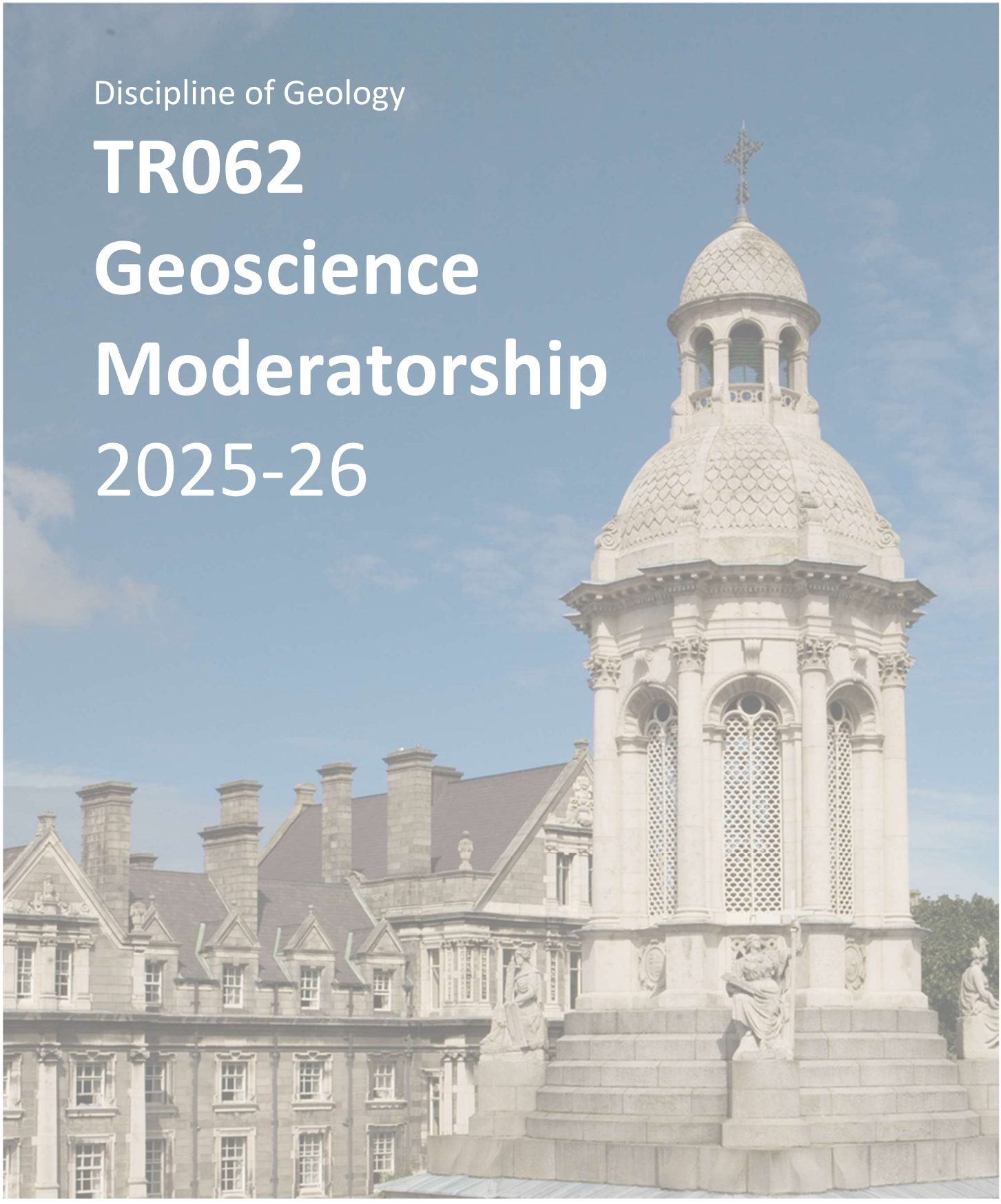
Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Discipline of Geology

TR062 Geoscience Moderatorship 2025-26



IMPORTANT NOTE:

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

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/

Table of Contents

Welcome 8

TR062: Geography and Geoscience - BA Mod in SCIENCE (GEOSCIENCES) 9

Geoscience Moderatorship Learning Outcomes 10

TR062 Geoscience Junior Sophister Programme 11

Junior Sophister Programme Structure 12

Earth System Science Pathway 12

Geology Pathway 13

TR062 Geoscience Senior Sophister Programme 14

Senior Sophister Programme Structure 15

Earth System Science Pathway 15

Geology Pathway 16

Description of ECTS system 17

Module Selection 18

Trinity Electives 18

Fieldwork 20

Fieldwork in Sophister years 21

GLU33027 21

GSU33007 21

GSU44002 22

Fieldwork: mitigating circumstances 22

Facilities, Conduct and Safety 23

Laboratories 23
Safety 24
Emergencies 24
Laboratory Safety 25
Fieldwork Safety 25
Fire Safety 25
First Aid 26
Security 27
Erasmus 28
Attendance requirements 29
Assessment Regulations 30
Examinations 31
Late Submissions and Extensions for Module Assignments 31
Academic Integrity Policy 32
Guidance on the use of AI and Generative-AI in College 33
Artificial Intelligence (AI) 33
Prizes, awards and scholarships 36
Foundation Scholarship Examination 36
Other scholarships 37
ADRIAN PHILLIPS FUND 37
DAVE JOHNSTON MEMORIAL FUND 37
PAUL AND JACKIE BLUNDELL SCHOLARSHIP 37

