## CONTENTS

1. Welcome to Geography at Trinity College Dublin .......................................................... 3
   Learning Outcomes ...................................................................................................... 4

2. The Undergraduate Degree Programmes .................................................................... 5
   ERASMUS/Study Abroad ............................................................................................ 5
   Modules and ECTS for ERASMUS/Study abroad students ........................................ 5
   Regulations for dissertation proposals for ERASMUS/Study abroad students ............. 6
   Foundation Scholarship Examination ........................................................................ 6

3. Course Structure and Module Outlines ..................................................................... 7
   Semesters and Module Teaching Blocks .................................................................... 7
   Further information .................................................................................................... 7
   Programme Overview ................................................................................................. 8

JunioR Freshman (Year 1) .............................................................................................. 9
   **GG1024** Introduction to Geography I: Physical Geography & Earth System
      Science (10 ECTS credits) .......................................................................................... 9
   **GG1025** Introduction to Geography II: Environmental Geography (10 ECTS credits) ... 10
   **GG1026** Introduction to Geography III: Human Geography (10 ECTS credits) ........... 11

Senior Freshman (Year 2) ............................................................................................ 13
   **GG2023** Geography Student Seminars (10 ECTS credits) ........................................ 13
   **GG2024** Physical Geography: Changing Environments (10 ECTS credits) ............... 14
   **GG2025** Human Geography: Changing Worlds (10 ECTS credits) ............................ 15

Junior Sophister (Year 3) ............................................................................................. 17

Compulsory Geography Modules (NS & TSM students) ............................................... 17
   **GG3028** Advanced Research Methods in Geography I (5 ECTS credits) ...................... 17
   **GG3056** History and Philosophy of Geography (5 ECTS credits) ............................... 18

Optional Geography Modules ...................................................................................... 19
   **GG3015** Globalisation (5 ECTS credits) ..................................................................... 19
   **GG3025** Advanced Research Methods in Geography II (5 ECTS credits) ................. 20
   **GG3030** Environmental Governance I (10 ECTS credits) ........................................ 21
   **GG3033** Geographical Information: Data & Tools (5 ECTS credits) ............................ 22
   **GG3034** Practical Physical Geography (5 ECTS credits) ........................................... 22
   **GG3037** Urban Structure and Regeneration (5 ECTS credits) .................................... 23
   **GG3039** Exploring the sustainable city (5ECTS credits) ............................................ 23
   **GG3053** Deserts of Our Solar System (5 ECTS credits) ............................................ 24
   **GG3475** Glacial Geomorphology - scheduled for year 2017-18 (10 ECTS credits) ...... 25
   **GG3477** Human Origins - scheduled for year 2017-18 (10 ECTS credits) ............... 26
   **GG3478** Periglacial Geomorphology - scheduled for year 2018-19 (10 ECTS credits) .. 26
   **GG3479** Quaternary Oceans & Climate - scheduled for year 2018-19 (10 ECTS credits) ... 27
Trinity Geography

Senior Sophister (Year 4) .................................................................................................................. 28
  GG4030  Geography Dissertation (20 ECTS credits) ................................................................. 28

Optional Geography Modules ....................................................................................................... 29
  GG3475  Glacial Geomorphology - scheduled for year 2017-18 (10 ECTS credits) ............. 29
  GG3477  Human Origins - scheduled for year 2017-18 (10 ECTS credits) ....................... 30
  GG3478  Periglacial Geomorphology - scheduled for year 2018-19 (10 ECTS credits) .... 30
  GG3479  Quaternary Oceans & Climate - scheduled for year 2018-19 (10 ECTS credits) ... 31
  GG4026  Environmental Governance II (10 ECTS credits) .................................................. 31
  GG4036  Globalisation & African Development (5 ECTS credits) ........................................... 32
  GG4061  Understanding Environmental Change (10 ECTS credits) .................................... 33
  GG4062  Spatial Analysis using GIS (5 ECTS credits) ............................................................. 34
  GG4066  Historical Geography I (5 ECTS credits) .................................................................. 34
  GG4067  Historical Geography II (5 ECTS credits) ................................................................. 35
  GG4069  Urban Geography: Cities, space and culture (10 ECTS credits) ............................. 36
  GG4070  Stormy Geomorphology (5 ECTS credits) ................................................................. 37

4. Examinations and Assessment .................................................................................................. 38

Examinations .................................................................................................................................. 38

Course Work .................................................................................................................................... 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

An important note regarding plagiarism ...................................................................................... 40

Guidelines on referencing ............................................................................................................. 41

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 .................................................................................................................................. 47
  Laboratory Safety .......................................................................................................................... 48
  Security ........................................................................................................................................... 49

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.

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 it delivers six undergraduate moderatorships (in the four constituent disciplines, plus Environmental Sciences, Earth Sciences and Political Science and Geography), it runs taught M.Sc. programmes in Environmental Science and Biodiversity & Conservation and provides support for more than 100 postgraduate research students and 20 research staff. In addition to the Geography teaching programme, Geography staff members also contribute to other moderatorships in the School, to the taught masters programmes and to the supervision of research staff and students.

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.

Padraig 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;
- To undertake further study with a high degree of autonomy

IMPORTANT NOTE: The details contained in this booklet are subject to change. Please check the Geography Website for the most up to date information (http://www.tcd.ie/Geography/). 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.
2. The Undergraduate Degree Programmes

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

- The **Single Honours Moderatorship in Natural Science** (NS), in which you concentrate solely on Geography in your final two years.

- The **Two Subject Moderatorship** (TSM) in which Geography is studied with a second subject (Economics, German, History, Languages, Mathematics, Philosophy, Psychology or Sociology) for three or four years.

