



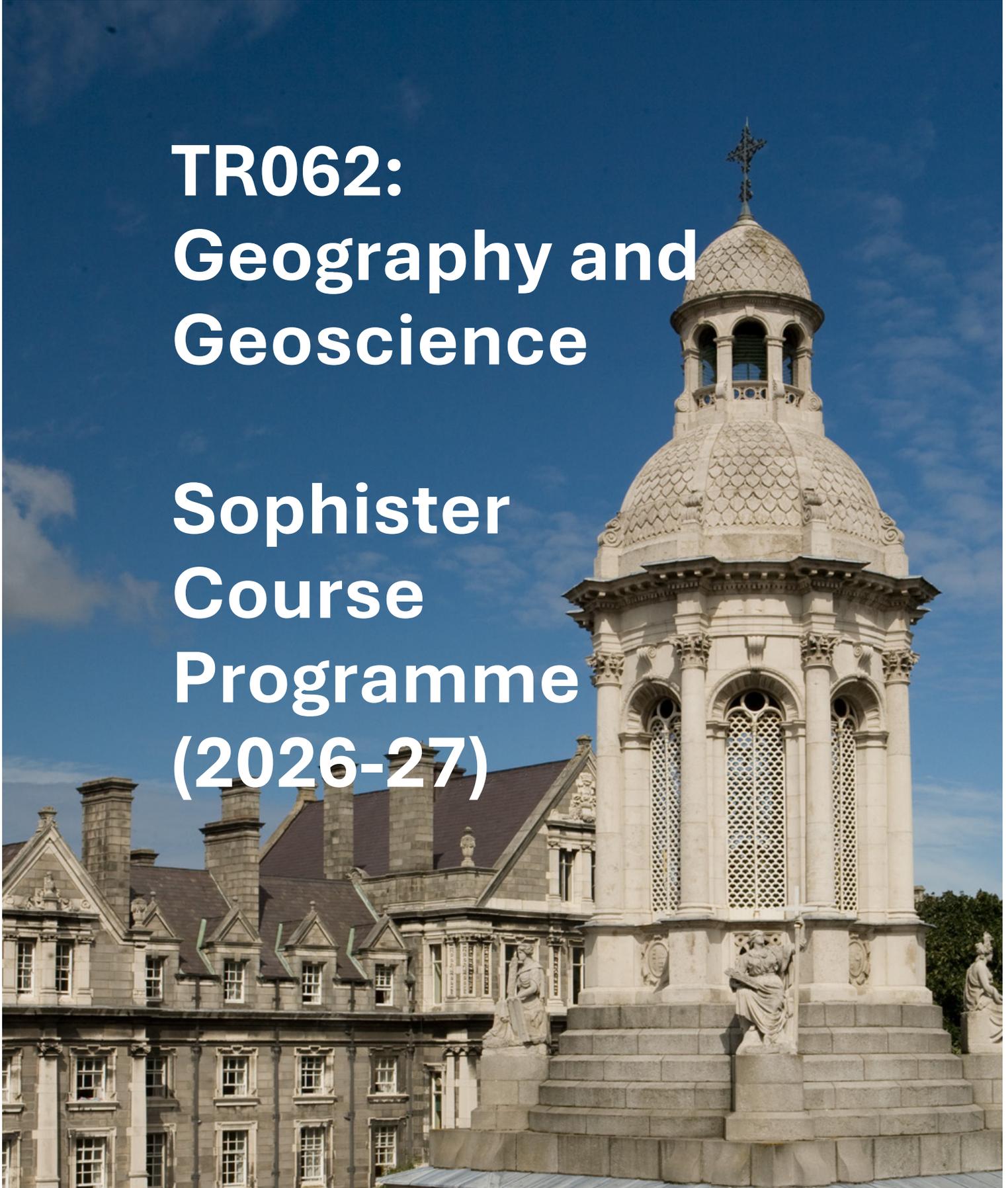
Trinity College Dublin

Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

TR062: Geography and Geoscience

Sophister Course Programme (2026-27)



This programme booklet applies to all student taking **TR062: Geography and Geoscience**. It provides a guide to what is expected of you on this programme and the supports available to you. Please retain for future reference.

The information provided is correct at the time of publication. Any necessary revisions will be notified to students via email and the TR062: Geography and Geoscience webpage: <https://www.tcd.ie/science/undergraduate/tr062-geography-and-geosciences/junior-sophister/>

In the event of any conflict or inconsistency between the General Regulations published in the University Calendar and the information provided in this course programme, the general college regulations will prevail:
<https://www.tcd.ie/media/tcd/calendar/undergraduate-studies/general-regulations-and-information.pdf>

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TABLE OF CONTENTS

WELCOME	2
FOREWORD	3
INTRODUCTION.....	4
DESCRIPTION OF ECTS SYSTEM	5
ALLOCATION OF PLACES	6
COURSE ADVISORS:.....	7
MODERATORSHIP QUOTAS	7
TIMELINE OF EVENTS	8
TRINITY ELECTIVES.....	8
JUNIOR SOPHISTER EXAMINATION INFORMATION	10
ASSESSMENT REGULATIONS.....	10
ACADEMIC INTEGRITY POLICY	11
GUIDANCE ON THE USE OF AI AND GENERATIVE-AI IN COLLEGE	11
TR062: GEOGRAPHY AND GEOSCIENCE - BA MOD IN SCIENCE (GEOGRAPHY)	13
GEOGRAPHY LEARNING OUTCOMES.....	13
TR062 GEOGRAPHY JUNIOR SOPHISTER PROGRAMME.....	14
<i>Pathway A</i>	15
<i>Pathway B</i>	16
TR062 GEOGRAPHY SENIOR SOPHISTER PROGRAMME	17
TR062: GEOGRAPHY AND GEOSCIENCE - BA MOD IN SCIENCE (GEOSCIENCES)	18
GEOSCIENCE LEARNING OUTCOMES.....	18
TR062 GEOSCIENCE JUNIOR SOPHISTER PROGRAMME.....	19
<i>Earth System Science Pathway</i>	20
<i>Geology Pathway</i>	21
TR062 GEOSCIENCE SENIOR SOPHISTER PROGRAMME	22
<i>Earth System Science Pathway</i>	22
<i>Geology Pathway</i>	23
TR062 JUNIOR SOPHISTER MODULES	24
TR062 SENIOR SOPHISTER MODULES	41
GRADUATE ATTRIBUTES.....	57
IMPORTANT INFORMATION	58
PROGRESSION AND AWARDS.....	58
ATTENDANCE	58
ASSESSMENT: PROCEDURES FOR THE NON-SUBMISSION OF COURSEWORK AND ABSENCE FROM EXAMINATIONS	58
STUDENT SERVICES	59
USEFUL COLLEGE WEBSITES:	60
DATES TO NOTE.....	61
TEACHING TERM DATES 2026-27	61
APPENDIX 1	62

Welcome

Dear Students

Congratulations – you are nearing the end of the Freshman years of your degree and are ready to make the important decision about which science Moderatorship you wish to pursue. The Freshman course structure has given you an excellent grounding in your core subject to prepare you for the advanced material you will cover in your Sophister years. You have also had opportunities to take open modules in other science subjects that have given breadth and context to your science education.

Development of educational breadth continues in the Sophister years via the opportunity to take further open modules and also Trinity Electives. Trinity Electives are stand-alone, College-wide modules that enable you to broaden your knowledge outside of your chosen subject. There is a wide range of choice available to you that encompasses languages and cultures, key societal challenges and Trinity’s ground-breaking research activities. A list of the modules can be found at this link (<https://www.tcd.ie/trinity-electives/electives/>).

Having the opportunity to develop these broader skills, particularly in communication and presentation, will allow you to derive the greatest benefits from your particular choice of Moderatorship subject and will give you important insights into other subjects and modes of scholarship outside of the sciences.

I wish you the very best in your Sophister years and look forward to seeing your future successes and achievements.

Professor Andrew Jackson
Associate Dean of Undergraduate Science Education

IMPORTANT NOTE:

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

<https://www.tcd.ie/calendar/undergraduate-studies/general-regulations-and-information.pdf>

Foreword

The purpose of this booklet is to provide you with information on modules that will be available to you in the Sophister (3rd and 4th) years in Geography and Geoscience. For those of you who entered the TR062 Geography and Geoscience programme, you now have to decide which Moderatorship subject (degree course) you wish to study. For some this will be very easy, because you have known from entry which course you wish to follow. For others, the decision may require a bit more thought and this booklet is designed to furnish you with all the information you need to make your choice.

The TR062 programme is designed so that many sophister modules are available to students from both Moderatorships, reflecting the closely aligned nature of Geography and Geoscience. The distinctive nature of the two courses comes from the combination of subject material that can be taken alongside these shared modules. If you have developed an interest in studying Geography, spanning the physical, human and environmental aspects of the discipline, you are advised to select the Moderatorship in Geography. This will give you access to a wider range of Geography modules than are available to those selecting Geoscience, permitting you to pursue a broad programme in Geography or to specialise in a particular sub-field of the discipline.

If your interests are more aligned with studying the physical, chemical and biological mechanisms of Earth system functioning, extending from contemporary processes through to those operating over deep time, you are advised to select the Geoscience Moderatorship. Within the Geoscience Moderatorship, students will have the option of two pathways; A Geology Path will provide you with the foundations of earth processes and how they relate to the evolution of our Planet and Solar system as well as Society's relationship with our lithosphere from the perspective of natural hazards and resources; An Earth Systems Science Path will give you access to a wider range of Geoscience and Geography modules than are available for those selecting Geology, allowing you to pursue a broad programme that may focus surficial processes, climate and environment.

These moderatorships have been designed to provide you with the skills and experience necessary to fulfil a future career in Geography and Geoscience. I wish you well over the next two years, whatever choices you make, and I trust you will maintain the tradition we have of producing the very highest quality of Science graduates.

Dr Sean McClenaghan
Director of the TR062 Geography and Geoscience Course

Introduction

Sophister courses in Science are organised so that students follow a continuous programme of work over two years leading to a Moderatorship in a particular subject. Each module has a specified credit value, where one credit represents a minimum of 20 hours of student work. This work will comprise a varying balance of contact hours (e.g. time in lectures, practicals or the field), time for independent study and time spent undertaking coursework or examinations. Students take modules to the value of 60 credits in each of the Sophister years.

The Sophister Course Booklet is intended as a guide to the Moderatorships in Geography and Geoscience. More detailed descriptions of module content and assessment requirements will be published in the individual Moderatorship handbooks at the start of each academic year.

Although the information in this handbook is correct at the time of production, the precise content of the Moderatorships is subject to change. While every effort will be made to give due notice of major changes, the Science Course Office reserves the right to suspend, alter or initiate courses, timetables, examinations and regulations at any time.

*****NOTE*** Students should expect to pay fees for mandatory field courses, which can take place in the 1st week of Semester 1 as well as reading week and final week of Semester 2. Fees can range from €500 to €1000 for any given field course and covers field materials, transport, food and lodging.*****

Description of ECTS system

The European Credit Transfer and Accumulation System (ECTS) is an academic credit system based on the estimated student workload required to achieve the objectives of a module or programme of study. It is designed to enable academic recognition for periods of study, to facilitate student mobility and credit accumulation and transfer. The ECTS is the recommended credit system for higher education in Ireland and across the European Higher Education Area.

The ECTS weighting for a module is a **measure of the student input or workload** required for that module, based on factors such as the number of contact hours, the number and length of written or verbally presented assessment exercises, class preparation and private study time, laboratory classes, examinations, clinical attendance, professional training placements, and so on as appropriate. There is no intrinsic relationship between the credit volume of a module and its level of difficulty.

The European **norm for full-time study over one academic year is 60 credits**. Within Undergraduate courses 1 credit represents 20-25 hours estimated student input, so a 10-credit module will be designed to require 200-250 hours of student input including class contact time, assessments and examinations. Within Postgraduate courses 1 credit represents 25 hours estimated student input, so a 10-credit module will be designed to require 200-250 hours of student input including class contact time, assessments and examinations.

ECTS credits are awarded to a student only upon successful completion of the programme year. Progression from one year to the next is determined by the programme regulations. Students who fail a year of their programme will not obtain credit for that year even if they have passed certain components. Exceptions to this rule are one-year and part-year visiting students, who are awarded credit for individual modules successfully completed.