JULIAN BOLDY BURSARY 38
Prizes 39
JULIAN BOLDY PRIZE IN GEOSCIENCE 39
EDGE PRIZES IN GEOSCIENCE 39
CHARLES H. HOLLAND PRIZE 39
W.E. ADRIAN PHILLIPS PRIZE 39
VICTOR TALBOT AWARD 39
GEOLOGY CHAIR AWARD 40
Contact Details 41
Key dates 42
Junior Sophister Modules 44
BOU33123 Soil Science (5 Credits) 44
GGU33011 Earth's Climate Past, Present and Future (5 Credits) 45
GGU33020 Research Skills and Data Analysis in Geomorphology 1 (5 Credits) 46
GGU33021 Research Skills and Data Analysis in Geomorphology 2 (5 Credits) 47
GGU33931 Environmental Governance 1 (5 Credits) 48
GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits) 49
GLU33004 The Crystal World (5 Credits) 50
GLU33005 Volcanism and Magmatism (5 Credits) 51
GLU33006 Stratigraphy: Earth Through Time (5 Credits) 52
GLU33007 Earth Resources for a Critical Future (5 Credits) 53
GLU33008 Metamorphic Rocks and Processes (5 Credits) 54

GLU33009 Hydrology and Groundwater Quality (5 Credits) 55
GLU33013 Tectonics & Structural Geology (5 Credits) 56
GLU33017 Earth Survey: GIS Mapping Methods (5 Credits)..... 57
GLU33027 Junior Sophister Field Skills (5 Credits)..... 58
GSU33001 Research Methods for Geoscientists (5 Credits)..... 59
GSU33003 Ice Age Earth (5 Credits)..... 60
GSU33007 Junior Sophister Geology Field Course (Greece; 10 Credits) 61
Senior Sophister Modules..... 62
GGU44902 Karst Landscapes (5 Credits) 62
GGU44976 Glaciers & Glaciation (5 credits) 63
GGU44979 Living on the Edge: Estuaries and Coasts (5 Credits) 64
GLU44006 Carbonates: from the Atomic to Planetary Scale (5 Credits) 66
GLU44008 Early Earth Evolution (5 Credits) 67
GLU44009 Geoscience for a Sustainable Planet (5 Credits) 68
GLU44011 Palaeoceanography and Palaeoclimatology (5 Credits) 69
GLU44012 Raw Materials in Building (5 Credits) 70
GLU44019 Lithoprobe: Advanced Earth Exploration (5 Credits)..... 71
GLU44020 Cyclostratigraphy and Astrochronology (5 Credits) 72
GSU44001 Geoscience Research Capstone Project (20 Credits) 73
GSU44002 Senior Sophister Geoscience Field Course (5 Credits) 74
GSU44003 Geoscience Frontiers: Past, Present and Future (5 Credits) 75
Graduate Attributes..... 76

Why are the Graduate Attributes important? 77
How will I develop these Graduate Attributes? 77
Important Information 78
Student Services 78
Trinity Tutorial Service (Undergraduate Students) 79
Opening Hours and Appointments 79
What is a Tutor? 79
When should I go to see my Tutor? 79
Disability Services 80
Student Learning Development 80
College Health Service 80
Student Counselling 81
Student Life 81
Academic Registry 81
Student Accommodation 82
Appendix 1 83

Welcome

Welcome to TR062 Geoscience! The purpose of this handbook is to provide you with information on modules that will be available to you in the Sophister (3rd and 4th) years of the Geoscience Moderatorship. You now must decide which Pathway (Geology or Earth System Science) you wish to follow. For some this will be very easy, because you have known from entry which career path you wish to embark upon. For others, the decision may require a bit more thought and this handbook is designed to furnish you with all the information you need to make your choice. 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 Mc Clenaghan

TR062 Geography and Geoscience Programme Director

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

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.

Within the Geoscience Moderatorship, students will have the option of two pathways:

A) **Geology Pathway** 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. This pathway is suited for students who are interested in discovery and exploration of our planet's diverse geology. It will feature a Survey Capstone in the Senior Sophister year 4 which will be based upon geological mapping of a student's chosen field area within Europe (past areas include Ireland, Spain, Greece) or abroad. The Geology Capstone requires the student to complete 5 weeks of field work during the summer term between JS and SS.

B) **Earth System Science Pathway** 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. This pathway is suited for students who are interested in geoscience research and monitoring of Earth processes to meet the future challenges on our planet. It features a Research Capstone in the Senior Sophister year 4 which will be based upon field/laboratory data collection and interpretation.

Geoscience Moderatorship 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 Junior Sophister 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.

Earth System Science:

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.

Geology:

All students are required to select an additional 20 credits of modules, ensuring that 15 credits is chosen in semester 1, and 5 credits in semester 2. 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.