- A special combined degree is also run in **Political Science and Geography** (see [Political Science and Geography Handbook](#) for more information).

Students taking the TSM Programme or the Political Science and Geography combination may select alternate pathways of study for their fourth year (Senior Sophister).

This choice is made at the end of the third year of study (Junior Sophister).

- **TSM Pattern A**: you take Geography and your second subject in fourth year. *(Available if you are taking Geography with Economics, German, History, Languages, Mathematics, Philosophy, Psychology, Sociology)*

- **TSM Pattern B**: you specialise in either Geography or your second subject in fourth year.

In certain circumstances, a special TSM pathway (**Pattern C**) is available to students who spend their third year abroad on an ERASMUS exchange to study Geography before returning for their final year of Geography in Trinity.

Further details of these exchange possibilities are available from the Study Abroad Co-ordinator for Geography (see below).

- **TSM & Political Science and Geography students** may apply to transfer to the Single Honours Moderatorship in Natural Science (NS) before starting their third year.
  
  To be eligible for transfer, the student must pass their Senior Freshman 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.

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 (Professor Mark Hennessy, [mhnnessy@tcd.ie](mailto:mhnnessy@tcd.ie)).

Students to be nominated for an ERASMUS exchange and mobility grant will be selected on the basis of their overall Junior Freshman 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 Freshman year.

- **Modules and ECTS for ERASMUS/Study abroad students**

  The onus is on the student to ensure that their module information and ECTS are correct **BEFORE** the end of Semester 1 (Michaelmas Term).

  - For a full year abroad, email the [Geography Office](mailto:geography.office@tcd.ie) to ensure you are exempted from any compulsory modules.
  - For a student away for either Semester 1 or Semester 2 only, check with the [Geography Office](mailto:geography.office@tcd.ie) that your module codes and ECTS for your home semester are correct.
• Regulations for dissertation proposal for ERASMUS/Study abroad students

As part of their Geography degree, Natural Science students or Two Subject Moderatorship Pattern B students continuing to take Geography in their Senior Sophister Year are required to undertake an undergraduate dissertation (GG4030).

The preparation and dissertation proposal are usually undertaken in GG3028 (Advanced Research Methods), 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.

Prior to departure on their ERASMUS year the students should contact the GG3028 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 GG3028. 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.

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

Foundation Scholarship Examination in Geography

The Scholarship examination in Geography (Science, Earth Sciences, TSM and Political Science and Geography) consists of two two-hour examination papers. The first paper examines the subjects covered in the GG2024 Changing Environments module. The second paper deals with more general topics within the discipline of Geography.

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 the senior 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:

- [http://www.tcd.ie/undergraduate-studies/foundation-scholarship/](http://www.tcd.ie/undergraduate-studies/foundation-scholarship/)
- [College Calendar Part 1 (Foundation and Non-Foundation Scholarships)](http://www.tcd.ie/undergraduate-studies/foundation-scholarship/)

Or contact Geography’s Freshman Coordinator - Professor Martin Sokol.
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 increasing levels of choice as you progress with your studies.

You may also opt to take elective modules from other degree programmes in College and/or from the Broad Curriculum during your Sophister years.

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 reserved as a “Study Week”. Taught modules valued at 10 credits normally run for the entire length of a semester while 5 credit 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 c/a work. If this happens the student will be expected to take missed parts of the module at the Supplemental Session. It is not possible to take supplemental exams or assessments in modules which contribute to your final moderatorship (degree) result.

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

Further Information

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 regarding Freshman / Sophister Geography which are not dealt with in this booklet or on the website should be directed to:

Geography Freshman Co-ordinator: Professor Martin Sokol (sokolm@tcd.ie)
or
Geography Sophister Co-ordinator: Professor Peter Coxon (pcoxon@tcd.ie)
### Programme Overview 2017-18