Allocation of Places

The Science Course office coordinates and processes the applications for Junior Sophister places in the TR062: Geography and Geoscience Course. The procedures documented below show students that those places are allocated in a fair, transparent, and efficient manner. The number of places available in each moderatorship is limited by quota. **Allocation is based on the overall mark obtained in the Senior Fresh year** and the order of choice expressed by the student.

The Science Course Office allocates Junior Sophister places. Students cannot be allocated a place by circumventing the Science Course Office and going directly to disciplines. All enquiries regarding the allocation of places, made to disciplines, will be redirected to the Science Course Office via the sophistersco@tcd.ie email address.

Places will be allocated as follows until quotas are reached:

1. All students passing their Senior Fresh year will be placed in **rank order** based on their **overall Senior Fresh year mark**.
2. Students who fail and are required to sit reassessment must reapply for the remaining unfilled places until quotas are reached. Second round forms will be made available via the relevant course page on the Science website: <https://www.tcd.ie/Science/> following publication of the first round.
3. Students who are given permission by the Senior Lecturer to defer assessments and or examinations until the reassessment session may defer a place in their **first** preference only. Following publication of the results, students who pass at the reassessment session will be allocated a place based on the same criteria used in the first-round allocation of places. If the student in this category does not qualify for the deferred place, the Science Course Office will allocate that student a place in one of the subjects available in the second round and the deferred place will be offered to the next qualified student from the first-round allocation.
4. In the event a student fails at the reassessment session, be that a deferred exam or reassessment, and are eligible to repeat the SF year, they can do so in **one** of the following ways:
 - Repeating the year in full on books, such students will be treated in the same way as all other SF students in that year.
 - Students may request permission from the Senior Lecturer, via their tutor, to repeat the year off books taking assessment (**OBA**). Sitting an exam OBA is a repeat examination therefore, such students will be allocated a place in one of the remaining Moderatorships available at the **reassessment session** the following year. Students may not repeat more than 20 credits OBA.
5. Students who have passed in the **first round** who then opt to go 'off books' for the year (**OBN**) rather than take up the place offered, will be allocated a place in the first round along with rising JS students in the following year. Places will **not** be reserved for such students.
6. Students who pass in the second round and opt to go "off books" prior to places being allocated, will be allocated a place at the **reassessment session** in the following year.
7. Results will be available on your personal portal at my.tcd.ie by the stated publication date.
8. Publication of first round JS places will be available through the my.tcd.ie portal once the academic year rollover happens in July.
9. Students are informed by email when the places are published, and the procedures followed are clearly outlined in the email.

Special note: Students who have passed their Senior Freshman year may not repeat the SF year to improve their performance.

Course Advisors:

Moderatorship	Name	Email address
TR062 Programme Director	Dr Sean Mc Clenaghan	mcclens@tcd.ie
TR062 Geography Moderatorship Coordinator	Dr Margaret Jackson	margaret.jackson@tcd.ie
Geoscience Examinations Coordinator	Dr Michael Stock	michael.stock@tcd.ie
Geography Examinations Coordinator	Dr Pete Akers	pete.akers@tcd.ie
TR062 Executive Officer	Déhora Dias	tr062admin@tcd.ie

Moderatorship Quotas

The numbers of places available in each Moderatorship subject is limited by quota as outlined below:

TR062 Geography = 18 places

TR062 Geoscience = 42 places

- Earth System Science Path = 24 Places
- Geology Path = 18 Places

Moderatorship Preference Form

Students are required to complete the choice of subject form. You will rank your subject preferences for e.g. Geography-1, Geoscience -2. The Moderatorship preference form is available online: <https://forms.office.com/e/Cta7ZpnjNt> The closing date for submission of this form is **Friday 17th April 2026**.

Open Module Choice Forms

Students take modules totalling 60 credits in the Junior Sophister year. There are 40 credits of core modules; and 20 credits of open modules spread equally over two semesters in the academic year. The module structure for each individual moderatorship is listed in the following pages. In addition, students can choose one or two (one per semester) 5 credit Trinity Elective modules as shown in the module structure table for each moderatorship subject.

Students can choose their open modules with the help of the Moderatorship Course Advisor following the allocation of moderatorship places. **Open module choice forms will be available from your moderatorship disciplines.**

Students should note that due timetable constraints Open Modules may be delivered via a blended learning approach involving face to face and online teaching for some open modules.

Timeline of events

Date	Trinity Term 2026
7 April 2026 @12noon, M4	TR062 Moderatorship Information Session
17 April 2026	Closing date for submission of Moderatorship Preference Form: https://forms.office.com/e/Cta7ZpnjNt
21 April to 01 May 2026	2025/26 Semester two examinations
29 May 2026	Publication of Science Examination results – mytcd.ie portal
7 July 2026	Publication of Junior Sophister places via my.tcd.ie
13 to 19 September 2026	GLU33027 Field Trip (TR062 Geosciences)

Trinity Electives

The Trinity Electives are a unique feature of your Trinity Education. They are stand alone, College-wide 5 credit modules. They cover a broad range of topics in the arts, humanities, sciences, health and social science, and technology. They are designed to allow students to study topics outside of their core discipline and thus provide breadth in their education. Geosciences students take a minimum of one and a maximum of two (one per semester) Trinity Electives in the Junior Sophister year. Depending on your moderatorship, you will choose a combination of Trinity Electives and Open Modules as described in this handbook.

Choosing your Trinity Elective

The choice of Trinity Elective is student driven. Almost all Trinity Electives are open to all students. However, students of some moderatorships may be precluded from taking certain Trinity Electives (e.g. the module ‘From Planets to the Cosmos’ is not available to TR063 Physical Sciences students, as this topic is part of their core discipline). The list of exemptions is outlined in the Trinity Electives webpage: <https://www.tcd.ie/trinity-electives/>

Selection of Trinity Electives will be made through online enrolment which will open in July 2026, after publication of examination results and allocation of moderatorship places. You will select your Trinity Electives on a first come first served basis through online module enrolment in your TCD portal.

The Trinity Electives website provides full details of each of the Trinity Electives. A list of the Trinity Electives can be found at <https://www.tcd.ie/trinity-electives/>

You need to think carefully about your choice of Trinity Elective as the semester in which you take it (Semester 1, Semester 2 or both) will affect your choice of Open Modules. That is: taking one Trinity Elective in the first semester, restricts you to the open modules in Option 1; taking one Trinity Elective in the second semester, restricts you to the open modules in Option 2 while taking two Trinity Electives, (one in each semester) restricts you to the open modules in Option 3. Please refer carefully to the tables in this handbook.

Open Module Changes

If you wish to change your open module scenario, you must consult the relevant Course Advisor for advice prior to submitting your request.

Closing dates for change of Open Modules/TE's scenarios for Science Students

Semester one: 5pm on Friday 25th September 2026

Semester two: 5pm on Friday 27th November 2026

NOTE: Trinity Elective changes submitted directly to the Academic Registry will not be accepted without the relevant sign off from the Course Advisor.

Junior Sophister Examination Information

Modules are assessed by continuous assessment and/or by examination. The Junior Sophister year is comprised of modules to a total of 60 credits. The distribution scheme of marks between papers and practical work at the Sophister examinations will be published by individual schools or departments/disciplines.

Calculation of Moderatorship results

The final moderatorship results are calculated as a weighted average of the overall result for the Junior and Senior Sophister examination results.

Junior Sophister 30%, Senior Sophister 70%:

Geography and Geoscience.

Assessment Regulations

Reassessment - Regulation 8: Undergraduate Progression and awards regulations

- Supplementals should be available in all years.
- The right to supplementals where a student has failed at the annual session should be automatic.
 - Students who have passed at the annual session are not permitted to present at the supplemental session in order to improve their performance.
- The same progression regulations, including compensation, should be applied at annual and supplemental sessions.
- Rescheduled exams within the session should be discontinued.
- Students (in all years) should only be required to re-sit examinations or re-submit coursework for failed modules or components thereof.
- Different reassessment modalities should be allowed where appropriate.
- Where supplemental assessments are taken, marks are awarded and agreed as usual. Capping will not be applied.

Repetition of a year: Regulation 7: Undergraduate Progression and awards regulations

- Students should not be allowed to repeat all years.
- Students should not repeat any academic year more than once within a degree programme and may not repeat more than two academic years within a degree programme (see regulation 6 below)
 - **Regulation 6:**
 - The maximum number of years to complete an undergraduate degree should be:
 - 6 for a 4-year programme and;
 - 7 for a 5-year programme unless otherwise specified by accrediting bodies.
- Repetition of a year is in full, i.e., all modules and all assessment components. There will be an option to repeat a year on an 'off-books' basis.

Full Progression and Awards regulations can be found via the following:
<https://www.tcd.ie/academic-affairs/academic-regulations/-undergraduate-progression-and-awards/>

Academic Integrity Policy

Trinity College Dublin, the University of Dublin, is committed to upholding academic integrity, and recognises that it underpins all aspects of university life, including all activities relating to research, learning, assessment, and scholarship.

Trinity therefore considers academic misconduct to be serious and academically fraudulent and an offence against academic integrity that is subject to the Trinity procedures in cases of suspected misconduct.

The Academic Integrity Policy

(<https://www.tcd.ie/media/tcd/about/policies/pdfs/academic/Academic-Integrity-Policy.pdf>) should be read in conjunction with (and is subject to) the University Calendar, Part II on Academic Integrity (This policy replaces the Plagiarism Policy).

Other sources of information are available:

<https://www.tcd.ie/academic-affairs/academic-integrity/>

<https://libguides.tcd.ie/academic-integrity>

<https://www.tcd.ie/academic-affairs/academic-integrity/>

Guidance on the use of AI and Generative-AI in College

The advent of commonly available artificial intelligence tools are disruptive in both positive and negative ways. Before using them in your studies it is important that you familiarise yourself with College policies on its use. Unless otherwise instructed for particular modules or assessments, **the default expectation would be that you do not submit AI generated content as an attempt at an assessment.**

Below is some basic overview of the College policy on AI and GenAI. This has been taken from the more detailed policy which is informative and wide ranging. You are expected to have read and familiarised yourself with this policy.

https://www.tcd.ie/academicpractice/resources/generative_ai/

Artificial Intelligence (AI)

Artificial intelligence is generally understood to be a set of technologies that enable computers to perform a variety of functions usually perceived as requiring human intelligence – for example, understanding speech, recognising objects in images, composing written answers and problem reasoning. A more formal definition of an AI system from the European Union AI Act (2024) is:

...a machine-based system designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments[.] (EU AI Act 2024)

Generative Artificial Intelligence (GenAI)

Generative AI is the sub-area of AI, involving AI systems which generate content — for example, human dialogue, speech, images and video. GenAI systems are capable of generating such content based on a user’s request or instruction. More formally, GenAI is defined by UNESCO as **“an artificial intelligence (AI) technology that automatically generates content in response to prompts written in natural-language conversational interfaces” (UNESCO 2023).**

AI and GenAI in Trinity

As Ireland’s leading university and as a world leader in AI research, Trinity recognises that AI and GenAI offer new opportunities for teaching, learning, assessment and research. We also recognise that these technologies present challenges and risks, including to academic integrity, ethics, privacy, impartiality, intellectual property and sustainability.

Acknowledging these opportunities and challenges, Trinity commits to supporting the opportunity for students and staff to become AI literate and fluent, thereby helping them to navigate and respond to the challenges and risks of AI and GenAI in order to harness the potential of (Gen)AI to enhance teaching, learning, assessment and research – and to be prepared for future challenges as these technologies evolve. We also commit to providing ongoing resources and guidance to support students and staff to use AI and GenAI in ways that are appropriate, responsible and ethical – and to ensure that academic integrity is maintained in its usage.

College aspires to develop best practice guidelines in this area. In addition to the resources and supports that College provides and recognising that appropriate uses of AI and GenAI tools vary across academic disciplines, Schools will have some flexibility to customise their own discipline-specific practices in line with this institutional statement, other institutional policies as they develop, and national and international regulation. The College goal is to enable overall consistency in the regulation of GenAI usage, while also respecting where disciplines or degree programmes require specific restrictions in GenAI usage in assessment preparation and execution. Thus, where disciplines or degree programmes wish to refine specific regulations on student use of GenAI for learning, general as well as programme-specific regulations should be communicated in the relevant discipline/degree programme handbook.