Junior Sophister Programme Structure

Earth System Science Pathway

TR062 Geoscience Moderatorship **Earth System Science Pathway** **Junior Sophister Year**	
Semester 1 (S1)	**Semester 2 (S2)**
CORE MODULES (40 Credits)	
GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits)	GSU33001 Research Methods for Geoscientists (5 Credits)
GSU33003 Ice Age Earth (5 Credits)	GLU33009 Hydrology and Groundwater Quality (5 Credits)
GLU33006 Stratigraphy: Earth Through Time (5 Credits)	GLU33007 Earth Resources for a Critical Future (5 Credits)
GLU33027 Junior Sophister Field Skills (5 Credits)	GGU33011 Earth's Climate Past, Present and Future (5 Credits)
Trinity Elective (5 credits) + THREE Open Modules (15 credits)	
Trinity Elective (5 Credits)	**Trinity Elective (5 Credits)**
GLU33017 Earth Survey: GIS Mapping Methods (5 Credits)	GLU33013 Tectonics & Structural Geology (5 Credits)
BOU33123 Soil Science (5 Credits)	GLU33005 Volcanism and Magmatism (5 Credits)
GLU33004 The Crystal World (5 Credits)	GGU33931 Environmental Governance 1 (5 Credits)
GGU33020 Research Skills and Data Analysis in Geomorphology 1 (5 Credits)	GGU33021 Research Skills and Data Analysis in Geomorphology 2 (5 Credits)
	GSU33007 Junior Sophister Geology Field Course (Greece; 10 Credits)

Geology Pathway

TR062 Geoscience Moderatorship Geology Pathway Junior Sophister Year	
Semester 1 (S1)	**Semester 2 (S2)**
CORE MODULES (40 Credits)	
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)**
GLU33017 Earth Survey: GIS Mapping Methods (5 Credits)	GGU33011 Earth's Climate Past, Present and Future (5 Credits)
BOU33123 Soil Science (5 Credits)	GLU33007 Earth Resources for a Critical Future (5 Credits)
GLU33002 Blue Earth: Understanding the Function of Marine Ecosystems (5 Credits)	GLU33009 Hydrology and Groundwater Quality (5 Credits)
GSU33003 Ice Age Earth (5 Credits)	

TR062 Geoscience Senior Sophister Programme

The Senior Sophister programme comprises 35 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 25 credits of modules, ensuring that a minimum of 15 credits are chosen in semester 1 and 10 credits in semester 2.

Senior Sophister students will undertake the Geoscience Capstone Project, a significant piece of individual research conducted under the guidance of a member of academic staff. The project takes one of two forms:

A) Geological survey:

The geological survey 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.

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.

B) Geosciences research:

The geosciences research project 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).

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.

Senior Sophister Programme Structure

Earth System Science Pathway

TR062 Geoscience Moderatorship **Earth System Science Pathway** **Senior Sophister Year**	
Semester 1 (S1)	**Semester 2 (S2)**
CORE MODULES (35 Credits)	
GSU44001 Geoscience Research Capstone Project (20 Credits)	
GSU44003 Geoscience Frontiers: Past, Present and Future (5 Credits)	
GLU44009 Geoscience for a Sustainable Planet (5 Credits)	GSU44002 Senior Sophister Geoscience Field Course (5 Credits)
OPTIONAL OPEN MODULES (25 Credits) *	
GLU44012 Raw Materials in Building (5 Credits)	GGU44902 Karst Landscapes (5 Credits)
GLU44011 Palaeoceanography and Palaeoclimatology (5 Credits)	GGU44979 Living on the Edge: Estuaries and Coasts (5 Credits)
GLU44008 Early Earth Evolution (5 Credits)	GLU44004 Advanced Volcanology and Igneous Petrology (5 Credits)
GGU44976 Glaciers & Glaciation (5 credits)	GLU44006 Carbonates: from the Atomic to Planetary Scale (5 Credits)
	GLU44020 Cyclostratigraphy and Astrochronology (5 Credits)

Geology Pathway

TR062 Geoscience Moderatorship Geology Pathway Senior Sophister Year	
Semester 1 (S1)	**Semester 2 (S2)**
CORE MODULES (35 Credits)	
GSU44001 Geological Survey Capstone Project (20 Credits)	
GSU44003 Geoscience Frontiers: Past, Present and Future (5 Credits)	
GLU44019 Lithoprobe: Advanced Earth Exploration (5 Credits)	GSU44002 Senior Sophister Geoscience Field Course (Spain 5 Credits)
OPTIONAL OPEN MODULES (25 Credits) *	
GLU44012 Raw Materials in Building (5 Credits)	GLU44006 Carbonates: from the Atomic to Planetary Scale (5 Credits)
GLU44011 Palaeoceanography and Palaeoclimatology (5 Credits)	GLU44004 Advanced Volcanology and Igneous Petrology (5 Credits)
GLU44008 Early Earth Evolution (5 Credits)	GGU44902 Karst Landscapes (5 Credits)
GGU44976 Glaciers & Glaciation (5 credits)	GLU44020 Cyclostratigraphy and Astrochronology (5 Credits)

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.

Module Selection

The module selection form will be shared with students between July and August.

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

Enrolment in core and open modules is processed via the TR062 Office, while the enrolment in Trinity Electives is processed via Online Module Enrolment (OME), as outlined in the following section.

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. 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. 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 after publication of examination results and allocation of moderatorship places. You will be asked to list your choice(s) of Trinity Elective on a first come first served basis via **Online Module Enrolment (OME)**.