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Module</th>
<th>ECTS Credits</th>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>1(JF)</td>
<td></td>
<td><strong>Compulsory Modules</strong></td>
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<tr>
<td></td>
<td></td>
<td>GG1024: Introduction to Geography I: Physical Geography &amp; Earth System</td>
<td>10</td>
<td>TSM &amp; PSG (NS Optional)</td>
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<tr>
<td></td>
<td></td>
<td>GG1025: Introduction to Geography II: Environmental Geography</td>
<td>10</td>
<td>TSM &amp; PSG</td>
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<td></td>
<td></td>
<td>GG1026: Introduction to Geography III: Human Geography</td>
<td>10</td>
<td>TSM &amp; PSG</td>
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<td><strong>Compulsory Modules</strong></td>
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<td>GG2023 Geography Student Seminars</td>
<td>10</td>
<td>TSM &amp; PSG</td>
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<td></td>
<td></td>
<td>GG2024 Physical Geography: Changing Environments</td>
<td>10</td>
<td>NS, TSM &amp; PSG</td>
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<tr>
<td></td>
<td></td>
<td>GG2025 Human Geography: Changing Worlds</td>
<td>10</td>
<td>NS, TSM &amp; PSG</td>
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<td><strong>Compulsory Modules</strong></td>
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<td></td>
<td></td>
<td>GG3028 Advanced Research Methods in Geography I (S2)</td>
<td>5</td>
<td>NS &amp; TSM, PSG*</td>
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<tr>
<td></td>
<td></td>
<td>GG3056 History and Philosophy of Geography (S1)</td>
<td>5</td>
<td>NS &amp; TSM (PSG Optional)</td>
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<td><strong>Optional Modules</strong></td>
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<td>GG3015 Globalisation (S2)</td>
<td>5</td>
<td>NS, TSM &amp; PSG</td>
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<td></td>
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<td>GG3025 Advanced Research Methods in Geography II (S1)</td>
<td>5</td>
<td>NS &amp; TSM, PSG*</td>
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<td>GG3030 Environmental Governance I (S2)</td>
<td>10</td>
<td>NS, TSM &amp; PSG</td>
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<td>GG3033 Geographical Information: Data &amp; Tools (S2)</td>
<td>5</td>
<td>NS, TSM &amp; PSG</td>
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<td></td>
<td></td>
<td>GG3034 Practical Physical Geography (S1)</td>
<td>5</td>
<td>NS, TSM &amp; PSG</td>
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<td>GG3037 Urban Structure and Regeneration (S1)</td>
<td>5</td>
<td>NS, TSM &amp; PSG</td>
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<td>GG3039 Exploring the sustainable city (S1)</td>
<td>5</td>
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<td>GG3053 Deserts of Our Solar System (S1)</td>
<td>5</td>
<td>NS, TSM &amp; PSG</td>
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<td>GG3475 Glacial Geomorphology (scheduled AY 2017-18 S1)</td>
<td>10</td>
<td>NS, TSM &amp; PSG</td>
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<td>GG3477 Human Origins (scheduled AY 2017-18 S2)</td>
<td>10</td>
<td>NS, TSM &amp; PSG</td>
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<td>GG3478 Periglacial Geomorphology (scheduled AY 2018-19 S1)</td>
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<td>NS, TSM &amp; PSG</td>
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<td>GG3479 Quaternary Oceans &amp; Climate (scheduled AY 2018-19 S2)</td>
<td>10</td>
<td>NS, TSM &amp; PSG</td>
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<td><strong>Compulsory Modules</strong></td>
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<td>GG4030 Geography Dissertation (S1 &amp; 2)</td>
<td>20</td>
<td>NS, TSM B &amp; C, PSG*</td>
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<td><strong>Optional Modules</strong></td>
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<td>GG3475 Glacial Geomorphology (scheduled AY 2017-18 S1)</td>
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<td>GG3477 Human Origins (scheduled AY 2017-18 S2)</td>
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<td>NS, TSM &amp; PSG</td>
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<td>GG3478 Periglacial Geomorphology (scheduled AY 2018-19 S1)</td>
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<td>GG3479 Quaternary Oceans &amp; Climate (scheduled AY 2018-19 S2)</td>
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<td>GG4026 Environmental Governance II (S2)</td>
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<td>GG4036 Globalisation &amp; African Development (S2)</td>
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<td>GG4062 Spatial Analysis using GIS (S2)</td>
<td>5</td>
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<td>GG4066 Historical Geography I (S1)</td>
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<td>GG4069 Urban Geography: Cities, space and culture (S2)</td>
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<td>GG4070 Stormy Geomorphology (S1)</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 Freshman (Year 1)

NS Students may opt to take:
GG1024 - Introduction to Geography I: Physical Geography & Earth System Science
and/or
GG1025 - Introduction to Geography II: Environmental Geography

TSM & PSG Students must take all three introductory modules in Geography:
GG1024 - Introduction to Geography I: Physical Geography & Earth System Science
GG1025 - Introduction to Geography II: Environmental Geography
GG1026 - Introduction to Geography III: Human Geography

<table>
<thead>
<tr>
<th>GG1024 Introduction to Geography I: Physical Geography &amp; Earth System Science</th>
<th>10 ECTS credits</th>
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Module Co-Ordinator: Professor Robin Edwards (robin.edwards@tcd.ie)

Type: Compulsory (TSM, ES, PSG); Optional (NS)

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 you 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
- Apply an Earth Systems approach to describe the phenomena of environmental and climate change
- Identify how human activities modify Earth System function

Assessment: Continuous Assessment [100%] comprising: two in-course assignments [25% each]; and two 1-hour on-line multiple choice tests [25% each].

Module Breakdown: Lectures (22 hrs); Set reading, activities and independent study (200 hrs); Assessed work (28 hrs). Total = 250 hrs.

Key Texts:
GG1025 Introduction to Geography II: Environmental Geography  10 ECTS credits

Module Co-ordinator: Professor Patrick Bresnihan (pbresnih@tcd.ie)

Type: Compulsory (NS, TSM, ES, PSG)

Outline: This module will introduce key concepts relating to nature, society and the environment as well as examining interactions between humans and their environment using case studies from the fields of resource exploitation, environmental degradation and natural hazards.

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

- Define environmental geography and describe foundational concepts and issues relating to the human-environment interface
- Describe and analyse select cases of environmental degradation derived from human-environment interactions
- Identify and evaluate human-environmental relations within select cases of environmental hazards
- Identify and evaluate a range of sources and materials for analysing human-environment relations

In terms of transferable skills, students will be expected to have:

- Developed their writing skills in terms of researching and writing both essays and a weekly environmental issues journal
- Developed their abilities to synthesise and evaluate material presented during the module

Assessment: Coursework 70% (2 written assignments: environmental journal (3000 words) plus essay/report); Online MCQ examination 30% (1 hour exam).

Module Breakdown: Contact Hours (Lectures/seminars = 20 hrs); Additional Input (Lecture/Seminar preparation = 50hrs; Essay preparation = 100hrs; Revision/Examination = 100hrs). TOTAL = 250.

Key texts:

Harris, F. (2012) Global environmental issues (2nd ed.) Wiley, Chichester
GG1026 Introduction to Geography III: Human Geography 10 ECTS credits

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

Type: Compulsory (TSM, PSG)

Outline: This module aims to provide students with an understanding of the development of the discipline of Geography, its philosophical bases and methodological practices, and to introduce them to a number of the key elements of human geography with which they will deal in greater depth in later years. It is divided into three sections.