Such regulation could range from how student GenAI usage is acknowledged or cited within student assessment submissions, to prohibition of GenAI usage in the production of student assessment submissions.

TR062: Geography and Geoscience - BA Mod in SCIENCE (GEOGRAPHY)

Geography Course Coordinator – Dr Margaret Jackson

Geography is fundamentally interdisciplinary. It encompasses very different ways of knowing, from the natural and social sciences and the humanities. A major intellectual task within the subject is to encompass this diversity of contexts and the different types of knowledge that are characteristic of the study of the Earth's physical environments, human societies and the interactions between the two. Geographers can take a global view but are able to inter-relate global and local perspectives. Geographers are aware of the relevance of geographical concepts, techniques and expertise to problem solving, wealth creation, poverty reduction and improving the quality of life and well-being. This is currently relevant in the context of climate change, urban and rural planning, hazard assessment, sustainability and environmental management.

Geography Learning Outcomes

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

- Demonstrate a coherent geographical understanding of trends, processes and impacts which shape global environments and/or societies at different spatial and temporal scales.
- Demonstrate an understanding of Geography as an academic discipline, including awareness of its theories, concepts, history, methods, processes and principal subfields.
- Apply geographical thought creatively, critically and appropriately to specific spaces, places and/or environments.
- Demonstrate competence in the use of the diversity of techniques and approaches involved in collecting and analysing geographical information.
- Critically reflect on the accuracy, precision and uncertainty of research data
- Demonstrate critical insight of the complexity of the reciprocal relationships between physical and human environments.
- Recognise, evaluate and synthesize various views, arguments and sources of knowledge pertinent to solving environmental and social problems.
- Resolve geographical questions by ethical means, applying evidence-based knowledge and appropriate research techniques, including those associated with field work.
- Communicate geographical perspectives and knowledge effectively to specialist and non-specialist audiences using appropriately selected written, oral and visual means.
- Contribute effectively as a member or leader of diverse teams working in geographical or multidisciplinary contexts.

TR062 Geography Junior Sophister Programme

The Junior Sophister programme comprises 40 credits of mandatory core modules, which includes a 10 credit Residential field course that may be taken either in semester 1 or semester 2.

Pathway A is designed for students taking the Residential Field Course in Semester 1, while Pathway B is designed for those taking the Residential Field Course in Semester 2.

Students are also required to select an additional 20 credits of open modules. Of these 20 credits, at least 5 credits (one module) must be drawn from the Trinity Elective modules. A student may choose to take an additional 5 credit module from the Trinity Electives but cannot take both modules in the same Semester.

Pathway A

TR062 Geography Junior Sophister Year Pathway A	
Semester 1 <i>30 Credits</i>	Semester 2 <i>30 Credits</i>
CORE MODULES (40 Credits) <i>20 credits each semester</i>	
GGU33002 Residential Field Course 1 (10 Credits)*	GGU33011 Earth's Climate Past, Present and Future (5 Credits)
GGU33933 Geographical Information: Data & Tools (5 Credits)	GGU33021 Research Skills and Data Analysis in Geomorphology 2 (5 Credits)
and EITHER	GGU33928 Advanced Research Methods in Geography 1 (5 Credits)
BOU33123 Soil Science (5 Credits)	GLU33009 Hydrology and Groundwater Quality (5 Credits)
OR	
GGU33014 Research Frontiers in Geography (5 Credits)	
TRINITY ELECTIVE (5 CREDITS) + THREE OPEN MODULES (15 CREDITS)	
Trinity Elective (5 Credits)	Trinity Elective (5 Credits)
GGU33020 Research Skills and Data Analysis in Geomorphology 1 (5 Credits)	GGU33019 Economy, Finance & Space (5 credits)
GGU33937 Urban Economic Structure & Regeneration (5 credits)	GGU33915 Globalisation and Geopolitics (5 credits)
GGU33939 Exploring the Sustainable City (5 Credits)	GGU33931 Environmental Governance 1 (5 Credits)
GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits)	GLU33005 Volcanism and Magmatism (5 Credits)
GLU33004 The Crystal World (5 Credits)	GLU33007 Earth Resources for a Critical Future (5 Credits)

Pathway B

TR062 Geography Junior Sophister Year Pathway B	
Semester 1 <i>30 Credits</i>	Semester 2 <i>30 Credits</i>
CORE MODULES (40 Credits) <i>20 credits each semester</i>	
BOU33123 Soil Science (5 Credits)	GGU33003 Residential Field Course 2 (10 Credits)*
GGU33014 Research Frontiers in Geography (5 Credits)	GGU33928 Advanced Research Methods in Geography 1 (5 Credits)
GGU33020 Research Skills and Data Analysis in Geomorphology 1 (5 Credits)	and EITHER
GGU33933 Geographical Information: Data & Tools (5 Credits)	GGU33011 Earth's Climate Past, Present and Future (5 Credits)
	OR
	GLU33009 Hydrology and Groundwater Quality (5 Credits)
TRINITY ELECTIVE (5 CREDITS) + THREE OPEN MODULES (15 CREDITS)	
Trinity Elective (5 Credits)	Trinity Elective (5 Credits)
GGU33937 Urban Economic Structure & Regeneration (5 credits)	GGU33019 Economy, Finance & Space (5 credits)
GGU33939 Exploring the Sustainable City (5 Credits)	GGU33021 Research Skills and Data Analysis in Geomorphology 2 (5 Credits)
GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits)	GGU33915 Globalisation and Geopolitics (5 credits)
GLU33004 The Crystal World (5 Credits)	GGU33931 Environmental Governance 1 (5 Credits)
	GLU33005 Volcanism and Magmatism (5 Credits)
	GLU33007 Earth Resources for a Critical Future (5 Credits)

TR062 Geography Senior Sophister Programme

The Senior Sophister programme comprises 25 credits of mandatory core modules that are taken by TR062 Geography students. Students are required to select an additional 35 credits of open modules, ensuring that a minimum of 15 credits are chosen in semester 1 and 20 credits in semester 2. Module selection may be limited by prerequisites or quotas.

TR062 Geography Senior Sophister Year	
Semester 1 <i>30 Credits</i>	Semester 2 <i>30 Credits</i>
MANDATORY MODULES (25 Credits)	
GGU44930 Geography Capstone Project (20 Credits)	
GGU44933 GIS and Remote Sensing Applications in Geography (5 Credits)	
OPTIONAL MODULES (35 Credits)	
BOU44111 Restoration Ecology and Rewilding (5 Credits)	GGU44902 Karst Landscapes (5 Credits)
GGU44901 Natural Hazards (5 credits)	GGU44936 Globalisation and African Development (5 Credits)
GGU44903 Carbon and Climate (5 credits)	GGU44968 Historical Geography (10 Credits)
GGU44976 Glaciers & Glaciation (5 credits)	GGU44977 Environmental Governance 2 (5 Credits)
GGU44978 Finance and Climate Justice (10 credits)	GGU44979 Living on the Edge: Estuaries and Coasts (5 Credits)
GLU44009 Geoscience for a Sustainable Planet (5 credits)	GLU44011 Palaeoceanography and Palaeoclimatology (5 Credits)
GLU44012 Raw Materials in Building (5 Credits)	

IMPORTANT NOTE: Sophister modules are subject to change.

TR062: Geography and Geoscience - BA Mod in SCIENCE (GEOSCIENCES)

TR062 Course Director – Dr Seán Mc Clenaghan

Geosciences combine the study of geology, geography, chemistry, physics and biology, to develop a complete understanding of how the earth works (past, present & future). The work of geoscientists helps us understand the changing climate, predict earthquakes and volcanic eruptions, find supplies of energy and raw materials, maintain clean air and water, understand the motion of the earth's crust and oceans, and reconstruct the evolution of rocky planets and life.

Geoscience Learning Outcomes

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

- Demonstrate a thorough working understanding of the scientific method, the nature of scientific knowledge and its evolution over time.
- Discuss the core principles of Geoscience and apply the scientific method to the study of Geographical and Geological problems.
- Explain the interdisciplinary nature and acquisition of scientific knowledge, illustrating the relationships among geographical and geological sciences and cognate disciplines.
- Formulate and test hypotheses in order to make logical and scientific arguments based on current data.
- Collect qualitative and quantitative data with precision and organisation, using specific geographical and geological technical skills.
- Analyse and critically evaluate data using appropriate mathematical, statistical, computational and other relevant methods.
- Conduct geographical / geological research independently and as part of a team.
- Critically evaluate current and novel concepts and ideas.
- Communicate effectively in written, oral, electronic and social media formats to scientific and non-scientific audiences.
- Discuss the role and influence of scientific knowledge on society and illustrate its application in the geosciences.

TR062 Geoscience Junior Sophister Programme

The JS programme comprises **40 credits** of mandatory core modules that are taken by TR062 Geoscience students. Depending on your desired path of 1) Earth Systems Science or 2) Geology, mandatory module requirements will vary between the two pathways. All students are required to select an additional **20 credits** of modules, ensuring that **10 credits** are chosen **in each semester**. Of these 20 credits, at least **5 credits** (one module) must be drawn from the Trinity Elective modules. A student may choose to take an additional 5 credit module from the Trinity Electives but cannot take both modules in the same Semester.

Students are required to take either **TWO** or **THREE** 'open' modules from the TR062 Geoscience programme depending on the number of Trinity Electives they select to undertake (See 'Trinity Electives' for further details).

Important note on selecting a Trinity Elective

Due to the mandatory residential field course, students will be away from College during the last week of Semester two. **Students wishing to take an elective from Semester two should check that their absence from the final week of the module will not impact on assessment.**

Earth System Science Pathway

TR062 Geoscience Earth System Science Pathway Junior Sophister Year	
Semester 1 <i>30 Credits</i>	Semester 2 <i>30 Credits</i>
CORE MODULES (40 Credits) <i>20 credits each semester</i>	
BOU33123 Soil Science (5 Credits)	GGU33011 Earth's Climate Past, Present and Future (5 Credits)
GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits)	GLU33007 Earth Resources for a Critical Future (5 Credits)
GLU33006 Stratigraphy: Earth Through Time (5 Credits)	GLU33009 Hydrology and Groundwater Quality (5 Credits)
GLU33027 Junior Sophister Field Skills (5 Credits)	GSU33001 Research Methods for Geoscientists (5 Credits)
TRINITY ELECTIVE (5 CREDITS) + THREE OPEN MODULES (15 CREDITS)	
Trinity Elective (5 Credits)	Trinity Elective (5 Credits)
GGU33020 Research Skills and Data Analysis in Geomorphology 1 (5 Credits)	GGU33021 Research Skills and Data Analysis in Geomorphology 2 (5 Credits)
GLU33004 The Crystal World (5 Credits)	GGU33931 Environmental Governance 1 (5 Credits)
GLU33017 Earth Survey: GIS Mapping Methods (5 Credits)	GLU33005 Volcanism and Magmatism (5 Credits)
	GLU33013 Tectonics & Structural Geology (5 Credits)
GSU33007 Junior Sophister Geology Field Course (Greece; 10 Credits)	

Geology Pathway

TR062 Geoscience Geology Pathway Junior Sophister Year	
Semester 1 <i>30 Credits</i>	Semester 2 <i>30 Credits</i>
CORE MODULES (40 Credits) <i>20 credits each semester</i>	
GLU33004 The Crystal World (5 Credits)	GLU33005 Volcanism and Magmatism (5 Credits)
GLU33006 Stratigraphy: Earth Through Time (5 Credits)	GLU33008 Metamorphic Rocks and Processes (5 Credits)
GLU33027 Junior Sophister Field Skills (5 Credits)	GLU33013 Tectonics & Structural Geology (5 Credits)
GSU33007 Junior Sophister Geology Field Course (Greece; 10 Credits)	
TRINITY ELECTIVE (5 CREDITS) + THREE OPEN MODULES (15 CREDITS)	
Trinity Elective (5 Credits)	Trinity Elective (5 Credits)
BOU33123 Soil Science (5 Credits)	GGU33011 Earth's Climate Past, Present and Future (5 Credits)
GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits)	GLU33007 Earth Resources for a Critical Future (5 Credits)
GLU33017 Earth Survey: GIS Mapping Methods (5 Credits)	GLU33009 Hydrology and Groundwater Quality (5 Credits)

IMPORTANT NOTE: Junior sophister modules are subject to change.