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) 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.

Important note on selecting a Trinity Elective

Due to the mandatory residential field course, students will be away from College during the first week of Semester one and 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.

Fieldwork

Fieldwork is a special and important component of the Geoscience programme, as it provides many of the data from which we derive our knowledge of Earth, including spatial and temporal variations in its components. Students are introduced to field work during freshman years, and it becomes a substantial portion of sophister years, particularly for those pursuing the Geology pathway. The courses show how to extract information from the environment and how to apply these skills in both academic and practical contexts.

Please note that additional costs are typically associated with field trip modules, and this should be recognized and accounted for when considering geoscience degrees. We endeavour to keep these costs low, especially considering studied locations. 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.

Fieldwork in Sophister years

GLU33027

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.

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.

GSU33007

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.

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.

GSU44002

This module comprises a one-week 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.

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). 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.

Fieldwork: mitigating circumstances

Attendance in field trips is mandatory for all students. Students who are unable to attend due to mitigating circumstances must provide valid evidence to support their absence. If mitigating circumstances apply and are accepted by the Discipline, students will be required to attend an alternative field trip during the summer/reassessment period to fulfil the learning outcomes. Exemption from field trips is not permitted.

Facilities, Conduct and Safety

The Discipline of Geology is primarily located in the Museum Building. Geology has several dedicated facilities in the Museum Building that may be used by undergraduate students. For enquiries please contact the Chief Technical Officer.

Laboratories

The **Geology Teaching Laboratories** (Petrology Lab, Palaeontology Lab, Microscopy Lab) are the primary teaching laboratories in the Discipline of Geology. The laboratories are mainly used for lectures and non-hazardous lab work involving geological hand specimens, maps, and thin sections.

The **Geology Technical Laboratory** houses our very own in-house geological thin section sample preparation facility. It also acts as a hub for Discipline of Geology fieldtrip equipment collection and returns.

The Discipline of Geology has a variety of other analytical and sample preparation laboratories and facilities including but not limited to, rock crushing, mineral separation, scanning electron microscope (SEM), x-ray fluorescence spectroscopy (XRF), etc. Find more at https://www.tcd.ie/geology/research/research-facilities/.

The labs are open from 8:00 am to 5:00 pm during term time. Outside of these hours, students must request access from technical staff.

More information:

The Chief Technical Officer is the first point of contact for all laboratory and equipment related enquiries.

Capstone students must submit a "SNS Technical Support Request: UG and Taught PG Capstone/Dissertation Projects" form which is available from the technical staff.

Before accessing any laboratory or using equipment students must have:

- Completed the relevant training (lab inductions, protocols etc.)
- Completed a risk assessment signed by their supervisor
- Permission from staff to use the lab

Safety

The School of Natural Sciences in conjunction with the College Safety Office and under the Safety, Health and Welfare at Work Act 2005 is a safe working environment which keeps its members safe and protected across all its teaching and research activities.

All School members must read and agree to abide by the School Safety Statement and where appropriate the Fieldwork Safety Manual.

Safety Statement, Fieldwork Manual and Risk Assessments, are available at https://www.tcd.ie/naturalscience/health-and-safety/.

Students will be given class based or one to one instruction on health, safety and welfare.

More general information is available from the University Safety Office at https://www.tcd.ie/safetyoffice/

Emergencies

Situations which may require emergency response include:

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

In the event of an emergency, contact the college Emergency number Ext 1999 (from an internal line) or 01 896 1999 (from a mobile). You should give your name, location and the

nature of the emergency. If necessary, you can evacuate the building by using one of the break-glass units.

Laboratory Safety

Laboratory protocols exist for each of the laboratories within the Discipline of Geology. The Laboratory protocol must be signed off before using any of the laboratories. Any new experimental or project work taking place in any of the laboratories will require a Laboratory Risk Assessment to be completed before the work can begin. Assessments need to be approved by your Supervisor and in some cases the Head of Discipline before the work can commence.

More information can be fount at: https://www.tcd.ie/naturalscience/health-and-safety/

Fieldwork Safety

Fieldwork is an important part of Geology research and teaching. Any staff member, postdoctoral researcher, postgraduate student or undergraduate student must read the School of Natural Sciences Fieldwork Manual (https://www.tcd.ie/naturalscience/health-and-safety/) prior to undertaking fieldwork.

Capstone projects: undergraduate students must initially discuss the proposed fieldwork with their academic supervisor and obtain their consent prior to undertaking any fieldwork.

A Fieldwork Risk Assessment must be undertaken before embarking on any fieldwork. The risk assessment must be approved by your Supervisor and in some cases the Head of Discipline before the fieldwork can commence.

Fire Safety

The Fire Wardens for the Discipline of Geology are Sarah Carty and Maura Morgan. However, individuals are responsible for checking the fire precautions in their work areas. Any defects or potential fire hazards should be reported to the Discipline Fire Wardens or to the Head of Discipline immediately.

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

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

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

First Aid

If a student is injured or falls ill during a class, laboratory practical or fieldtrip, the person in charge must be informed immediately. First Aid Kits are located in the Administration Office, Geology Technical Laboratory, Palynology Laboratory, Geomorphology Laboratory, Basement Laboratory and Freeman Library.