The first provides an introduction to the evolution of the discipline of geography within the development of rational scientific modes of enquiry. The second focuses on global urbanisation and its problems.

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 in economic geography and, in doing so, to equip them 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 impact of global forces on local areas.

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

- Describe the evolution of the discipline with respect to the philosophical bases which have contributed to its development, the range and changing character of methodological approaches and the foci of geographical enquiry;
- Recognise the problems associated with defining urban areas and the different cultural definitions of what is understood by the term ‘urban’;
- Describe the main theories which attempt to explain the appearance of the first urban settlements;
- Identify how urbanisation occurs, why urbanisation is a global phenomenon and recognise the forces underlying the growth of urban settlements;
- Identify the structural and personal influences on migration from rural to urban areas;
- Explain the economic and cultural factors differentiating European urbanisation in the nineteenth century from contemporary urbanisation in the Third World;
- Describe ‘primacy’ in urban hierarchies and explain the reasons why such distributions may arise;
- Describe the nature of housing problems in Third-World cities and evaluate the range of policies which have been adopted to address them;
- 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:

Section 1
Massey, D. & Allen, J. (eds.): Geography Matters (Cambridge Univ. Press, 1984)

Section 2
Dwyer, D.J.: People and Housing in Third-World Cities. (Longman, Harlow, 1979)

Section 3
Dicken, P.: Global Shift (Sage, London, 2003 & subsequent editions)
Sokol, M., Economic Geographies of Globalisation: A Short Introduction, Cheltenham (Edward Elgar. 2011)
Senior Freshman (Year 2)

Please note that GG1024 and/or GG1025 are compulsory requirements for taking any Geography Senior Freshman modules.

**NS Students** take two 10 credit modules:
- GG2024 – Physical Geography: Changing Environments
- GG2025 – Human Geography: Changing Worlds

**TSM & PSG Students** take three 10 credit modules
- GG2023 – Geography Student Seminars
- GG2024 – Physical Geography: Changing Environments
- GG2025 – Human Geography: Changing Worlds

### GG2023 Geography Student Seminars 10 ECTS credits

**Module Co-ordinator:** Professor 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:**
GG2024 Physical Geography: Changing Environments  10 ECTS credits

Module Co-ordinator: Professor Mary Bourke (bourkem4@tcd.ie)

Type: Compulsory (NS, TSM & PSG)

Outline: This module represents a foundation in modern physical geography and is designed to explain and analyse environmental change during the last 2.6 million years (the Quaternary period). The module will take a number of key elements of contemporary environmental change and analyse modern process, past records and archives of environmental change. Elements of the course are designed to prepare students for Sophister physical geography modules.

Fluvial Geomorphology: Fluvial processes and landforms including fluvial hydraulics and sediment transport, bedforms, sediments, channel dynamics and long-profile, historic flood events and large-scale catastrophic floods, fluvial sedimentary archives.

Mass-movements: including landslides, slow downslope movement and peat failures. The importance of analysis of large-scale mass-movements is emphasised.

Drylands: The dynamics of geomorphic systems in global drylands will be examined. In particular, aeolian landforms, sediments, transport processes aeolian sedimentary archives.

Oceans: including submarine landslides; deep ocean sediments as archives of long-term environmental change; sea levels past present and future; and the evolving geography of our planet.

Biogeography: This section of the course will focus on the deeper time dimensions of the dynamics of species distribution by exploring the effects of humans and the response of species to environmental change.

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

- Identify important topics and themes in contemporary physical geography.
- Appraise some of the major current debates in physical geography.
- Illustrate how records of past change can be developed from a range of different environments.
- Explain how an understanding of modern processes is fundamental to our ability to reconstruct the past and predict the future.

Assessment: Continuous Assessment [100%] comprising: two in course assignments [25% each]; and two 1-hour online multiple choice tests [25% each].

Module Breakdown: Lectures (36 hrs); Reading (94 hours); Assessed work (40 hrs). Online exam revision (80 hours). Total = 250 hrs.

Key texts:

GG2025 Human Geography: Changing Worlds  10 ECTS credits

Module Co-ordinator: tba

Type: Compulsory (NS, 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
Junior Sophister (Year 3)

All JS Geography students (NS & TSM) take two compulsory modules comprising a total of 10 credits:

- GG3028 - Advanced Research Methods in Geography I
- GG3012 - 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, for elective modules outside of this core programme (including *Broad Curriculum* modules) 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 (including *Broad Curriculum* modules).
- It is a **TSM requirement** that students balance their modules in each subject equally across both semesters.
- **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)**

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<thead>
<tr>
<th>Module Code</th>
<th>Module Title</th>
<th>ECTS Credits</th>
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<tbody>
<tr>
<td>GG3028</td>
<td>Advanced Research Methods in Geography I</td>
<td>5</td>
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**Module Co-ordinator:** Professor Padraig 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:**


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**GG3056 History and Philosophy of Geography**

**5 ECTS credits**

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

**Type:** Compulsory (NS & TSM); Optional (PSG)

**Pre-requisites:** None

**Outline:** This module, which is restricted to and compulsory for JS Geography students, 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 1/2 hour examination (50%) Answer 2Q/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).

GG3015 Globalisation  5 ECTS credits

Module Co-ordinator: Professor Padraig 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. Particular emphasis is placed on the role of the World Bank and International Monetary Fund, 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 the process through social movements.

