd.ie

**Professor Anna Davies**, BA (Cantab.), MSc (Oxf Brookes), PhD (Cantab), FTCD, MRIA
Research Interests: Human geography and the environment; environmental values and valuation; environmental planning and governance; environmental conflicts and justice with a special interest in waste management and public participation in environmental issues.
Contact: daviesa@tcd.ie
Dr Robin Edwards, BSc (Southampton), PhD (Dunelm)
Research Interests: Sea level change & climate; foraminifera; quantitative palaeoenvironmental reconstruction; oceanography; coastal change; environmental archaeology.
Contact: robin.edwards@tcd.ie

Dr Mark Hennessy, BA (NUI), MA (Dublin), PhD (NUI)
Research Interests: Historical geography; history and philosophy of geography; history and theory of cartography; Australasia.
Contact: mhnnessy@tcd.ie

Dr Philip Lawton, BA, MA (UCD), PhD (Dublin)
Research Interests: Urban Social and Economic Change, Suburbanization and Urban Processes, Urban Public Space, Film and the City.
Contact: lawtonp@tcd.ie

Dr Gayle McGlynn, B.A. (Dublin), M.Sc. (London), Ph.D. (Dublin)
Research interests: Climate change; reconstructing past environmental change using sediment-based techniques, particularly in Africa; biodiversity hotspots; long-term human-environment interactions and related implications.
Contact: gmcglyn@tcd.ie

Dr Susan P. Murphy, BA, MA, PhD (UCD)
Research Interests: Ethics and climate change; Human rights; Humanitarian and Development practice; Theories of justice (domestic, international, and global); Ethics of assistance; Gender and development.
Contact: susan.p.muryp@tcd.ie

Dr Cian O’Callaghan, BA (Cork), PhD (Cork)
Research Interests: Urban political economy, Creativity and place, Neoliberalism, Urban vacancy and ‘new ruins’.
Contact: ocallac8@tcd.ie

Dr Carlos Rocha, BSc (Lisbon). PhD (Lisbon)
Research Interests: Marine and Environmental Biogeochemistry, Oceanography, Climate Change forcing on Carbon and Nitrogen Cycling, Benthic nutrient cycling, Estuarine nutrient dynamics.
Contact: rochac@tcd.ie

Dr Martin Sokol, IngArch (Bratislava), MA (Grenoble), PhD (Newcastle)
Research Interests: Economic geography; Urban and regional development; Post-socialist geographies; Geographies of finance.
Contact: sokolm@tcd.ie

Additional Staff
In addition to the academic staff list above, the Geography teaching programmes are supported by the invaluable contributions of range of further staff.
Mr Francis Hendron,  
Role: Chief Technical Officer - Palynology and Geomorphology laboratories; Safety Officer.  
Contact: fhendron@tcd.ie

Dr Elaine Treacy, BA (Dublin), PhD (Dublin)  
Role: Senior Technical Officer – Palynology and Geomorphology laboratories; Safety Officer.  
Contact: treacyel@tcd.ie

Dr James Canavan, BSc(Hons) (Glasgow), PhD (Glasgow)  
Role: Technical Officer - Palynology and Geomorphology laboratories; Safety Officer.  
Contact: canavaj1@tcd.ie

Ms Gillian Marron, BA (NUI), Diploma, Library & Information Science (NUI), MLIS (NUI),  
Role: Librarian (Freeman Library)  
Contact: marrong@tcd.ie

The Geography Departmental office may be contacted at geog@tcd.ie or by phone at 8961576.

Members of staff from across the School of Natural Sciences contribute to the teaching programmes in Geography. Specific enquiries relating to individual modules should be directed to the module co-ordinator or the member of teaching staff involved.

### 6. Facilities, Conduct and Safety

The Discipline of Geography is one of the constituent disciplines of the School of Natural Sciences. Other disciplines within the School include the Disciplines of Botany, Environmental Science, Geology and Zoology. The Discipline of Geography is primarily housed within the Museum Building in New Square, however, a number of staff and postgraduates work within the Environmental Sciences Unit and Luce Hall. Geography has several dedicated facilities in the Museum Building that may be used by undergraduate students. These facilities include lecture rooms, laboratories and a library.

#### Laboratories

The **Geomorphology Laboratory** is the primary teaching laboratory within the discipline. The laboratory is mainly used for soil and sediment based work as well as non-hazardous chemical work.

The **Palynology Laboratory** is reserved for work that requires the use of hazardous chemicals. It is primarily used for dissertation research projects. The Senior Technical Officer, Elaine Treacy or Technical Officer, James Canavan must be consulted before undertaking laboratory work in order that the appropriate hazardous chemical training and a lab induction can be arranged.