The First Aid Kits contain a range of dressings and bandages for treatment of minor cuts and burns as well as eyewash solution. If you use any items from the First Aid Kits, please inform a Safety or Technical Officer so the items can be replaced.

Staff trained in Occupational First Aid for the discipline: Elaine Treacy (Room 0.9B) and James Canavan (Room B8).

All accidents must be reported to the Discipline Safety Officer and entered in the accident book which is kept in room B8A. An accident report form will be completed for each incident. If an injury requires a doctor or nurse, the college health centre number is Ext 1556 (from an internal line) or 01 896 1556 (from a mobile). The doctor should be informed of when and where the

illness took place. In emergencies where immediate attention or ambulance is required call the emergency number Ext 1999 (or 01 896 1999 from a mobile).

Security

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

If you encounter an intruder or if a person seems to be acting suspiciously, inform a member of staff or phone: Security Office, Front Gate - ext 1317/1999.

Erasmus

All TR062 students have the opportunity to study abroad in their Junior Sophister year through the Erasmus exchange programme or the College-wide non-EU exchange programme.

Erasmus programmes are coordinated separately by the Disciplines of Geology and Geography for students choosing the TR062 Geosciences and Geography moderatorships, respectively, whereas non-EU exchanges are coordinated independently by the Trinity Global Office and are not arranged at a discipline level.

Geoscience students are currently only permitted to study abroad in semester one of their Junior Sophister year. Geoscience students are not permitted to study abroad in semester two, with no exceptions. Students can only apply for either an Erasmus or non-Erasmus exchange, not both. The single semester exchange is equivalent to taking exchange modules totalling 30 ECTS credits.

Available Erasmus partner universities for Geoscience students include institutions in France, Iceland, Norway, the Netherlands and Sweden. Please note that Erasmus exchange partners are subject to change, and the institutions listed are not guaranteed to be available in any given year.

Any student going on an international exchange (Erasmus or non-Erasmus) must achieve a minimum of 60% average mark in their first AND second year examinations. This is a hard cutoff with no exceptions. Nominations for Geoscience Erasmus places will be decided based on a combination of Junior Freshman results and a 600-word Statement of Interest.

IMPORTANT NOTE: Students on Erasmus are required to attend the Greece field trip (GSU33007) in semester 2. Field trips are a vital component of the programme, and key skills may be missed if no field trip is attended in Year 3.

Erasmus coordinator: Dr. Matthias Sinnesael

Attendance requirements

All students are required to attend College in person during the teaching term and fully participate in the academic work of their class throughout the course period.

Timetables are published through my.tcd.ie before the beginning of the teaching term. It is the responsibility of students to inform themselves of the dates, times, and venues of their lectures and other forms of teaching by consulting these timetables.

Attendance at all lectures, tutorials, and practical sessions is compulsory for students in the TR062 Geography and Geoscience programme. Students will 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**.

Students who are unable to attend due to illness or other unavoidable circumstances are required to notify the relevant lecturer and submit a medical certificate or other appropriate documentation to the TR062 Office.

Students reported as Non-Satisfactory in the Michaelmas and Hilary terms may be refused permission to take their annual examinations and may be required by the Senior Lecturer to repeat the 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/

Assessment Regulations

Reassessment - Regulation 8: Undergraduate Progression and awards regulations

- Same progression regulations, including compensation, for assessments relating to semesters 1 & 2 and to reassessment.
- Automatic right to reassessment for a student who has achieved a fail grade in any of their modules and is not eligible for compensation.
- Students (in all years) should only be required to re-sit examinations or re-submit coursework for failed modules or components thereof.
- Students are not permitted to present for reassessment in any module for which they have achieved a pass grade, in order to improve their academic performance.
- Rescheduled exams within the session will no longer be permitted.
- Different reassessment modalities permitted.
- No capping of marks

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

- Students are not permitted to repeat any academic year more than once and may not repeat more than two academic years within a programme.
- Repetition of a year is in full, i.e., all modules and all assessment components
- A student's academic record on their transcript will show clearly the time lost through repetition of a year.
- There will be an option to repeat a year on an 'off-books' basis.

Degree award calculation: Regulation 5: Undergraduate Progression and awards regulations

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

Full Progression and Awards regulations can be found via the following:
https://www.tcd.ie/teaching-learning/academic-affairs/ug-prog-award-regs/index.php

Examinations

The regulations governing examinations are set out in the College Calendar. Examination timetables are published in advance of the dates of examinations. Please check the examinations office website for more details: https://www.tcd.ie/academicregistry/exams/.

Students must ensure that they are available for the duration of the examinations period as presented in the College Calendar: http://www.tcd.ie/calendar/. It is the student's responsibility to establish the dates, times and venues of examinations. No reminders will be sent to students.

The Discipline employs anonymous marking where practically possible. Results will be published by student number.

Late Submissions and Extensions for Module Assignments

Developing effective time management strategies and taking personal responsibility for learning is a key skill that students need to master in order to succeed at university and beyond. All students enrolled in modules delivered by the School of Natural Sciences are required to be well prepared for their continuous assignment work, and to submit their work on time and by the deadlines communicated to them by their module coordinator.