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 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: 1.5 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:

GG3025 Advanced Research Methods in Geography II  

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

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

Pre-requisites: None

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

Outline: These are residential field courses held overseas and 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 2017 this module will be completed as a 5 credit residential 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.
GG3030 Environmental Governance I 10 ECTS credits

Module Co-ordinator: Professor Patrick Bresnihan (pbresnih@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: The “environment” emerged as a new object of concern in the 1960s. Over half a century has passed since then and the extent of environmental degradation has only intensified. At the same time, the past fifty years has also seen an explosion in scientific knowledge, public awareness, global summits, environmental regulations, corporate ‘green’ initiatives, and popular cultural depictions of ‘end of the world’ scenarios.

How can we explain this apparent paradox: increased understanding of the problems and yet a world that is ever further from the goal of more equitable and sustainable environments? How can a better understanding of the contested history and development of environmental governance help us in this task? And how can a more historically informed understanding of modern environmental movements help us to develop better responses in the future?

This module will introduce students to the emergence of environmental governance as a unique field of policy-making, scientific inquiry, 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 the 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 in environmental governance 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 approaches to environmental governance 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% (2000 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:
GG3033 Geographical Information: Data & Tools 5 ECTS credits

Module Co-ordinators: tba

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 GG2024 and GG2025

Outline: This module explores how to identify, create and use geographic data and tools. The object of the module 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; indentify 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:

GG3034 Practical Physical Geography 5 ECTS credits

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

Type: Optional (NS, TSM & PSG)

Pre-requisites: Students considering a physical geography dissertation in SS year (Geography/ Earth Science students only)

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

GG3037: Urban Economic Structure & Regeneration 5 ECTS credits

Module Co-ordinator: Professor Cian O’Callaghan (ocallac8@tcd.ie)
Type: Optional (NS, TSM & PSG)
Pre-requisites: None

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 (35%) & 2-hour examination (65%) answering 2 questions from 4.

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

GG3039: Exploring the sustainable city 5 ECTS credits

Module Co-ordinator: Professor 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:

GG3053 Deserts of our Solar System 5 ECTS credits

Module Co-ordinator: Professor Mary Bourke (bourkem4@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: GG2024

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.
Trinity Geography

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:

GG3475 Glacial Geomorphology (scheduled for year 2017-2018) 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 field course (one or two days) sometime in November (probably November 11th and 12th 2017). You will need to keep this time slot free as well as the following weekend (due to tides).

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%).
GG3477 Human Origins (scheduled for year 2017-2018)  10 ECTS credits

Module Co-ordinator: Professor Robin Edwards (robin.edwards@tcd.ie)
Type: Optional (NS, TSM & PSG)
Prerequisites: GG1024; GG2024

Outline: This module provides a general introduction to the field of palaeoanthropology with particular focus on the contributions made by Earth Scientists to the study of the origins of our species. The module will examine how diverse lines of evidence from subjects such as archaeology, anatomy and genetics, can be combined to examine the changing relationships between humans and their environment. It will introduce the world of our ancestors and evaluate the science behind stories of popular interest such as Neanderthals, “hobbits”, and the rise and spread of our species, Homo sapiens.

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

- Outline human evolution during the Quaternary with reference to issues of speciation, extinction, and climate change;
- Illustrate how stratigraphy, geochronology and palaeoenvironmental reconstruction are applied in palaeoanthropological research;
- Discuss the potential role of environmental change in the evolving biogeography of humans, with particular reference to the timing and mechanisms of dispersal and colonisation;
- Employ a multidisciplinary approach that evaluates data of varying quality and quantity, synthesises contrasting types of information, and deals with differing levels of uncertainty.

Assessment: Examination (50%); Course Work (50%)

GG3478 Periglacial Geomorphology (scheduled for year 2018-2019)  10 ECTS credits

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

Outline: This course covers the regions of the world that experience at present (or have experienced in the past) permanently frozen ground or processes associated with frost action.

The processes producing a variety of landforms of all scales are looked at in detail and a pervading theme in the course is the identification and significance of fossil periglacial features in the landscape.

Topics covered include: climatic zones, freeze-thaw cycles, permafrost, ground-ice, frost action, patterned ground, hardware modelling of processes, ice-mounds, thermokarst, man and periglacial regions, slopes, fluvial processes, fossil periglacial features in Europe, USA, Britain and Ireland.
Learning Outcomes: On successful completion of this module students will be able to:

- Have gained a basic knowledge of cold climate regions and processes
- Have gained a knowledge of Ireland’s periglacial history
- Have gained a knowledge of modern periglacial geomorphology
- Recognise the importance of the study of periglacial geomorphology

Assessment: 2 Hour Examination (60%) Answer 2Q/5 + coursework to include laboratory write up and essay (40%)

| GG3479 Quaternary Oceans & Climate (scheduled for year 2018-2019) | 10 ECTS credits |

Module Co-ordinator: Professor Robin Edwards (robin.edwards@tcd.ie)

Type: Optional for JS and SS (AY 2016-17)

Prerequisites: GG1024; GG2024; GG3034

Outline: The oceans play a pivotal role in the Earth’s climate system, both as agents and archives of change. This module provides an overview of ocean – climate relationships with a focus on the Quaternary period (the last 2.6 million years of Earth history). It considers the drivers of glacial-interglacial climate change, ice sheet-ocean interactions, sea-level change and the use of foraminifera as environmental proxies. Teaching will comprise lectures and laboratory practical classes, providing students with both theoretical and hands-on experience working with foraminifera and quantitative palaeoenvironmental data.