TR062 Geoscience Senior Sophister Programme

The SS programme comprises **40 credits** of mandatory modules that are taken by TR062 Geoscience students. Depending on your desired path of 1) Earth Systems Science or 2) Geology, mandatory module requirements will vary between the two pathways. All students are required to select an additional **20 credits** of modules, ensuring that **10 credits** are chosen **each semester**.

Earth System Science Pathway

TR062 Geoscience Earth System Science Pathway Senior Sophister Year	
Semester 1 <i>30 Credits</i>	Semester 2 <i>30 Credits</i>
MANDATORY MODULES (40 Credits) <i>20 credits each semester</i>	
GSU44001 Geoscience Research Capstone Project (20 Credits)	
GSU44004 Geoscience Frontiers: Past, Present and Future (10 Credits)	
GLU44009 Geoscience for a Sustainable Planet (5 Credits)	GSU44002 Senior Sophister Geoscience Field Course (5 Credits)
OPTIONAL MODULES (20 Credits)	
GGU44976 Glaciers & Glaciation (5 credits)	GGU44902 Karst Landscapes (5 Credits)
GLU44008 Early Earth Evolution (5 Credits)	GGU44979 Living on the Edge: Estuaries and Coasts (5 Credits)
GLU44012 Raw Materials in Building (5 Credits)	GLU44004 Advanced Volcanology and Igneous Petrology (5 Credits)
GLU44014 Rift Sedimentary Geodynamics (5 Credits)	GLU44011 Palaeoceanography and Palaeoclimatology (5 Credits)
GLU44015 Human Futures on a Finite Planet (5 Credits)	GLU44020 Cyclostratigraphy and Astrochronology (5 Credits)

Geology Pathway

TR062 Geoscience Geology Pathway Senior Sophister Year	
Semester 1 <i>30 Credits</i>	Semester 2 <i>30 Credits</i>
MANDATORY MODULES (40 Credits) <i>20 credits each semester</i>	
GSU44001 Geoscience Research Capstone Project (20 Credits)	
GSU44004 Geoscience Frontiers: Past, Present and Future (10 Credits)	
GLU44019 Lithoprobe: Advanced Earth Exploration (5 Credits)	GSU44002 Senior Sophister Geoscience Field Course (5 Credits)
OPTIONAL MODULES (20 Credits)	
GGU44976 Glaciers & Glaciation (5 credits)	GGU44902 Karst Landscapes (5 Credits)
GLU44008 Early Earth Evolution (5 Credits)	GLU44004 Advanced Volcanology and Igneous Petrology (5 Credits)
GLU44012 Raw Materials in Building (5 Credits)	GLU44011 Palaeoceanography and Palaeoclimatology (5 Credits)
GLU44014 Rift Sedimentary Geodynamics (5 Credits)	GLU44020 Cyclostratigraphy and Astrochronology (5 Credits)
GLU44015 Human Futures on a Finite Planet (5 Credits)	

IMPORTANT NOTE: Senior sophister modules are subject to change.

TR062 Junior Sophister Modules

BOU33123 Soil Science (5 Credits)

Module Coordinator: Dr Matthew Saunders (saundem@tcd.ie)

Soils are important for plants as they provide the key resources required for growth and also essential structural support. This module will provide an overview of the fundamental concepts of soil formation and characterisation; how soil characteristics influence plant distribution and productivity through water and nutrient availability; how soil organisms (bacteria, fungi) interact with plants and how soils influence global biogeochemical cycles (carbon and nitrogen). Particular focus will be given to the role of soils in the production of food, fuel and fibre and how sustainable land management practices are required to ensure the long-term health and fertility of soil systems.

Assessment: Course work (50%); end of semester examination (50%).

Prerequisites: None

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science	✓	
Geology		✓

GGU33002 Residential Field Course 1 (10 Credits) *

Module Coordinator: Dr Mary Bourke (bourkem4@tcd.ie)

Note: You must select **EITHER** GGU33002 **OR** GGU33003 (**you may not select both**). This module will run from the Friday evening of Week 6 in Semester 1 (to fly overseas) through the full Week 7 Reading Week. **Note that due to the cost of airfare this module is more expensive than the alternative module GGU33003.** However, there are additional costs required for both modules.

This field trip will introduce students to specific examples that illustrate the interplay between human society and the environment in an overseas location (e.g., Mallorca). During the trip, key themes will be explored on set days, with student introduced to specific geographical research skills that will allow them to gain confidence in carrying out their own independent geographical research project. These skills include a range of transferrable skills (team working, project framing, planning, execution, and data analysis) alongside specific human and physical geography data acquisition methods and techniques, such as may be required for capstone projects.

Prior to departure, students will be issued with background materials to familiarise themselves with the geographical setting and its human and physical environmental past and present.

Detailed information on travel and accommodation will be issued prior to the trip. Students are expected to attend briefing sessions as requested in which the general field setting, and several themes will be introduced that will be explored in depth during the trip. These sessions will also take students through the logistics, ethical, and health and safety considerations of taking part.

Prerequisites: None

Assessment: Course work (100%)

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science		
Geology		

GGU33003 Residential Field Course 2 (10 Credits) *

Module Coordinator: Dr Mary Bourke (bourkem4@tcd.ie)

Note: You must select **EITHER** GGU33003 **OR** GGU33002 (**you may not select both**). This module will run from the Friday evening of Week 6 in Semester 2 (to travel to the field) through the Week 7 Reading Week. Note that this module is less expensive than the alternative module GGU33002 as there are no international flights, etc., required. However, there are additional costs required for both modules.

This field trip will introduce students to specific examples that illustrate the interplay between human society and the environment in an Irish setting. During the trip, key themes will be explored on set days, with student introduced to specific geographical research skills that will allow them to gain confidence in carrying out their own independent geographical research project. These skills include a range of transferrable skills (team working, project framing, planning, execution, and data analysis) alongside specific human and physical geography data acquisition methods and techniques, such as may be required for capstone projects.

Prior to departure, students will be issued with background materials to familiarise themselves with the geographical setting and its human and physical environmental past and present. Detailed information on travel and accommodation will be issued prior to the trip.

Students are expected to attend briefing sessions as requested in which the general field setting, and several themes will be introduced that will be explored in depth during the trip. These sessions will also take students through the logistics, ethical, and health and safety considerations of taking part.

Prerequisites: None

Assessment: Course work (100%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science		
Geology		

GGU33011 Earth’s Climate Past, Present and Future (5 Credits)

Module Coordinator: Dr Margaret Jackson (margaret.jackson@tcd.ie)

In this module we will investigate Earth’s climate system, how it operates, and how it changes over time (and why). In doing so we will explore not only the climate we observe today, but also how climate has changed in the past. With this understanding in hand, we will go on to examine projections for future climate change and what impact these potential changes may have on our lives and communities. This module will use readings, activities, and discussion to explore the mechanisms that influence climate over time, in the past, present, and future.

Prerequisites: None

Assessment: Course work (100%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science	✓	
Geology		✓

GGU33014 Research Frontiers in Geography (5 Credits)

Module Coordinator: Prof. Anna Davies (daviesa@tcd.ie)

Geographical research is at the forefront of understanding the world around us in relation to nature-society interactions, spatial processes, and matters of space and place. This module will help students refine their ability to understand and interpret research from across the discipline of geography, as well as supporting them to develop evidence-based opinions about this research and assisting them to identify how they can help to push frontiers forward through their own research.

Following introductory lectures on the research process, the module will comprise a series of invited presentations from geography researchers on a recently published paper, chapter or report with student-led discussions about the research process and findings.

Students will critically analyse each presentation with respect to the core elements of the research process: problem identification, existing state of knowledge, methodology, analysis, results, and conclusions and reflect on the key challenges and opportunities for geography at the frontier of global challenges in the 21st Century.

Prerequisites: None

Assessment: Course work 100%

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science		
Geology		

GGU33019 Economy, Finance & Space (5 credits)

Module Coordinator: Dr Martin Sokol (sokolm@tcd.ie)

Why do some economies grow faster than others? Why is there so much inequality? Why do economies crash? What is the role of finance in contemporary capitalism? Is economic growth sustainable? What policy options are there to shape our economic systems? These are some of the questions explored by this module. To help address them, Economy, Finance & Space provides students with key insights into economic and financial geography. It highlights the ways in which economic and financial processes both shape, and are shaped by, space.

In particular, the module focuses on understanding how uneven development occurs, alongside exploring questions of how social inequalities arise and what causes economic and financial crises. In addition to this, the impacts of economic and financial processes on the environment and the climate crisis are considered. In doing so, the module engages with fundamental challenges facing contemporary societies and explores policy options to address them.

Students will gain a solid grounding in a number of theoretical approaches, concepts and debates pertaining to the economy, finance & space; will explore economic and financial processes in the real world through case studies from a range of different contexts, including those in the Western capitalist core and (semi-)peripheries of post-socialist Eastern Europe; and will debate policy options for the future.

Prerequisites: None

Assessment: 100% Assessment

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU33020 Research Skills and Data Analysis in Geomorphology 1 (5 Credits)

Module Coordinator: Dr Margaret Jackson (margaret.jackson@tcd.ie)

Earth's surface is constantly changing. Understanding how and why these changes occur is a key skill for those across the Earth Sciences, from physical and human geographers to geo- and environmental scientists. Being able to communicate one's observations and understanding of our planet's surface is likewise a crucial competency. In this module, we will take a wide-angle view of Earth-surface forms and processes and use these concepts as our gateway to exploring and practicing key skills in the field. These skills include the use, interpretation, and creation of topographic and geomorphic maps. We will also investigate methods used to date earth surface landforms and processes. This module relies heavily on hands-on activity and skill practice in addition to traditional classroom lectures and discussion.

This module also introduces key skills for students undertaking independent Capstone projects in their fourth year and is a natural lead-in to the module 'Research Skills and Data Analysis in Geomorphology 2' in semester 2.

Prerequisites: None

Assessment: Course work (100%).

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography	✓*	✓*
Earth System Science		✓
Geology		

***IMPORTANT NOTE FOR GEOGRAPHY STUDENTS:** this module may be taken as either 'Core' or 'Open' module, depending on your chosen pathway.

GGU33021 Research Skills and Data Analysis in Geomorphology 2 (5 Credits)

Module Coordinator: Dr Iris Moeller (moelleri@tcd.ie)

Earth's surface is constantly changing. Understanding how and why these changes occur is a key skill for those across the Earth Sciences, from physical and human geographers to geo- and environmental scientists. This module focuses on the role of water in the evolution of Earth's landscape. Through investigating Water-driven processes and sediment transport, students will gain first-hand experience in constructing simple models to help them estimate the rate and magnitude of surface processes. Students will also practice sediment classification, quantitative problem solving, and map making. This module relies heavily on hands-on activity and skills practice in addition to traditional classroom lectures and discussion.

This module also introduces key skills for students undertaking independent Capstone projects in their fourth year and is a natural continuation of the module 'Research Skills and Data Analysis in Geomorphology 1' in Semester 1.

Prerequisites: None

Assessment: Course work (100%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography	✓*	✓*
Earth System Science		✓
Geology		

***IMPORTANT NOTE FOR GEOGRAPHY STUDENTS:** this module may be taken as either 'Core' or 'Open' module, depending on your chosen pathway.

GGU33915 Globalisation and Geopolitics (5 credits)

Module Coordinator: Professor Pádraig Carmody (carmodyp@tcd.ie)

It is now frequently said that the world is experiencing a "poly-crisis": climate change and disruption, conflict, poverty, political instability and others. How do we explain the emergence of intersecting crises? This module explores this issue by examining the interactions and intersections between geopolitics and globalisation. Globalisation and geopolitics are being reconfigured by the changing nature of domestic and international politics and other meta-trends such as the rise of emerging powers.

This module examines the nature and impacts of globalisation and geopolitics around the world with special attention to the nature and drivers of increased interconnection, climate change, conflict, and "shadow globalisation", amongst others. Particular emphasis is placed on the systemic nature of global crises, the rise of BRICS (Brazil, Russia, India, China and South Africa) and their international relations in the developing

world. It also explores current resistance to the globalisation and geopolitics through social movements both in the developed and developing world.