The **Basement Laboratory** houses our particle size analysis (PSA) instrument; The Malvern 2000. Anyone required to use this instrument will be given full training in its operation in advance of work commencing.

#### Safety

The Discipline of Geography Safety Statement is located within Room B8A, Palynology Laboratory.
The safety statement is also available online at https://www.tcd.ie/Geography/local/. The document contains all relevant safety information for the discipline, including risk assessments, policies and forms.

Undergraduates should familiarise themselves with the specific regulations and safety information for all facilities in the Discipline of Geography. In addition, the general College regulations which are set out in the College Calendar (available from the Freeman and Berkeley Libraries or online at http://www.tcd.ie/calendar/) can be consulted.

Under the **Safety, Health and Welfare at Work Act (2005)**, Trinity College Dublin has a duty to provide, within reason, a safe place of work and safe working practices. As a student using facilities in the Discipline of Geography, you have responsibility for your own safety and that of your fellow students and staff. To this end, all safety protocols and instructions as laid out in the Safety Statement and any additional instructions given by the staff in charge of a class/laboratory practical/fieldtrip must be understood and adhered to.

### Emergencies

Situations which may require emergency response include:

- Fire
- Emergency evacuation due to bomb alerts, gas leaks, chemical spills, biological or radioactive incidents
- Serious accident and injury
- Natural disaster
- Off-site incidents
- Power failure

In the event of an emergency, contact the college Emergency number Ext 1999 (from an internal line) or 01 896 1999 (from a mobile). You should give your name, location and the nature of the emergency. If necessary you can evacuate the building by using one of the break-glass units.

### Project Work

Before commencing with any new project work, all students must complete a Project Assessment form. This is particularly relevant for Senior Sophister dissertation projects. This will help you identify any areas of your proposed work that may need risk assessment and may also be useful for planning and scheduling your work before you begin. All students must also complete a School of Natural Sciences, Discipline of Geography Health Questionnaire and an Emergency Contact Form.

### Laboratory Safety

Laboratory protocols exist for each of the laboratories within the Discipline of Geography. These protocols are available in the Discipline of Geography Safety Statement which is available at https://www.tcd.ie/Geography/local/. Laboratory protocol must be signed off before using any of the laboratories. Any new experimental or project work taking place in any of the laboratories will require a **Risk Assessment for Chemical Procedures** to be completed before the work can begin. Assessments should be reviewed by a Safety Officer before being read and signed by your Supervisor and the Head of Discipline.
Fieldwork Safety
Fieldwork forms an important part of Geography research and teaching. Any staff member, postdoctoral researcher, postgraduate student or undergraduate student must read the Discipline of Geography Fieldwork Safety Manual prior to undertaking fieldwork. Undergraduate students must initially discuss the proposed fieldwork with their academic supervisor and obtain their consent prior to undertaking any fieldwork. A Fieldwork Risk Assessment must be undertaken before embarking on any fieldwork. The risk assessment should be reviewed by a Safety or Technical Officer before being read and signed by your Supervisor and the Head of Discipline.

All of the above assessment forms and manuals are available from the Chief Technical Officer, Francis Hendron, Senior Technical Officer, Elaine Treacy or Technical Officer, James Canavan and also from the Discipline of Geography homepage https://www.tcd.ie/Geography/local/#manual

Fire Safety
The Fire Wardens for the Discipline of Geography are Elaine Treacy (Room 2.1A) and James Canavan (Room B8A). However, individuals are responsible for checking the fire precautions in their work areas. Any defects or potential fire hazards should be reported to the Discipline Fire Wardens or to the Head of Discipline immediately.

Within your work area, note the position of the nearest fire extinguishers and note the position of the nearest fire exit. Under no circumstances should fire doors be wedged or left open. The curtailment of fire spread is dependent on fire doors being kept shut.

When the fire alarm sounds within the building, stop whatever function you are engaged in and leave it in a safe condition. Leave the building by one of the exits. Proceed to the appropriate assembly point for your area. You should ensure to lock your office/lab door behind you when you leave. The assembly point for the museum building is Fellows Square, located outside the arts building.

If you discover a fire, raise the alarm by using one of the break glass units, leave the building, closing or locking all doors behind you, notify the security centre by calling Ext 1999 or 01 8961999 and report to your assembly point.

First Aid
If a student is injured or falls ill during a class, laboratory practical or fieldtrip, the person in charge must be informed immediately. First Aid Kits are located in the Palynology Laboratory, Geomorphology Laboratory, Basement Laboratory and Postgraduate Printing Room (Room 2.9). The First Aid Kits contain a range of dressings and bandages for treatment of minor cuts and burns as well as eyewash solution. If you use any items from the First Aid Kits, please inform a Safety or Technical Officer so the items can be replaced.