Students should note that for some modules it is not possible to grant an extension on coursework due to assignment structure and timing, this will however be clearly communicated by the module coordinator. In addition, no extensions can be given for requests arising from a lack of organisation of work around other activities, or a lack of planning on the student's part. All students must allow time for contingencies in their planning when completing assignments

If students experience truly exceptional and unforeseen circumstances that affect their ability to submit work on time, they are asked to contact their module coordinator via email in the first instance and as soon as the issue arises. The student's tutor should also be copied in on this initial email request, and all students are strongly encouraged to also approach their tutor

for assistance and support in addressing any underlying reasons that are contributing to their extension request.

Extensions for module assignments and acceptance of late submissions will only be granted when supported by verified evidence of exceptional and unforeseen circumstances at the discretion of the module coordinator. If students submit work late without having been granted an extension by their module coordinator, the following reduction to the mark for the assignment will apply:

- For submissions up to three days late: 5% per day including weekends.
- Submissions received more than three days late (including weekends), without a pre-agreed extension, a medical certificate or documented evidence of significant extenuating circumstances, will not be marked.

The registered time of submission will be the time recorded on email or Blackboard for the submission.

Students experiencing difficulties staying on top of their work on medical or other grounds should contact their tutor as soon as their concern arises. Further information can be found in part II of the College Calendar (General Regulations 45).

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/calendar/undergraduate-studies/
- https://libguides.tcd.ie/academic-integrity
- https://www.tcd.ie/teaching-learning/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.

If any additional restrictions on the use of Generative Artificial Intelligence (GenAI) apply to a particular module, these will be stated in the module description on Blackboard or communicated to students by module coordinators.

Prizes, awards and scholarships

Foundation Scholarship Examination

The objective of the Scholarship examination in Science is to identify and reward undergraduate students with outstanding knowledge and ability in each of the four Science degree programmes (TR060, Biological and Biomedical Sciences; TR061, Chemical Sciences; TR062, Geography and Geoscience; TR063, Physical Sciences). Such students should demonstrate an understanding and knowledge of their chosen field with some degree of originality and flair, and not simply a high level of performance in basic coursework. The Scholarship examination is taken by Senior Fresh students in each degree and is based on the designated course work presented in the Junior Fresh and the first semester of the Senior Fresh years. In addition, students might also be examined on designated non-coursework material, which is specific for each degree.

The Foundation Scholarship examination in Geography and Geoscience seeks to identify exceptional students who:

- Show a comprehensive understanding of the foundational material covered in modules up until the end of Michaelmas Term in the Senior Fresh year;
- Demonstrate an ability to critically engage with selected topics drawn from the broader fields of Geography and Geoscience.

Candidates will sit three papers, each of 3 hours duration:

- Paper 1 (30%): Answer 3 questions from 6 based on material covered in GSU11001: Spaceship Earth and GSU11003: The Anthropocene.
- Paper 2 (30%): Answer 3 questions from 6 based on material covered in GSU11002: Planet Earth; GSU22201: From Atoms to Rocks – Introduction to Geochemistry; and GSU22202 Sedimentary Processes and Environments.

- Paper 3 (40%): Answer 3 questions from 6 based on a selected theme, for which special reading will be set as an introduction

> **Note:** the information provided here is accurate at time of preparation. Any revisions will be notified to students via e-mail and at the Science Course Office Website: https://www.tcd.ie/Science/

Other scholarships

ADRIAN PHILLIPS FUND

This fund was established in 2003 by a gift from Professor Adrian Phillips. The fund is to be operated by the Department of Geology to support the teaching of students in field-based techniques in the earth sciences. Approximate annual value, €800.

DAVE JOHNSTON MEMORIAL FUND

Established in 1998 in memory of Dave Johnston by his family and friends to support field based studies by undergraduate and postgraduate students in geology. The annual income of the fund may be awarded to one or more projects in any year. The fund will be administered by the Professor of Geology, another member of the Department of Geology and a representative of the alumni of the Department of Geology. Applications should reach the Professor of Geology by the last day of Hilary term in the year in which the grant is to be held. Approximate annual value, €500.

PAUL AND JACKIE BLUNDELL SCHOLARSHIP

The Paul and Jackie Blundell scholarship was established in 2023 through a generous gift of Trinity alumni Paul and Jackie Blundell. The scholarship will support undergraduate students in geosciences with demonstrated need, to undertake fieldwork or to engage in study visits in

support of their research projects. Specimen analysis costs are not supported. It is anticipated that several awards will be made per annum. Approximate annual value, €6,000, but across multiple students with a cap of €1500 per student.

JULIAN BOLDY BURSARY

This bursary was established in 1992 in memory of Julian Boldy by his friends John and George Kurkjian. The bursary is awarded annually to help support (but excluding conferences) a postgraduate student(s) in (or exceptionally an undergraduate) student in Geology. Approximate annual value, €1,650

Prizes

JULIAN BOLDY PRIZE IN GEOSCIENCE

This prize was founded in 1987 by a gift from Mrs Margaret P. Boldy in memory of the late Julian Boldy. It is awarded annually on the basis of the Junior Fresh examination in geoscience. Value, €83.

EDGE PRIZES IN GEOSCIENCE

Two prizes are awarded annually, one to the **Junior Sophister** who obtains the highest marks at the Junior Sophister honour examination in geoscience and whose work in that examination is of appropriate standard; the other to the **Senior Fresh**, intending to moderate in geoscience, who has shown most promise. Value of each prize, €223.