Pre-requisites: None

Assessment: 2-hour examination (50%) Answer 2Q/6. Three short response papers (50%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU33928 Advanced Research Methods in Geography 1 (5 Credits)

Module Coordinator: Professor Iris Möller (moelleri@tcd.ie)

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 an independent research project, which they may be required or opt to do in the form of a dissertation going from their JS to SS year. The module focuses on approaches to solving geographic problems, through topics such as conducting literature reviews, research project design, and presentation skills, and how to address questions of ethics, integrity, professionalism, philosophy in research. 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 critical literature reviews of key research areas relating to Geography, and the writing and presentation of a research proposal. For dissertation preparation regulations specific to Erasmus students, see page 5.

Prerequisites: None

Assessment: Course work (100%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science		
Geology		

GGU33931 Environmental Governance 1 (5 Credits)
Module Coordinator: Dr Rory Rowan (rowanro@tcd.ie)

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

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

Prerequisites: None

Assessment: Course work (100%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology		

GGU33933 Geographical Information: Data & Tools (5 Credits)
Module Coordinator: Dr John Connolly (john.connolly@tcd.ie)

Note: It is highly recommended that students purchase a windows-based laptop/PC for working in Geography. In the 3rd and 4th year ArcGIS Pro will be used and this only runs on PC (i.e. it does not work on Macs). ArcGIS Pro is available on campus computers.

This module explores how to identify, create, manage and use geographic data and geographical information systems (GIS). The aim is to teach students about how data is constructed, used, found, and utilised by geographic researchers within ESRI’s ArcGIS Pro environment.

The module will enable students to: interpret maps; find and evaluate data; organise, manipulate and analyse data; create projects and maps using GIS; identify how

geographic data construction and analysis differs from typical quantitative approaches. **This module is a prerequisite to GGU44933.**

Pre-requisites: None

Assessment: 100% continuous assessment

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science		
Geology		

GGU33937 Urban Economic Structure & Regeneration (5 credits)

Module Coordinator: Dr Cian O'Callaghan (ocallac8@tcd.ie)

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.

Prerequisites: None

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

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU33939 Exploring the Sustainable City (5 Credits)

Module Coordinator: Dr Federico Cugurullo (cugurulf@tcd.ie)

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.

Prerequisites: None

Assessment: 100% Assessment

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits)

Module Coordinator: Dr Carlos Rocha (rochac@tcd.ie)

This introductory course in marine biogeochemistry explores the ocean's central role in Earth's climate system and its regulation of human impact on the global environment. It provides insights into the functioning of the Earth system and its reactions to human activity, shedding light on the formation, evolution, sustenance, and endangerment of life on Earth. This knowledge informs adaptation to climate and environmental change, supporting sustainable food production, fisheries, aquaculture, and pollution mitigation.

The programme explores marine biogeochemical phenomena that influence the Earth's climate and marine life diversity, distribution, and productivity. It covers physical, biological, geological, and chemical processes that control organic matter creation, distribution, and fate in the marine environment, seawater and atmosphere composition, and marine sediment formation and preservation. It prepares students for

related courses, fieldwork, laboratory work, and careers in marine and environmental sectors.

Prerequisites: This is an introductory course on marine biogeochemistry. Even if there are no formal pre-requisites for attendance, familiarity with foundation level biology and chemistry, basic numeracy and an elementary knowledge of algebra and calculus will greatly facilitate learning.

Assessment: 100% in course

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science	✓	
Geology		✓

GLU33004 The Crystal World (5 Credits)

Module Coordinator: Dr Juan Diego Rodriguez-Blanco (j.d.rodriguez-blanco@tcd.ie)

Minerals are solid chemical compounds that occur naturally but sometimes can also be synthesised in the laboratory. They are the fundamental building blocks of rocks, also a major component of all soils, and are needed as raw materials because they are the ultimate source of many essential elements used in industrial processes. This module provides an overview of the main characteristics of minerals from a chemical and structural point of view, as well as their formation and transformation process and the factors affecting their crystallisation and chemical variability. It also focuses on the identification and characterisation of the 10-top rock-forming minerals using the petrographic microscope.

Prerequisites: None

Assessment: Course work (50%); end of semester examination (50%).

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology	✓	

GLU33005 Volcanism and Magmatism (5 Credits)

Module Coordinator: Dr Emma Tomlinson (tomlinse@tcd.ie)

This module explores the origin, evolution and emplacement of magmas and the effect of magmatic and volcanic processes on society and the environment. The module provides an overview of the most important igneous rocks at a range of scales (tectonic

setting, outcrop, hand specimen and thin section) through investigations of thin section and hand samples, videos and analogue experiments.

Prerequisites: GLU33004, The Crystal World

Assessment: Coursework (60%); end of semester examination (40%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology	✓	

GLU33006 Stratigraphy: Earth Through Time (5 Credits)

Module Coordinator: Dr Gerald Dickens (dickensg@tcd.ie)

We live on a planet that has evolved spectacularly and wonderfully since 4.55 billion years ago (Ga). Clearly from the geological record, little oxygen existed in our atmosphere until about 2.6 Ga, thick ice sheets covered equatorial latitudes 650 million years ago (Ma), and greenhouse conditions turned poles ice free at 100 though 50 Ma; life on Earth has adapted accordingly.

This module sets the foundation for how to reconstruct the history of our planet, from the samples and techniques employed, through the controversies that remain. It will address the fundamental question of how to constrain geological time, and why this is important to unravel the fundamental processes that control the Earth system.

Prerequisites: None

Assessment: Coursework (50%); end of semester examination (50%)

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science	✓	
Geology	✓	

GLU33007 Earth Resources for a Critical Future (5 Credits)

Module Coordinator: Dr Sean Mc Clenaghan (mccleens@tcd.ie)

Decarbonization of society’s energy infrastructure will involve a significant shift from fossil fuel extraction to the mining of “energy minerals” for the fabrication of green energy infrastructure. This module introduces students to a wide range of mineral deposits with an emphasis placed on raw materials critical to energy conservation, transport, and infrastructure. Students will gain a broad understanding of earth resources and important occurrences of mineral deposits in the Earth’s Crust.

The students will become familiar with the environments in which various ore resources and critical elements form as well as the implications for exploration, assessment and recovery of critical raw materials for a decarbonized society. Raw materials will be practically studied through thin section petrography, advanced micro-analysis, hand specimens and exploration drill core as well as field excursions to local mineral deposits in Ireland. Assessment of mineralization based on mineralogy and geochemistry, presence of known critical elements, precious metals and deleterious elements are addressed throughout the module.

Upon successful completion of this module students will be able to assess mineralization and identify favourable terranes for the concentration of critical raw materials. Students will also be able to analyse economic factors controlling the viability of raw materials and devise strategies for the exploration and recovery of a mineral resource.

Prerequisites: None

Assessment: Course work (40%); end of semester examination (60%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science	✓	
Geology		✓

GLU33008 Metamorphic Rocks and Processes (5 Credits)

Module Coordinator: Dr Emma Tomlinson (tomlinse@tcd.ie)

Metamorphic rocks are the most common rocks on Earth and their compositions and textures provide information on the tectonic history of an area. This module introduces the minerals and mineral assemblages that develop in metamorphosed basic igneous rocks (metabasites), mudstones and shales (pelites) and limestones (calc-silicates) investigations of thin sections, hand samples and maps.

Prerequisites: None

Assessment: Course work (50%); end of semester examination (50%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		
Geology	✓	

GLU33009 Hydrology and Groundwater Quality (5 Credits)

Module Coordinator: Dr Alex Cabral (alex.cabral@tcd.ie)

This module examines hydrology and hydrogeology within the Earth system, focusing on how water moves, interacts, and evolves across terrestrial and coastal environments from the catchment to the global scale. It integrates surface water and groundwater processes, linking physical hydrology with water quality and biogeochemical dynamics under environmental change.

The module combines fundamental hydrogeological concepts with applied perspectives on groundwater-surface water interactions, tracer approaches, and water quality challenges. Emphasis is placed on understanding groundwater systems within an integrated catchment management framework, including issues of vulnerability, protection, and the role of groundwater in climate-driven change.

Prerequisites: None.

Assessment: Course work (50%); end of semester examination (50%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science	✓	
Geology		✓

GLU33013 Tectonics & Structural Geology (5 Credits)

Module Coordinator: Dr David Chew (chewd@tcd.ie)

Understanding the geometry and distribution of rocks in the subsurface is crucial for many applied aspects of the geosciences (e.g. groundwater flow, the distribution of natural resources, carbon sequestration and geothermal energy). This course aims to develop an understanding of structures produced by tectonics in the Earth's lithosphere at a range of scales from the tectonic plate to the microscopic scale.

Lectures will explore:

- (1) compressional, extensional and strike-slip tectonic regimes and the resulting geometry and types of structures that are produced
- (2) factors influencing the strength and mechanical behaviour of the Earth's crust and underlying mantle lithosphere and
- (3) the large-scale geodynamic processes controlling plate motions and crustal deformation.

Practicals will employ various tectonic regimes (mountain belts, rifts) as case studies to investigate aspects of structural geology and tectonics, by focusing on interpreting geological maps, constructing geological cross-sections and using structural data to solve basic geological and tectonic problems.

Prerequisites: None

Assessment: Course work (50%); end of semester examination (50%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology	✓	

GLU33017 Earth Survey: GIS Mapping Methods (5 Credits)

Module Coordinator: Dr Sean Mc Clenaghan (mcclens@tcd.ie)

The objective of this module is to develop the skills required to plan and execute a geological survey and finished geological map (Capstone Project) using a digital Geographic Information System (GIS). Enrolment in this module is strongly recommended for students undertaking a Geological Survey Capstone project. Students will receive training on GIS platforms such as ArcGIS and QGIS and will be exposed to 3D visualization software for geological modelling.

Prerequisites: None

Assessment: Coursework (100%)

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology		✓

GLU33027 Junior Sophister Field Skills (5 Credits)

Module Coordinator: Dr Christopher Nicholas (nicholyj@tcd.ie)

This field course will provide basic field skills to junior sophister students in both Earth System Science and Geology Pathways. In this module students will embark on a 7 day field excursion in Ireland designed to provide first-hand experience of working in common geological contexts. Particular emphasis is placed on the collection and recording of field data, making informed field observations and subsequent interpretation.

Prerequisites: None

Assessment: Coursework (100%)

Teaching Term: Semester 1

IMPORTANT NOTE: This module will take place in the first week of Semester 1. Students will be required to make a financial contribution to the cost of the trip (currently approximately **€500**, but this may vary depending on inflation, fuel/transport

prices, etc). Although there is a College student hardship fund which can be applied for (depending on individual financial circumstances), the costs for this field course usually are borne by the student.

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science	✓	
Geology	✓	

GSU33001 Research Methods for Geoscientists (5 Credits)

Module Coordinator: Dr Michael Stock (michael.stock@tcd.ie)

The objective of this module is to develop the skills and aptitudes required to plan and execute an individual piece of guided research (the capstone project). Students undertaking a Geosciences research project will receive some basic training in research design, thesis writing, and critical evaluation of academic literature. Students will also develop an understanding and appreciation for the processes governing ethical scientific research and its impact in society.

Prerequisites: None

Assessment: Coursework (100%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science	✓	
Geology		

GSU33007 Junior Sophister Geology Field Course (Greece; 10 Credits)

Module Coordinator: Dr David Chew (chewd@tcd.ie)

Undergraduate field courses provide vital experience in learning and practising geoscience subject skills. In this module students will embark on a two-week overseas field excursion designed to provide first-hand experience of working in unfamiliar geological contexts. Particular emphasis is placed on the collection of high-quality field observations and their subsequent interpretation.

Prerequisites: None

Assessment: Coursework (100%)

IMPORTANT NOTE: This module will take place overseas and is slated to run in the **final week of Semester 2 and Trinity Week**. Students will be required to make a financial contribution to the cost of the trip (currently approximately **€1000**, but this may vary depending on inflation, flight prices, etc).

Although there is a College student hardship fund which can be applied for (depending on individual financial circumstances), the costs for this field course usually are borne by the student.