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

- Outline the physical and chemical characteristics of the ocean and their significance for the Earth’s climate system
- Illustrate how marine proxy data are used to infer past climates and environmental conditions
- Compare and contrast ‘orbital’ and ‘sub-orbital’ scale climate change during the Quaternary with reference to driving mechanisms and feedback systems
- Discuss the causes and effects of sea-level change
- Use foraminifera-based proxy data to investigate aspects of Quaternary environmental change

Assessment: 2 hour Examination (50%), Course work (50%)
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 (including Broad Curriculum modules) 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 (including Broad Curriculum modules) if they have not already done so during Year 3.
Pattern A students cannot undertake a Geography Dissertation.

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 agreed elective modules outside of this core programme (including Broad Curriculum modules) if they have not already done so during Year 3.

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 TSM requirement that students balance their modules in each subject equally across both semesters.

GG4030 Geography Dissertation

Module Co-ordinator: Professor Padraig Carmody (carmodyp@tcd.ie)

Type: Compulsory (NS, TSM B & C, also PSG students taking Geography as a single subject in Year 4)
Note - Not available to TSM Pattern A students or to PSG students taking both subjects in their final year

Pre-requisites: GG3028

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 GG3028 Advanced Research Methods in Geography I. 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 at:

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**

<table>
<thead>
<tr>
<th>GG3475 Glacial Geomorphology (scheduled for year 2017-2018)</th>
<th>10 ECTS credits</th>
</tr>
</thead>
</table>

**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 field course (one or two days) sometime in November (probably November 11th and 12th 2017). You will need to keep this time slot free as well as the following weekend (due to tides).

**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%).
GG3477 Human Origins (scheduled for year 2017-2018) 10 ECTS credits

Module Co-ordinator: Professor Robin Edwards (robin.edwards@tcd.ie)

Type: Optional (NS, TSM & PSG)

Prerequisites: GG1024; GG2024

Outline: This module provides a general introduction to the field of palaeoanthropology with particular focus on the contributions made by Earth Scientists to the study of the origins of our species. The module will examine how diverse lines of evidence from subjects such as archaeology, anatomy and genetics, can be combined to examine the changing relationships between humans and their environment. It will introduce the world of our ancestors and evaluate the science behind stories of popular interest such as Neanderthals, “hobbits”, and the rise and spread of our species, Homo sapiens.

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

- Outline human evolution during the Quaternary with reference to issues of speciation, extinction, and climate change;
- Illustrate how stratigraphy, geochronology and palaeoenvironmental reconstruction are applied in palaeoanthropological research;
- Discuss the potential role of environmental change in the evolving biogeography of humans, with particular reference to the timing and mechanisms of dispersal and colonisation;
- Employ a multidisciplinary approach that evaluates data of varying quality and quantity, synthesises contrasting types of information, and deals with differing levels of uncertainty.

Assessment: Examination (50%); Course Work (50%)

GG3478 Periglacial Geomorphology (scheduled for year 2018-2019) 10 ECTS credits

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

Type: Optional (NS, TSM & PSG)

Pre-requisites: None

Outline: This course covers the regions of the world that experience at present (or have experienced in the past) permanently frozen ground or processes associated with frost action. The processes producing a variety of landforms of all scales are looked at in detail and a pervading theme in the course is the identification and significance of fossil periglacial features in the landscape. Topics covered include: climatic zones, freeze-thaw cycles, permafrost, ground-ice, frost action, patterned ground, hardware modelling of processes, ice-mounds, thermokarst, man and periglacial regions, slopes, fluvial processes, fossil periglacial features in Europe, USA, Britain and Ireland.

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

- Have gained a basic knowledge of cold climate regions and processes
- Have gained a knowledge of Ireland’s periglacial history
- Have gained a knowledge of modern periglacial geomorphology
- Recognise the importance of the study of periglacial geomorphology

Assessment: 2 Hour Examination (100%) Answer 2Q/5
GG3479 Quaternary Oceans & Climate (scheduled for year 2018-2019) 10 ECTS credits

Module Co-ordinator: Professor Robin Edwards (robin.edwards@tcd.ie)

Type: Optional for JS and SS (AY 2016-17)

Prerequisites: GG1024; GG2024; GG3034

Outline: The oceans play a pivotal role in the Earth’s climate system, both as agents and archives of change. This module provides an overview of ocean – climate relationships with a focus on the Quaternary period (the last 2.6 million years of Earth history). It considers the drivers of glacial-interglacial climate change, ice sheet-ocean interactions, sea-level change and the use of foraminifera as environmental proxies. Teaching will comprise lectures and laboratory practical classes, providing students with both theoretical and hands-on experience working with foraminifera and quantitative palaeoenvironmental data.

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

- Outline the physical and chemical characteristics of the ocean and their significance for the Earth’s climate system
- Illustrate how marine proxy data are used to infer past climates and environmental conditions
- Compare and contrast ‘orbital’ and ‘sub-orbital’ scale climate change during the Quaternary with reference to driving mechanisms and feedback systems
- Discuss the causes and effects of sea-level change
- Use foraminifera-based proxy data to investigate aspects of Quaternary environmental change

Assessment: 2 hour examination (50%), course work (50%)

GG4026 Environmental Governance II 10 ECTS credits

Module Co-ordinator: Professor Patrick Bresnihan (pbresnih@tcd.ie)

Type: Optional (NS, TSM & PSG)

Pre-requisites: GG3030 Environmental Governance I

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 environmental governance.