CHARLES H. HOLLAND PRIZE

This prize is awarded to the student obtaining the highest overall mark in the geoscience moderatorship. Value, €100.

W.E. ADRIAN PHILLIPS PRIZE

This prize is awarded to the student who produces the best geological survey project in the geoscience moderatorship. Value, €100.

VICTOR TALBOT AWARD

This award is intended to encourage a talented Geoscience student to further their passion for environmental/ecological protection. It is anticipated that this commitment would be sustained later in life by the winner. The principle criterion for the award is a demonstrated or espoused commitment to environmental protection through course work, final year research project, non-curricular activities or all three. Value, €100.

GEOLOGY CHAIR AWARD

This award is given to a graduating student in Geoscience in recognition of outstanding and spirited contributions to their class at Trinity College Dublin. Value, €100.

Contact Details

Staff Name	Role/Title	Contact
Dr. Christopher Nicholas	Head of Discipline of Geology	nicholyj@tcd.ie
Dr. Sean Mc Clenaghan	TR062 Geography and Geoscience Programme Director	mcclens@tcd.ie
Ms. Debora Dias	TR062 Executive Officer	tr062admin@tcd.ie
Dr. Michael Stock	TR062 Geoscience Moderatorship Exams Coordinator	michael.stock@tcd.ie
Dr. Matthias Sinnesael	TR062 Geoscience Moderatorship Erasmus Coordinator	sinnesam@tcd.ie
Dr. Elaine Treacy	Chief Technical Officer	treacyel@tcd.ie

Key dates

WEEK	WEEK BEGINNING	Notes
3	08-Sep-2025	12 September (Friday) to 17 September (Thursday) GSU33007 Junior Sophister Fieldtrip
4	15-Sep-2025	
5	22-Sep-2025	Lectures begin
10	27-Oct-2025	Study/Revision week
15	01-Dec-25	Last week of in-class activities Semester 1
16	08-Dec-2025	Study/Revision week Semester 1 assessment session: December 11 to 22, 2025 inclusive (No assessment after Dec 22nd)
17	15-Dec-25	Semester 1 assessment session: December 11 to 22, 2025 inclusive (No assessment after Dec 22nd)
18	22-Dec-25	
19	29-Dec-25	Christmas closure
22	19-Jan-26	Teaching and learning resume
28	02-Mar-26	Study/Revision week
32	30-Mar-26	Last week of in-class activities Semester 2
		Submission deadline for Capstone projects

33	06-Apr-26	Spain and Greece field trip
34	13-Apr-26	Spain and Greece field trip
35	20-Apr-26	Semester 2 assessment session: April 21 to May 1, 2026 inclusive
36	27-Apr-26	

IMPORTANT NOTE:

Field trip dates are subject to change. Final dates will be confirmed by the course coordinators. For any queries, please contact TR062Admin@tcd.ie.

Assessment Session: the exams timetable will be released by the Exams Office. For any queries, please contact ASKEXAMS@tcd.ie.

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.

Prerequisites: None

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

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%)

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%).

GGU33021 Research Skills and Data Analysis in Geomorphology 2 (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. This module focuses on the role of water in the evolution of Earth's landscape. Though 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%).

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%).

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

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

This is an introductory course in marine biogeochemistry. The ocean plays a central role in Earth's climate system, and marine biogeochemical processes regulate the impact of human activity on the global environment. Marine biogeochemistry hence provides a working knowledge of how the earth system functions and reacts to human activity, providing insights into how life formed, evolved, is sustained, and is endangered on Earth. This knowledge provides an understanding of how to adapt to climate and environmental change, enhance food production, manage fisheries and aquaculture, mitigate pollution, and innovate by developing new products including more sustainable food and decarbonation technologies.

This module concentrates on the marine biogeochemical phenomena that regulate the earth's climate and control the diversity, distribution, and productivity of marine life.

Topics covered include the physical, biological, geological, and chemical processes that control the creation, distribution, and fate of organic matter in the marine environment, the composition of seawater and the atmosphere, and the formation and preservation of marine sediments. The course will prepare students for related courses, field and laboratory work in the marine, earth, and environmental sciences and careers in the marine & environmental sector.

Prerequisites: None

Assessment: Course work (100%)

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%).

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%)

GLU33006 Stratigraphy: Earth Through Time (5 Credits)

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

We live on a planet that has evolved dramatically since 4.55 billion years ago (Ga). As known from the geological record, there was little oxygen in the atmosphere until about 2.6 Ga, while equatorial latitudes had thick ice sheets at 650 million years ago (Ma), and greenhouse conditions turned the poles ice free at 100 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%)

GLU33007 Earth Resources for a Critical Future (5 Credits)

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

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 or 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%).

GLU33009 Hydrology and Groundwater Quality (5 Credits)

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

This module aims to provide students with an understanding of hydrological processes, following the different pathways of water through the terrestrial part of the hydrological cycle. It also aims to familiarise students with the factors affecting groundwater quality, and to develop an understanding of groundwater quality issues in the context of integrated catchment management.

The hydrology component of this module includes the following topics:

- the hydrological cycle and catchment water balances;
- rainfall and evapotranspiration;
- soil water and hillslope hydrology;
- river flow; hydrogeology;
- groundwater – surface water interaction.