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology	✓	

TR062 Senior Sophister Modules

BOU44111 Restoration Ecology and Rewilding (5 Credits)

Module Coordinator: Dr Marcus Collier (marcus.collier@tcd.ie)

Restoration ecology, like conservation biology, is a ‘crisis’ discipline, having emerged as a science/practice response to the social and ecological impacts directly and indirectly driven by human activities. Restoration ecology has proven to be highly effective in some cases but has also given rise to some controversy as well as policy difficulties. In recent years the phrase ‘rewilding’ has emerged as an umbrella concept that embodies ecological restoration but with more future-oriented targets. Rewilding and novel ecosystems are new and controversial areas within restoration ecology making it difficult to know how and when to intervene. 43 This module will introduce you to the challenges and opportunities, failings and fallacies of the complex world of restoration ecology, rewilding, and the work of restoration ecologists. It will look at how rewilding could be the most efficient of nature-based solutions and asks if this is feasible in the modern world.

As the discipline struggles to navigate global climate issues, integrate with the social sciences, incorporate politics and economics, and derive policy actions, this module will draw on case studies of restoration globally to will challenge students to rethink ecology and ecosystems in the Anthropocene. It will also discuss areas of employment where students might consider after graduation, with some invited guests providing insight into the practice of restoration and rewilding.

Prerequisites: None

Assessment: 50% Examination, 50% Continual Assessment

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU44901 Natural Hazards (5 credits)

Module Coordinator: Prof Mary Bourke (bourkem4@tcd.ie)

Short-lived, high magnitude extreme events, from meteorite impacts, to volcanic eruptions, fire, and storms, have shaped the surface of the earth throughout its geological history. Increasing population densities in critical locations on our planet (e.g. cities at the foot of volcanoes, on tectonic fault lines, and at the coast) and human impacts on the environment at the local, regional and global scale, however, have altered the likelihood and magnitude of certain types of natural hazards. This has brought the vulnerability of societies to natural hazards into sharp focus over recent decades. In October 2020, the UN Office on Disaster Risk Reduction (UNDRR) reported

that, over the past two decades, 1.23 million people had lost their lives in a total of 7,348 ‘disaster events’ that had been recorded globally (with floods (40% of occurrences), storms (28%), earthquakes (8%), and extreme temperatures (6%) as the four most impactful types of hazard).

In our efforts to reduce the human and economic impact of such events, an understanding of the reasons for their occurrence, their spatial and temporal variability, the degree to which they are ‘natural’ as opposed to ‘anthropogenic’ as well as past and potential future societal responses to such events is critical.

This module will address the above aspects beginning with an introduction to ‘natural’ hazards and general concepts of risk and vulnerability. The introductory lectures are then followed by lectures, targeted reading and discussion groups. Finally, we will explore case studies highlighting past, present, and potential future societal solutions for the mitigation of the impact of natural hazards with guest speakers bringing an applied natural hazard and risk management perspective to this module.

Prerequisites: ‘Spaceship Earth’ (JF) and ‘Physical Geography: Dynamic Earth’ (SF) are helpful but not necessary

Assessment: To be confirmed

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU44902 Karst Landscapes (5 Credits)

Module Coordinator: Dr Pete Akers (pete.akers@tcd.ie)

The dissolution of limestone and other carbonate bedrocks produces unusual landscapes dominated by underground drainage. Globally, these carbonate rocks underlie 12–20% of the Earth’s land surface that support a quarter of the world population. When these bedrocks are exposed at the surface, dissolution carves a distinctive topography known as karst. Karst landscapes are known for their scenic mixture of peculiar landforms which include sinkholes, disappearing streams, turloughs, and caves. Karst and limestone aquifers are an important source of domestic and industrial water for billions, and the distinct hydrology of karst produces unique ecosystems and high biodiversity. However, the environmental properties that set karst apart from other landscapes also make it vulnerable to human mismanagement and pollution. Proper stewardship of limestone landscapes requires us to understand how they differ from other, better known landscapes, and this is particularly important for Ireland, which has over 40% of its land underlain by limestone.

For students interested in protecting Irish water and biodiversity resources, including those at some of Ireland’s most distinctive landscapes such as the Burren, this module provides the foundational understanding of karstic geomorphology, hydrogeology, and geochemistry for future success when operating in such environments.

Prerequisites: None

Assessment: 100% Continuous assessment of two exams (mid-term and end-of-term) consisting of MCQ, short answer, and short essay, and small in-class activities.

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology		✓

GGU44903 Carbon and Climate (5 credits)

Module Coordinator: Dr Margaret Jackson (margaret.jackson@tcd.ie)

When it comes to the stability of life on Earth, one might say that the carbon cycle can be more dangerous than an asteroid. Today, as humans add ever increasing amounts of carbon to our atmosphere and global temperatures rise in turn, rapid anthropogenic climate change places stress on ecosystems and human infrastructure alike. But to truly understand the role of carbon in our world we must look to our past. We can examine how the Earth has responded to past carbon cycle change and look to these periods for lessons for both our present and our potential future.

This module will focus on Earth’s carbon cycle today and will contextualise changes in our modern carbon and climate systems through comparisons with carbon-cycle change in Earth’s past (both its causes and consequences). Students will gain understanding of the science of carbon and its links to the climate system. Students will also learn more about the wider research process through readings which highlight the process of scientific debate and discovery.

Prerequisites: None.

Assessment: 100% Continuous assessment

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU44933 GIS and Remote Sensing Applications in Geography (5 Credits)

Module Coordinator: Dr John Connolly (john.connolly@tcd.ie)

Note: Places on this module are limited by computer laboratory spaces available (currently 28). It is highly recommended that students purchase a windows-based laptop/PC for working in Geography. In the 3rd and 4th year ArcGIS Pro will be used and this **only** runs on PC (i.e. **it does not work on Macs**). ArcGIS Pro **is** available on campus computers.

Remote Sensing and Geographical Information Systems (GIS) allow a wide range of environmental and human phenomena to be explored across space and time. The ability to detect and map change within the human and physical/environmental sub-systems at a range of scales has the power to inform science, policy, and planning and often becomes essential when scaling up observations / theories derived within a particular place or at a particular time.

In this module, students will learn the theory behind Remote Sensing techniques, exploring a range of web-based and stand-alone methods for interrogating geo-spatial data. They will be encouraged to do so critically and will gain an understanding of uncertainties and the relative merits of different sources of Earth Observation (EO) information, with particular emphasis placed on resolution and accuracy, both spatially, temporally, and in the spectral domain.

The module is a practical module that takes place in the computer labs, however students' will be required to work in their own time to complete the module. This requires access to a MS Windows-based computer (i.e. not a Mac).

Pre-requisite: GGU33933

Assessment: 100% continuous assessment

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography	✓	
Earth System Science		
Geology		

GGU44936 Globalisation and African Development (5 Credits)

Module Coordinator: Professor Pádraig Carmody (carmodyp@tcd.ie)

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.

Prerequisites: None

Assessment: 2-hour examination (50%) Answer 2Q/6. Three short response papers (50%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU44968 Historical Geography (10 Credits)

Module Coordinator: Dr Mark Hennessy (mhnnessy@tcd.ie)

This module presents an overview of the historical geography of Ireland from the earliest evidence of human settlement in the Mesolithic through to c.1840 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.

Prerequisites: None

Assessment: 3 hour examination (50%); coursework (50%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU44976 Glaciers & Glaciation (5 credits)

Module Coordinator: Dr Margaret Jackson (margaret.jackson@tcd.ie)

Glaciers mould landscapes and mountain ranges, leaving indelible impressions long after they disappear. Glaciers also provide vital information regarding past climate, serving both as proxies and archives of past conditions. At the same time, the sensitivity of glaciers to changing climate conditions has direct implications for global sea level. Glaciers also provide water resources for billions of people in sub-tropical regions and are a backbone of many tourist economies. Understanding glaciers, how they behave and the impacts they have on landscapes, is therefore crucial for understanding the history of our planet and for projecting future change.

Through hands on activities, lectures, and discussion, this module explores how glaciers operate, their effects on landscapes over time, and the influence of glaciers in

communities today. We will also investigate how glaciers can serve as indicators of past – and present – climate change.

Prerequisites: None

Assessment: Course work (100%)

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology		✓

GGU44977 Environmental Governance 2 (5 Credits)

Module Coordinator: Dr Rory Rowan (rowanro@tcd.ie)

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

This module considers some of the key conceptual debates and environmental conflicts arising in this context. Examination of these debates and conflicts will demonstrate the contested and uneven nature of environmental change and the measures sought to address these changes.

The overall aim of the module is to help students develop a more nuanced, critical and multi-disciplinary understanding of environmental change and the different, often contested, ways of responding to such changes.

The module will consist of weekly interactive lectures/seminars and set readings. Lectures will introduce students to key concepts and perspectives drawn from the broad field of political ecology. In this module students develop a semester-long research project focused on a key area of environmental contestation in Ireland through a political ecology lens.

The projects will involve group work and individual work, written assignments, oral presentations, and primary research. Class attendance is essential.

Prerequisites: None

Assessment: 100% Continuous assessment.

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU44978 Finance and Climate Justice (10 credits)
Module Coordinator: Dr Martin Sokol (sokolm@tcd.ie)

This module examines finance and climate justice, and the links between them. As the worsening climate chaos threatens the very existence of humanity, it is increasingly clear that a climate justice approach is needed for both climate change mitigation and adaptation. Climate justice approaches emphasise the need for a fundamental transformation of society and the economy, while applying the principles of social justice and economic equity. However, there is a growing realisation that such a socio-economic transformation will not be possible without radical changes in the sphere of finance. Going beyond the proposition that finance needs to be mobilised to fund 'green' transition, this module examines the view that the entire global financial architecture must be transformed to safeguard a better, healthier, more stable and a more just future for all.

Special attention is given to central banks and their role in the financialised economic system, their relation to climate change and their role in hampering and/or promoting climate justice. Alternative economic and financial models, including de-growth and post-growth approaches, will be examined. The module also highlights a critical role of geography in understanding both the climate justice issues and the operation of finance in capitalist economies. In line with the principles of climate justice, the module offers students the opportunity to co-design its elements, while also promoting students' climate activism, self-learning and self-reflection.

Prerequisites: No prior knowledge of economics, finance or economic geography is required. The only pre-requisite for students wishing to take this module is to care about people and planet, and to have their heart in the right place.

Assessment: Continuous Assessment (100%)

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		
Geology		

GGU44979 Living on the Edge: Estuaries and Coasts (5 Credits)
Module Coordinator: Dr Iris Moeller (moelleri@tcd.ie)

Coastal regions are some of the most dynamic on Earth, not least because human and natural processes act in tight connection to each other. This dynamism poses one of the great societal challenges of the 21st Century: as coastal populations are increasing at three times the global rate, they are also experiencing an increasing threat of coastal flooding and erosion under climatic extremes (e.g. tropical and extratropical storm surges), and are 'locked into' accelerated sea level rise for centuries to come.

Building upon a basic, foundational knowledge of ocean and coastal processes covered in relevant modules within the first and second year ('Spaceship Earth' and 'Physical Geography: Dynamic Earth'), students will gain wide ranging theoretical and practical skills required to address those challenges.

The lectures and seminars take students on a journey that highlights how the natural processes operating within estuaries and on coasts are a function of external factors (past and present climate, geology, human influences) and feedbacks in which the landforms themselves affect the operation of processes that shape the landforms. Equipped with this knowledge, and several examples from around the world, students will put their knowledge into practice.

A day-field trip and practical exercise will challenge students to apply what they have learnt to real-world coastal management problems. Working in groups, they will form 'coastal management consortia' that will navigate their way through the stages of problem definition to data acquisition and development of appropriate coastal management solutions.

The assessed practical exercise will develop and enhance team-working, independent research, critical thinking, scientific and applied writing, and presentation skills.

Prerequisites: None

Assessment: 100% Continuous assessment (lecture content, course and tutorial reading = 20%, case study report = 80%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology		

GLU44004 Advanced Volcanology and Igneous Petrology (5 Credits)

Module Coordinator: Dr Michael Stock (michael.stock@tcd.ie)

This module will introduce students to the state-of-the-art and outstanding research challenges in volcanology and igneous petrology. Classes will progress sequentially from mantle petrogenesis, through crustal magma processing, to eruptive processes and volcanism at the Earth's surface.