The module will consist of weekly interactive lectures/seminars, guest lectures, and set readings. While each class will focus on a specific debate or conflict the module develops key analytic skills and approaches over the semester. Class attendance is thus essential.
Learning Outcomes: On successful completion of this module students will be able to:

- Be able to discuss the key political and theoretical debates taking place within the field of environmental governance;
- Be able to identify some of the key sites of environmental contestation today and why they are so contested;
- Have developed a clear understanding of why environmental change and environmental governance need to be understood from a multi-disciplinary and political ecological perspective.

Assessment: Coursework = 30%; Research project/presentation = 50%; 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.

GG4036 Globalisation & African Development 5 ECTS credits

Module Co-ordinator: Professor Padraig 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: 1.5 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:

Africa Emerges by Robert Rotberg (Cambridge, Polity, 2013)
GG4061 Understanding Environmental Change  |  10 ECTS credits

Module Co-ordinator: Professor 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 analyze conflicting arguments on the issues of environmental change
- Examine and evaluate public policy aimed at coping with environmental change

Assessment: 1.5 hour Examination (50%) Answer 3Q/5 and CA (50%). CA includes: Homework - two individual quiz/short essay papers (10% each); two group oral presentations and researched class debates (10% each); One individual extended (4000 words) essay (10%)

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

Recommended Reading:

- Climate Change 2013: The Physical Science basis. Available online at: http://www.ipcc.ch
GG4062 Spatial Analysis using GIS 5 ECTS credits

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

Type: Optional (NS, TSM and PSG)

Prerequisite: GG3033

Note: Places on this module are limited to 10. In the case of oversubscription, places will be allocated on the basis of student performance in GG3033.

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 Introduction to Advanced Spatial Analysis using GIS module is designed to introduce the student to spatial analysis using a Geographic Information Systems (GIS) platform and guide her/him through the learning process of advanced ArcGIS extensions dedicated to network analysis, spatial data mining and environmental phenomena modelling.

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.
- Consult and work with experts in various fields in the realisation of a product or system.
- Describe succinctly, the relevant advantages and disadvantages of various technologies to a lay audience, and to communicate effectively in public.

Assessment: Course work (100%)

GG4066 Historical Geography I 5 ECTS credits

Module Co-ordinator: Professor 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 principal 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:**
H. B. Clarke, M. Hennessy and J. Prunty (Eds.), *Surveying Ireland’s Past*, (Dublin, 2004).
GG4069 Urban Geography: Cities, space and culture 10 ECTS credits

Module Co-ordinator: Professor 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: Examination (50%); coursework (essay and project 50%)

Module Breakdown: Contact Hours (Lectures = 30 hrs; Seminars = 12 hrs; Fieldtrip = 2 hrs); Additional Inputs (Reading and preparation for class discussions; Essay; Project. examination = 228 hrs).
TOTAL = 250 hrs.

Key Texts:
Module Co-ordinator: Professor Mary Bourke (bourkem4@tcd.ie)

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

Pre-requisites: None

This is a 5-day field residential course in Ireland.

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.

In all cases, the end-of-year Geography mark is calculated according to the relative CREDITS 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. 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 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 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 circulated by email and/or via the Geography Noticeboard.
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.

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<thead>
<tr>
<th>Mark Range</th>
<th>Indicative Grade</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A++</td>
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<tr>
<td>80-89</td>
<td>A+</td>
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<tr>
<td>70-79</td>
<td>A</td>
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<td>65-69</td>
<td>B+</td>
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<td>40-44</td>
<td>D</td>
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<td>&lt;40</td>
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- **Submission of Assessed 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 freshman 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, attendance is important since both years generally contribute directly to your final degree mark.

Attendance at assessments is compulsory in all years. Therefore students are to be available during term and certainly during the teaching term. However, if a reasonable case is made, staff can make special arrangements for students regarding assessments. Each case will be considered on its merits and there would have to be an exceptional case in order for alternative arrangements to be made.

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

The penalties for late or non-submission of course work are outlined in section 4. Examinations and Assessment of this handbook.

The Undergraduate Studies website contains further information concerning the academic regulations governing study at Trinity College.
• Deadlines and Penalties for Late Submission

You must ensure that you are available to submit course work by the deadline.

In the event of late submission of any course work, a penalty of -5% per day or part thereof will be applied to the mark for that piece of work up to a maximum of four working days, after which a zero mark will be given.

An 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:

(i) 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 familiarize yourself with the Calendar entry on plagiarism and the sanctions which are applied.

(ii) 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.

(iii) 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 - http://www.tcd.ie/Geography/undergraduate/)

(iv) 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:

(i) fail to distinguish between their own ideas and those of others;
(ii) fail to take proper notes during preliminary research and therefore lose track of the sources from which the notes were drawn;
(iii) 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;
(iv) 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:

(i) 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.

(ii) 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.

(iii) 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:

1. 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.

2. 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).”

3. 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...”.

4. 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).”
5. 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).

6. 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)

7. 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 guide on the Freeman Library website:
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>
</thead>
<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></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></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></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></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></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></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></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>85-100</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>70-84</td>
<td>A very good 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 falling short of excellence in each and every aspect.</td>
</tr>
<tr>
<td>II-1</td>
<td>60-69</td>
<td>A good project report which shows a reasonably good understanding of the problem and some knowledge of the relevant literature. Mostly sound presentation and analysis of results but with occasional lapses. Some 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>

*Surveying vegetation for final year research project*
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:** geog@tcd.ie  
**Tel:** +353-(0)1 896 1576  
**Executive Officers:** Mary Forde  
Mary-Pat O’Sullivan

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**

**Professor Mary Bourke, BA, MA (U.C.D.), 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

**Professor Patrick Bresnihan, B.A. (Dublin), MPhil (Cambridge), Ph.D. (Dublin)**  
**Research Interests:** Political ecology and environmental infrastructures with a particular focus on water and energy.  
**Contact:** pbresnih@tcd.ie