Staff trained in Occupational First Aid for the discipline are; Elaine Treacy (Room 2.1A) and James Canavan (Room B8). They also hold fully stocked First Aid Kits in their offices.

All accidents must be reported to a Discipline Safety Officer and entered in the accident book which is kept in room B8A. An accident report form will be completed for each incident.

If an injury requires a doctor or nurse, the college health centre number is Ext 1556 (from an internal line) or 01 896 1556 (from a mobile). The doctor should be informed of when and where the illness took place. In
emergencies where immediate attention or ambulance is required call the emergency number Ext 1999 (or 01 896 1999 from a mobile).

Security
As the museum building is open to the public, it is particularly vulnerable to intruders and potential thieves and as a result, cash, personal items and valuable equipment disappear without apparent explanation. You are advised never to leave a handbag, purse, wallet, calculator, camera, personal computer, etc. unattended in the laboratories or unlocked offices. Intruders often set off the fire alarm in order to gain entry to vacant offices. When evacuating the building once the fire alarm sounds, ensure that you lock doors behind you.

If you encounter an intruder or if a person seems to be acting suspiciously, inform a member of staff or phone:

7. The Freeman Library
The Freeman Library is located off the main concourse of the Museum Building. It is supplementary to the main library system of College and to the College Map Library. It provides a wide range of materials useful for coursework and a quiet working environment. In addition to course-related texts, reference books, bibliographies, periodicals, pamphlets, maps, postgraduate theses and undergraduate dissertations.

Membership of the library is open to all those reading geography. Enquiries concerning the use of the Freeman Library should also be addressed to Gillian Marron (Librarian).

Library opening hours are 9.00 a.m. - 5.00 p.m. on Mondays & Wednesdays, and 9.00 a.m. - 1.00 p.m. on Fridays during term time. The Library is normally closed on Tuesdays and Thursdays. However, the Library will open full time, (9.00 a.m. - 5.00 p.m., Monday – Friday) during busy periods such as the weeks prior to exams. Notices will be placed on the door to let students know any changes in the opening hours. Only key-holders may use the Freeman Library outside these hours and must sign in and out when making use of the library outside normal opening hours.

All books on open access may be borrowed, with the exception of those placed on reserve. No other category of material in the library (periodicals, pamphlets, maps, atlases etc.) may be borrowed except by special arrangement with the librarian. Borrowers are responsible for all books until they are returned. Undergraduate students may borrow up to three books at a time for a period of one week.

During normal opening hours, reserved books may be consulted only in the library. Books placed on reserve may be borrowed overnight. Intending borrowers must apply to the librarian after 4.00 p.m. on the relevant day. Reserved books on overnight loan must be returned by 10.00 a.m. the following day. Similarly, books on reserve may be borrowed for a weekend (Friday, 2.00 p.m. - Monday, 10.00 a.m.).

If students need help in finding information, locating books or using databases please do not hesitate to contact the librarian, Ms Gillian Marron, by e-mail (marrong@tcd.ie) or call into to the librarian’s office.
8. Beyond a Geography Degree

Careers for Geography Graduates
Trinity College geography graduates are to be found in almost every branch of employment. These include teaching at all levels, research in industry, semi-state bodies and academic institutions; planning and development in the civil service, local government and overseas development agencies.

Graduates of the Department are also found in industry, marketing, property management, housing management and research, banking, accountancy, advertising, journalism, publishing, librarianship, television, agriculture, soil surveying, meteorology, hydrology and tourism.

The breadth of the subject enables geographers to be more adaptable to cyclical variations in employment opportunities than the graduates of many narrower specialisms. Moreover, the integrating nature of geography has become a major asset in a world of constant change in which many employers seek adaptability and flexibility, rather than narrow technical knowledge which is soon outdated.

Research Opportunities
Geography has a thriving postgraduate community with students engaged in PhD research in both human and physical geography. Further research information will be available from the Geography Research Directory.

The School of Natural Sciences also runs taught M.Sc. programmes in Environmental Science and Biodiversity & Conservation. These one-year courses comprise 60 ECTS of specialist taught modules followed by an independent research project worth 30 ECTS.

The Masters in Development Practice (MDP) is a two year interdisciplinary degree programme consisting of twenty academic modules across four intersecting disciplines—health, natural, social, and management sciences combined with cross-sectoral field training, professional work-based placements, and a research based dissertation. It blends theory and practice, science and social science to further international development solutions. It is part of a global network under the remit of the United Nations Sustainable Development Solutions Network headquartered in Columbia University in New York.

Further course details including admission requirements and applications process can be obtained from the Postgraduate Prospectus on the Graduate Studies website or via the School of Natural Sciences.