The module will draw on aspects of geochemistry, petrology and geophysics. Students will be introduced to petrological and geochemical tools/models, learning how these can be applied to understand the architecture and dynamics of magmatic systems from analyses of rocks and minerals at the Earth's surface.

Prerequisites: GLU33005 Volcanism and Magmatism

Assessment: Course work (40%); end of semester examination (60%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology		✓

GLU44008 Early Earth Evolution (5 Credits)

Module Coordinators: Dr David Chew (chewd@tcd.ie) & Dr Emma Tomlinson (tomlinse@tcd.ie)

This module explores the uncertain science of the first billion years of Earth history. This was a period of significant change however, the rock record is both sparse and ambiguous. Furthermore, the processes that shaped our planet may not have operated by the same mechanisms or at the same rate as today, and therefore the present may not be the key to the past. We will start by introducing the tools used to understand the early Earth, and then move on to investigate the formative processes that shaped the planet:

Prerequisites: None

Assessment: Course work (60%); end of semester examination (40%)

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology		✓

GLU44009 Geoscience for a Sustainable Planet (5 credits)

Module Coordinator: Prof Quentin G Crowley (crowleyq@tcd.ie)

Geoscience has a crucial role to play in implementing the Sustainable Development Goals (SDGs). In fulfilling a global strategy to achieve a more sustainable future for all, the role of Earth subsystems needs to be clearly mapped onto the SDGs. In the past, lack of a geoscience overview resulted in unsustainable development and several undesirable knock-on effects. For instance, the high energy output from combustion of fossil fuels was instrumental in development of key technologies as part of the industrial revolution and advancement of society. We now realise however, that large-scale utilisation of fossil fuels led to the unintended consequence of increased greenhouse gas emissions and climate disruption on a planetary scale. Whereas climate-change is unequivocally one of the greatest challenges faced by society today, there are also new opportunities for geoscience to contribute to climate adaptation and mitigation strategies. For instance, with the phasing out of fossil fuels there is now a new demand for raw materials to support the transition to renewable energy.

Additionally, geoscience knowledge specifically developed for petroleum exploration now underpins carbon capture and storage technologies. In other areas, integration of geoscience knowledge is crucial for sustainable agriculture and food production. This module will explore various ways in which geoscience not only supports the SDGs but also underpins global sustainable development across several sectors and systems.

Prerequisites: None

Assessment: Course work (40%); end of semester examination (60%).

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science	✓	
Geology		

GLU44011 Palaeoceanography and Palaeoclimatology (5 Credits)

Module Coordinator: Dr Gerald Dickens (dickensg@tcd.ie)

In the past 250 million years Earth has experienced significant physical, chemical and biological changes of the atmosphere, oceans and terrestrial environments; leading up to the planet that we live on today. How did this little blue planet evolve over that time, and how have we figured out its amazing history? In this course we will study the gradual long-term evolution of Earth, on land and in the oceans, and how this was interrupted by extreme global change events such as global mass extinctions, oceanic anoxic events, hyperthermals, but also more locally the Messinian Salinity Crisis, Pleistocene climate transitions, or the Younger Dryas. We study the forensics on how to

constrain Earth’s past, and how this helps us to understand the present, and predict the future.

Prerequisites: None

Assessment: Course work (65%); end of semester examination (35%).

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology		✓

GLU44012 Raw Materials in Building (5 Credits)

Module Coordinator: Dr Robbie Goodhue (goodhuer@tcd.ie)

The module will explore several recent failures in building materials and their legacy, highlighting the need for professional geoscientists in the industry. We explore the types of bulk raw materials and end uses (road dressing, concrete and mortar aggregate, fill, soil) in Ireland, focusing on specified properties and national standards. Basic testing methods and advanced analytical techniques will be covered, along with method and standard development. Predicting the stability of raw materials and the lifespan of the structures they are used in will introduce the topics of site-won material, recycling and alternative green building materials. The quarrying / extraction and processing will be taught with a trip to a working quarry / gravel pit / recycling and site stabilisation site.

Prerequisites: None

Assessment: Course work (30%); end of semester examination (70%).

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		✓
Earth System Science		✓
Geology		✓

GLU44014 Rift Sedimentary Geodynamics (5 Credits)

Module Coordinator: Dr Christopher Nicholas (nicholyj@tcd.ie)

Continental rifting is a fundamental geological process that has been responsible for breaking supercontinents apart and opening new ocean basins throughout Earth’s history. Whilst the rift basins that form during crustal extension may follow a broadly similar structural pattern of development, the stratigraphic architecture of their fill is driven by the coupling of tectonics and climate; what might be termed a rift basin’s *sedimentary geodynamics*. Consequently, as centres for sedimentary

deposition rift basins often evolve as unique, self-contained systems. Where in the world the rifting is taking place also plays an important role in determining the nature and style of the resulting lithologies that stack together to fill the basin(s). Continental rift basins also hold a variety of renewable and non-renewable energy resources, currently exploited across the globe.

This module explores how sedimentary rift basins originate and evolve. To begin with, this is done by examining in detail modern day structural geomorphology and sedimentary depositional environments in the great East African Rift System (EARS), which is the best example in the world today of active early rifting in progress. The sedimentary response to glacial-interglacial climatic cyclicity will be used to resolve the Plio-Pleistocene stratigraphy and 3D architecture of the basin fill. The module will then move on to focus on rifting and sedimentary basin development in examples from the older geological record. In particular, the break-up of the Supercontinent, Gondwana, at the beginning of the Mesozoic, leading to rift basin development along the present East African margin of coastal Tanzania (illustrated with field data from the Mandawa and Ruvuma basins). Simultaneous rifting of South America away from West Africa began the opening of the Atlantic and evolution of sedimentary rift basins along each conjugate margin, and the focus here will be on the Lusitanian Basin in Portugal.

The module will conclude by examining typical depositional sedimentary environments in the field with a mandatory 4 day residential field course to Co. Clare (indicative costs from €250 – €300; dependant upon numbers taking the module). Whilst the module will focus on continental rifting, it will also discuss intra-arc rift basins, thereby referring back to, and building upon, the JS Field Course to the Gulf of Corinth, Greece.

Prerequisites: JS Geoscience / JS Geology or JS Earth System Science

Assessment: Coursework (100%)

IMPORTANT NOTE: This module has a mandatory 4 day residential field course to Co. Clare. Students will be required to make a financial contribution to the cost of the trip (currently approximately €300, but this may vary depending on inflation, accommodation prices, etc). The costs for this field course are borne by the student.

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology		✓

GLU44015 Human Futures on a Finite Planet: Systems, Energy, and Limits to Growth (5 Credits)

Module Coordinator: Dr Carlos Rocha (rochac@tcd.ie)

This module explores environmental change from a earth systems science perspective to inform a sustainable future for individuals and society. It examines the thermodynamic structure and function of ecosystems and socioecological systems, emphasizing how entropy drives evolution and energy consumption enables complexity, growth, and adaptation. Using systems thinking, system dynamics, and Earth-system science, students will analyze the biophysical limits to growth and adaptability in closed systems such as planet Earth. Through lectures, hands-on practical workshops, simulations, modeling, and structured debate, students will map and critically assess alternative trajectories for human development, including collapse, managed descent, powered descent, and stewardship.

Prerequisites: None

Assessment: 20% Participation and engagement, 30% Quantitative modelling assignment, 25% Structured debate performance & 25% Project seminar contribution

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology		✓

GLU44019 Lithoprobe: Advanced Earth Exploration (5 Credits)

Module Coordinator: Dr Sean Mc Clenaghan (mcclens@tcd.ie)

Much of our planet’s surface has been subjected to a geological surveys and mineral exploration. Geologists must now focus on deeply buried terranes to further develop our understanding of crustal processes. Furthermore, decarbonization of society’s energy infrastructure will require greater quantities of mineral resources and with much of the Earths near-surface resources depleted, a shift in exploration to deeper targets in the crust will require a full spectrum of techniques for geological interpretation and modelling.

Students will gain a broad understanding of the processes responsible for the formation of mineral resources and their geochemical footprint in the Lithosphere.

Geophysical, litho-geochemical and Geological data will be used to model geological formations and their potential for mineral resources.

Upon successful completion of this module students will be able to assess geological terranes using available data and assess their resource prospectivity.

Prerequisites: None

Assessment: Course work (100%)

Teaching Term: Semester 1

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		
Geology	✓	

GLU44020 Cyclostratigraphy and Astrochronology (5 Credits)

Module Coordinator: Dr Matthias Sinnesael (sinnesam@tcd.ie)

A major driver of natural climate change is the changing position and orientation of the Earth relative to the Sun. We experience this for example as the day-night or the seasonal cycles, but over geological timescales this configuration also changes significantly in a periodic way, due to gravitational interactions within the Solar System. Cyclostratigraphy studies the record of cyclic variations in the sedimentary record. Astrochronology uses this understanding of these sedimentary cycles linked to astronomical processes to construct high-resolution geological timescales. In this course we will study these phenomena and their applications from the intersection of astronomy, stratigraphy and palaeoclimatology.

This course will integrate state-of-the-art research with hand-on exercises in how to collect data, train (numerical) analytical and interpretational skills, as well as how to report and discuss such results. Students will obtain advanced understanding on i) forcing of astronomical processes on Earth's climate and environments throughout Earth history, ii) how to construct the geological timescale, iii) and how the geological archive can help constrain past Solar System dynamics.

Prerequisites: GLU33006 Stratigraphy: Earth Through Time.

Assessment: Coursework (100%)

Teaching Term: Semester 2

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science		✓
Geology		✓

GSU44001 Geoscience Research Capstone Project (20 Credits)

The Geoscience capstone project is a significant piece of individual research conducted under the guidance of a member of academic staff. The project takes one of two forms:

- a. a **geological survey** which aims to solve the geological history and evolution of a specific area over time, presenting the results as a digitised geological map

sheet (including cross-sections and stratigraphic column), with an accompanying, descriptive Memoir*; or

- b. a **geosciences research project** which addresses specific research questions via field work, laboratory analysis, novel work on museum collection material / pre-existing data sets, or some combination of these, presenting the results in an extended written report (dissertation).

Assessment: Course work (100%)

The geological survey Capstone project requires the student to conduct 5-6 weeks of field work during the summer between JS and SS. The Discipline of Geology will subsidise student field costs associated with the geology capstone and student hardship funds may also be used to help cover expenses.

Contact: Dr Christopher Nicholas (nicholyj@tcd.ie)

Students undertaking a Geological Survey capstone project will receive specialised training in geological mapping and instruction on how to translate field data into publication quality geological maps, cross-sections and reports immediately prior to undertaking their field work.

Contact: Dr Michael Stock (michael.stock@tcd.ie)

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science	✓	
Geology	✓	

GSU44002 Senior Sophister Geoscience Field Course (5 Credits)

Module Coordinator: Dr Matthias Sinnesael (sinnesam@tcd.ie)

This module comprises a 10-day residential field course that is usually held overseas. It provides students with practical experience in conducting primary research across a range of geoscience themes. Students are required to complete a series of guided research tasks and to present the results of their work in evening seminars, and in written form as a field notebook and report. This field course further develops practical fieldwork and problem-solving skills. Emphasis is placed on the application of geoscience techniques in real-world situations.

Prerequisites: None

Assessment: Course work (100%)

IMPORTANT NOTE: This module will take place overseas and is slated to run in the final week of Semester 2. Students will be required to make a financial contribution to the cost of the trip (currently approximately **€1000**, but this may vary depending on inflation, flight prices, etc). The costs for this field course are borne by the student.

Moderatorship/Pathway	Core	Open
Geography		
Earth System Science	✓	
Geology	✓	

GSU44004 Geoscience Frontiers: Past, Present and Future (10 Credits)

Module Coordinator: Emma Tomlinson (tomlinse@tcd.ie)

This module explores the history, evolution and frontiers of geoscientific research. A new topic will be examined each week, starting with an introductory lecture, followed by time for reading and finishing with a symposium session with talks, posters and discussion on current thinking on the topic. The lecture will focus on the original ideas, how they were received and whether these ideas have been accepted, rejected or remain contested. The symposium sessions will focus on current ideas, problems and controversies in the geosciences.

Prerequisites: None

Assessment: Continuous Assessment (50%); end of semester examination (50%).