**Professor Pádraig Carmody, B.A. (Dublin), M.Sc. (Dublin), Ph.D. (Minnesota), F.T.C.D.**  
**Research Interests:** Development and economic geography, political economy, globalisation, Africa.  
**Contact:** carmodyp@tcd.ie

**Professor Peter Coxon, B.Sc. (Sussex), Ph.D. (Cantab.), F.T.C.D.**  
**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

**Professor Federico Cugurullo, BA, MA (Cagliari), Ph.D. (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, B.A. (Cantab.), M.Sc. (Oxf. Brookes), Ph.D. (Cantab.), F.T.C.D.**  
**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:** daviaesa@tcd.ie

**Professor Robin Edwards B.Sc. (Southampton), Ph.D. (Dunelm)**  
**Research Interests:** Sea level change & climate; foraminifera; quantitative palaeoenvironmental reconstruction; oceanography; coastal change; environmental archaeology.  
**Contact:** robin.edwards@tcd.ie
Professor Mark Hennessy, B.A. (N.U.I.), M.A. (Dublin), Ph.D. (N.U.I.)
Research Interests: Historical geography; history and philosophy of geography; history and theory of cartography; Australasia.
Contact: mhnnessy@tcd.ie

Professor Susan P. Murphy, BA, MA, Ph.D. (U.C.D.)
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.murphy@tcd.ie

Professor 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

Professor Carlos Rocha, B.Sc. (Lisbon). Ph.D. (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

Professor Martin Sokol, Ing.arch (Bratislava), MA. (Grenoble), Ph.D. (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.

Role: Librarian (Freeman Library)
Contact: marrong@tcd.ie

Elaine Treacy, B.A. (Dublin), Ph.D. (Dublin)
Role: Senior Technical Officer – Palynology and Geomorphology laboratories; Safety Officer
Contact: treacyel@tcd.ie
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 any non-hazardous laboratory work. The Palynology Laboratory is used for all work that requires the use of hazardous chemicals but mainly for research projects. Hazardous chemical training and a lab induction must be undertaken and the Senior Technical Officer, Elaine Treacy must be consulted before undertaking laboratory work.

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 safety information for the discipline including risk assessments, policies and forms.

Undergraduates should familiarise themselves with the regulations and safety information regarding the facilities within 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), you are responsible for your own safety and that of your fellow students. All safety protocols and instructions outlined by the staff in charge of a class/laboratory practical/fieldtrip must be adhered to.

- Emergencies

Situations which may require emergency response may include:
  - Fire
  - Emergency evacuation due to bomb alerts, gas leaks, chemical spills, biological or radioactive incidents.
  - Serious accidents 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.
• **Laboratory Safety**

Laboratory protocols exist for each of the laboratories within the Discipline of Geography. These protocols are available in the discipline safety statement which is available at [https://www.tcd.ie/Geography/local/](https://www.tcd.ie/Geography/local/). Laboratory protocol must be signed off before using any of the laboratories.

  - **Field 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. The manual is available at [https://www.tcd.ie/Geography/local/](https://www.tcd.ie/Geography/local/). Undergraduate students and postgraduate students must firstly discuss the proposed fieldwork with their academic supervisor and have their supervisors consent prior to undertaking any fieldwork. A **risk assessment** must be undertaken before embarking on any fieldwork and this risk assessment must be signed by the Supervisor and the Head of Discipline. The Discipline of Geography Fieldwork Safety Manual and the Fieldwork Risk Assessment Form are available from the Discipline Safety Officer, Elaine Treacy, as well as on the Discipline of Geography webpage [https://www.tcd.ie/Geography/local/](https://www.tcd.ie/Geography/local/). All students must fill out the Faculty of Engineering Mathematics and Science health and safety forms as well as the Discipline of Geography Fieldtrip Safety Form. These forms are available from the document holder outside the Discipline of Geography office or from the Senior Technical Officer, Elaine Treacy. All forms should be returned to the Executive Officers.

  - **Fire Safety**

  The Fire Wardens for the Discipline of Geography are Elaine Treacy (Room B8) and Terry Dunne (Room 2.13). 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. Note the position of the nearest fire exit to your work area. 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 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 the Senior Technical Officer, Elaine Treacy, so the items can be replaced.
The occupational first aiders for the discipline are Elaine Treacy (Room B8) and Gillian Marron (Freeman Library). The two occupational first aiders also hold fully stocked first aid kits in their offices.

All accidents must be reported to the Discipline Safety Officer, Elaine Treacy, and entered in the accident book which is kept in room B8. 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.

- **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 the Security Office at Front Gate (Ext 1317/1999).
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, a number of PC computers linked into the College network and to the Internet are available for student use. Students may find information for their assignments and dissertations by searching databases, electronic journals and Web sites.

An on-line catalogue of the library’s contents permits efficient searching for information. [http://www.tcd.ie/Geography/GeographyWebsite/Freeman](http://www.tcd.ie/Geography/GeographyWebsite/Freeman).

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).

All students who wish to use the Freeman Library must complete a membership card and keep the librarian informed of any subsequent change of address. Normal library rules apply in both the map room and the reading room (i.e. no eating, drinking or talking). Computers in the Freeman Library are for use by students wishing to access computerised library catalogues and Internet-based information sources. They are not to be used for e-mail or word processing.

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 by e-mail (marrong@tcd.ie) or call in 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 CREDITS of specialist taught modules followed by an independent research project worth 30 CREDITS.

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 headquartered at the Earth Institute, 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.