Teaching Term: Year

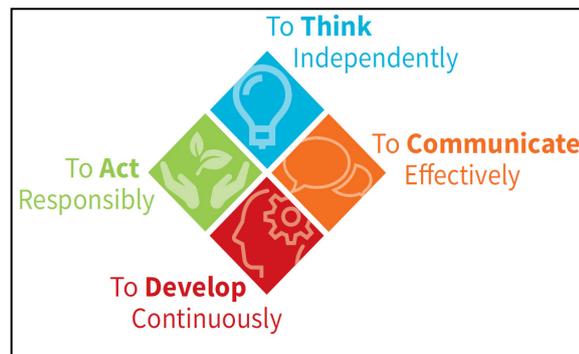
Moderatorship/Pathway	Core	Open
Geography		
Earth System Science	✓	
Geology	✓	

Graduate Attributes

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

The four Trinity Graduate Attributes are:

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



Why are the Graduate Attributes important?

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

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

How will I develop these Graduate Attributes?

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

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

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

Important information

Progression and Awards

Information on progression and awards can be found via the following webpage:

<https://www.tcd.ie/teaching-learning/academic-affairs/ug-prog-award-regs/index.php>

Attendance

All students should enter residence in or near Dublin and must begin attendance at the College not later than the first day of teaching term and may not go out of residence before the last day of teaching term unless **they have previously obtained permission from the Senior Lecturer through their tutor.**

Students must attend College during the teaching term. They must take part fully in the academic work of their class throughout the period of their course. Lecture timetables are published through my.tcd.ie, and on school or department notice-boards or in Blackboard before the beginning of Michaelmas teaching term. The onus lies on students to inform themselves of the dates, times and venues of their lectures and other forms of teaching by consulting these timetables.

The requirements for attendance at lectures and tutorials vary between the different faculties, schools, and departments. The school, department, or course office, whichever is relevant, publishes its requirements for attendance at lectures and tutorials on noticeboards, and/or in handbooks and elsewhere, as appropriate.

Assessment: Procedures for the non-submission of coursework and absence from examinations

All students must fulfil the course requirements of the school or department, as appropriate, with regard to attendance and course work. Where specific requirements are not stated, students may be deemed non-satisfactory if they miss more than a third of their course of study or fail to submit a third of the required course work in any term.

Full regulations on non-submission of coursework can be found via the following:

<https://www.tcd.ie/media/tcd/calendar/undergraduate-studies/general-regulations-and-information.pdf>

At the end of the teaching term, students who have not satisfied the school or department requirements may be reported as non-satisfactory for that term. Students reported as non-satisfactory for the Michaelmas and Hilary terms of a given year may be refused permission to take their semester two assessment/examinations and may be required by the Senior Lecturer to repeat their year.

Further details of procedures for reporting a student as non-satisfactory are given on the College website at <https://www.tcd.ie/academicregistry/student-cases/>

Student Services

Trinity Tutorial Service

The Tutorial Service is unique, confidential, and available to all undergraduate students offering student support in all aspects of College life. The Tutorial Service is supported and co-ordinated by the Senior Tutor's Office which is located on the ground floor in House 27.

Opening Hours and Appointments

The Senior Tutor's Office is open for student appointments between 10.30am - 12.30pm and 2.30pm - 4.00pm Monday to Friday ONLY (email stosec@tcd.ie to arrange an appointment).

What is a Tutor?

A Tutor is a member of the academic staff who is appointed to look after the general welfare and development of the students in his/her care. Whilst the Tutor may be one of your lecturers, this is not always the case as the role of the College Tutor is quite separate from the teaching role.

When should I go to see my Tutor?

You should visit your Tutor whenever you are worried or concerned about any aspect of College life or indeed your personal life, especially if it is affecting your academic work. The conversation with your Tutor takes place in strictest confidence. Unless you give him/her permission to do so, s/he will not divulge information given to them to anybody, whether a member of College or to anyone outside College (to your parents/family for example). Your Tutor can only help you if s/he knows you are facing difficulties, so if you are worried about anything go and see your Tutor before things get out of hand.

Further information on the Senior Tutors Office and College Tutors may be found via the following webpage: **Senior Tutor Services**

<https://www.tcd.ie/seniortutor/students/undergraduate/>

Disability Services

The Disability Service aims to provide appropriate advice, support and information to help students and staff with disabilities. The Disability Service has in place a range of supports to ensure that students with disabilities have full access to the same facilities for study and recreation as their peers. Most students registering with the Disability Service request access to a range of supports that help the student reach their full potential while studying. Most students' needs are accommodated through these supports. The student decides what level of support they require.

For contact information or to make an appointment please contact the Disability Services – contact details are available via the following webpage:

<https://www.tcd.ie/disability/contact/>

Learning Development

Student Learning Development offers support in a variety of study and learning skills including essay writing, exam preparation, study skills, self and time-management and note taking. Mechanisms of support are workshops, individual appointments and drop-in clinics.

<https://www.tcd.ie/sld/>

Student Counselling

The Student Counselling Service is here to help you to manage any difficulties you are experiencing so you can enjoy and fully participate in your time here at College.

If you wish to make an appointment with the Student Counselling Service, please consider one of the options below. If you have any other queries you can call into reception on the 3rd floor of 7-9 South Leinster Street or contact us on:

Phone: (01) 896 1407

Email: student-counselling@tcd.ie<https://www.tcd.ie/studentcounselling/>

Webpage: <https://www.tcd.ie/studentcounselling/>

Useful College Websites:

Student Life

Student life offers information on Supports and Services, Clubs and Societies, Student Unions etc., <https://www.tcd.ie/students/>

Academic Registry

The Academic Registry is responsible for services that support the complete student lifecycle of Trinity College Dublin – from application to graduation.

For information on Registration, Fees, Grants, ID Cards etc. visit the Academic Registry (AR) in the Watts Building, on the first floor, or the visit the AR website:

<https://www.tcd.ie/academicregistry/>

Student Accommodation

<https://www.tcd.ie/accommodation/>

Dates to note

Event(s)	Date(s)
TR062 Moderatorship information session	7 April 2026
Closing date for submission of Mod Preferences	17 April 2026
Semester two assessments session	20 April to 01 May 2026
Publication of Science examination results	29 May 2026
Publication of First Round Sophister Places	07 July 2026
Reassessment Examinations	24 August to 28 August 2026
Publication of Second Round Sophister places	09 September 2026
Semester one starts	14 September 2026
Semester one ends	04 December 2026
Semester one examinations	14 to 22 December 2026

Teaching term dates 2026-27

Michaelmas Term Monday 14 September - Friday 04 Dec 2026			Hilary Term Monday 18 January 2027 - Friday 09 April 2027		
Teaching wk. 1	Week 04	14 Sept - 18 Sept	Teaching wk. 1	Week 22	18 Jan - 22 Jan
Teaching wk. 2	Week 05	21 Sept - 25 Sept	Teaching wk. 2	Week 23	25 Jan – 29 Jan
Teaching wk. 3	Week 06	28 Sept - 02 Oct	Teaching wk. 3	Week 24	01 Feb - 05 Feb
Teaching wk. 4	Week 07	05 Oct - 09 Oct	Teaching wk. 4	Week 25	08 Feb – 12 Feb
Teaching wk. 5	Week 08	12 Oct - 16 Oct	Teaching wk. 5	Week 26	15 Feb – 19 Feb
Teaching wk. 6	Week 09	19 Oct - 23 Oct	Teaching wk. 6	Week 27	22 Feb – 26 Feb
Study week	Week 10	26 Oct - 30 Oct	Study week	Week 28	01 Mar – 05 Mar
Teaching wk. 8	Week 11	02 Nov - 06 Nov	Teaching wk. 8	Week 29	08 Mar – 12 Mar
Teaching wk. 9	Week 12	09 Nov - 13 Nov	Teaching wk. 9	Week 30	15 Mar – 19 Mar
Teaching wk. 10	Week 13	16 Nov - 20 Nov	Teaching wk. 10	Week 31	22 Mar - 26 Mar
Teaching wk. 11	Week 14	23 Nov - 27 Nov	Teaching wk. 11	Week 32	29 Mar – 02 Apr
Teaching wk. 12	Week 15	30 Nov to 4 Dec	Teaching wk. 12	Week 33	05 Apr – 09 Apr

Orientation week: 21 to 25 September 2026

Teaching begins for Junior Fresh students: 28 September 2026

October bank holiday: Monday 26th October 2026

February bank holiday: 1 February 2027

St Patrick's Day: Wednesday 17 March 2027

Good Friday: 26 March 2027

Easter Monday: 29 March 2027

Dates are correct at time of publication, however; they are subject to change in line with College policies and procedures. All changes will be reflected on the Science Course Office webpages: <https://www.tcd.ie/science/undergraduate/> and the College Academic year Calendar: <https://www.tcd.ie/calendar/academic-year-structure/>

Appendix 1

Item	Reference/Source
General College Regulations	https://www.tcd.ie/media/tcd/calendar/undergraduate-studies/complete-part-II.pdf
Emergency Procedures	<p>In the event of an emergency, dial Security Service on extension 1999</p> <p>Security Services provide a 24-hour service to the college community, 365 days a year. They are the liaison to the Fire, Garda and Ambulance services and all staff and students are advised to always telephone extension 1999 (+353 1 896 1999) in case of an emergency.</p> <p>Should you require any emergency or rescue services on campus, you must contact Security Services. This includes chemical spills, personal injury or first aid assistance.</p> <p>It is recommended that all students save at least one emergency contact in their phone under ICE (In Case of Emergency).</p>
Health and Safety	<p>Faculty of Science, Technology, Engineering and Mathematics website - https://www.tcd.ie/stem/undergraduate/health-safety.php</p> <p>School Handbooks will have School/Discipline information on Health and Safety.</p>
Data Protection	https://www.tcd.ie/dataprotection/ https://www.tcd.ie/dataprotection/assets/docs/dataprotectionhandbook/DP_Handbook_15042021.pdf
Academic Integrity	https://www.tcd.ie/teaching-learning/academic-integrity/
Research Ethics	https://www.tcd.ie/research/support/ethics-integrity.php
Blackboard	Blackboard
Explanation of Weightings	https://www.tcd.ie/academic-affairs/academic-regulations/ug-module-sizes-and-capstone/
Assessment and Progression Regulations	https://www.tcd.ie/media/tcd/calendar/undergraduate-studies/complete-part-II.pdf
Academic Awards	https://www.tcd.ie/academic-affairs/academic-regulations/

Item	Reference/Source
Equality, Diversity and Inclusion	https://www.tcd.ie/equality/
Prizes, medals, and other scholarships	https://www.tcd.ie/media/tcd/calendar/undergraduate-studies/prizes-and-other-awards.pdf
Teaching and Learning Study Abroad	https://www.tcd.ie/global/mobility/study-abroad/
Marking Scales	https://www.tcd.ie/media/tcd/science/pdfs/Trinity-Science-Guidelines-on-Marking---TSPMC-2024.pdf
Framework of qualifications Trinity Pathways	https://www.qqi.ie/national-framework-of-qualifications Trinity Pathways Trinity Courses
Capstone (UG Programmes)	https://www.tcd.ie/academic-affairs/academic-regulations/ug-module-sizes-and-capstone/
Careers Information & events	https://www.tcd.ie/Science/careers/ For further information refer to School/Discipline Handbooks.
Attendance Requirements	https://www.tcd.ie/media/tcd/calendar/undergraduate-studies/complete-part-II.pdf
Student Cases	https://www.tcd.ie/academicregistry/student-cases/
Student complaints procedures	https://www.tcd.ie/media/tcd/about/policies/pdfs/Student-Complaints-Procedure-21.07.22.pdf
General Examination Guidelines	Exam Guidelines - Academic Registry - Trinity College Dublin
Feedback and Evaluation	Student Evaluation and Feedback Procedure for the conduct of Focus Groups
Academic Policies and Procedures	https://www.tcd.ie/teaching-learning/academic-policies/
Registration (UG only) – Academic Registry	https://www.tcd.ie/academicregistry/student-registration/
Student supports	https://www.tcd.ie/students/
STEM Schools and Disciplines	https://www.tcd.ie/structure/faculties-and-schools/#d.en.2024679
Gradireland Career advice, graduate jobs and internships	https://gradireland.com/