The groundwater quality component includes:

- groundwater chemistry and natural groundwater quality problems;
- groundwater quality issues in rural and industrial settings;
- groundwater vulnerability and protection.

The interaction of groundwater and surface water quality is also considered.

Prerequisites: None

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

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%).

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%)

GLU33027 Junior Sophister Field Skills (5 Credits)

Module Coordinator: Dr Christopher John 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%)

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.

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 research skills 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, critical evaluation of academic literature, and presentation skills.

Prerequisites: None

Assessment: Coursework (100%)

GSU33003 Ice Age Earth (5 Credits)

Module Coordinator: Dr Robin James Edwards (robin.edwards@tcd.ie)

The last 2.6 million years of Earth history have witnessed dramatic climatic and environmental changes. This module provides an overview of these major environmental changes, their causes, and their significance for human development. It contrasts 'glacial' and 'interglacial' worlds, examines the nature of the transitions between them, explores some potential causes of change, and illustrates their environmental impacts. In the process, a range of key environmental records are considered, along with the "proxies" used to develop them.

Prerequisites: None

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

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.

Senior Sophister Modules

GGU44902 Karst Landscapes (5 Credits)

Module Coordinator: Dr Pete Akers (akersp@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: Course work (100%)

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%)

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: Course work (100%)

GLU44004 Advanced Volcanology and Igneous Petrology (5 Credits)

Module Coordinator: Dr Michael Stock

Details: 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%)

GLU44006 Carbonates: from the Atomic to Planetary Scale (5 Credits)

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

Carbonate minerals constitute the Earth's largest reservoir of carbon and thus take a key role in the carbon cycle. Their occurrence is widespread, forming primary deposits in natural waters (e.g., oceans, lakes, hydrothermal systems and caves) through precipitation from supersaturated waters. They can form in many different environments, from carbonate-rich magmas, to biomineralisation, or as secondary minerals during the weathering of primary silicates during reactions with dissolved CO2 or organic compounds.

This module provides a review of the most important carbonate minerals, their stability, reactivity and natural distribution. After an introduction on the importance of carbonates in Earth and planetary sciences, technology, carbon capture and storage and environmental sciences, we will focus on the chemistry and structures of carbonate minerals and the discussion on the processes that lead to adsorption and uptake of foreign ions by these minerals. The module concludes with the principal methods for carbonate synthesis and key tools for characterisation.

Prerequisites: None

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

GLU44008 Early Earth Evolution (5 Credits)

Module Coordinator: Dr David Chew (chewd@tcd.ie); Dr Emma Tomlinson (tomlinse@tcd.ie)

The module introduces the various types of metal ore deposits with an emphasis on base metals, including Irish zinc deposits. For each type of deposit, students will be exposed to the most common ore minerals in hand specimen, and for selected types, drill cores containing relevant rock types. Deposit types will be explained in the petrologic context that most commonly hosts the ores. Finally, the strategies for mineral exploration and the economics of mineral exploration and production will be explained with case studies.

Prerequisites: None

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

GLU44009 Geoscience for a Sustainable Planet (5 Credits)

Module Coordinator: Dr 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 utilization 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%).

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%).

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%).

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, lithogeochemical 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%)

GLU44020 Cyclostratigraphy and Astrochronology (5 Credits)

Module Coordinator: Dr Matthias Sinneasael (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 highresolution 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: None

Assessment: 100% Coursework

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:

b) 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 John 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)

GSU44002 Senior Sophister Geoscience Field Course (5 Credits)

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

This module comprises a one-week 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). 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.

GSU44003 Geoscience Frontiers: Past, Present and Future (5 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 (100%)

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

Student Services

For general information on the Supports and Services available to Trinity Students please visit: https://www.tcd.ie/students/supports-services/.

This is a comprehensive site which breaks down the different categories of support and services available to students is an intuitive manner.

Trinity Tutorial Service (Undergraduate Students)

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 coordinated 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/

Student 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.

For new students: https://www.tcd.ie/sld/your-student-journey/new-to-trinity/

For Undergraduate Students: https://www.tcd.ie/sld/your-student-journey/undergraduate-students/

For Postgraduate Students: https://www.tcd.ie/sld/your-student-journey/postgraduate-students/

For general information on all resources and supports available visit: https://www.tcd.ie/sld/

Student Health and Wellbeing

College Health Service

Trinity Health Services have GP services available for the following Opening Hours:

Please contact us on 01 8961556 or 01 8961591 between 9am and 1pm and from 2-4:30pm

You can email collegehealth@tcd.ie , but please note that this email is NOT FOR ANY MEDICAL/CLINICAL enquiries and is not manned to manage clinical/medical enquiries, strictly only admin.

The Physiotherapist operates daily between 09.00 and 13.00 and also Monday/Tuesday afternoons during term time.

For further information visit: https://www.tcd.ie/collegehealth/

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

For further information visit the following webpage: https://www.tcd.ie/StudentCounselling/

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). AR is located in in the Watts Building, on the first floor, or visit the AR website: https://www.tcd.ie/academicregistry/

Queries can be emailed to academic.registry@tcd.ie, or you can telephone 01 896 4500 during office hours.

Student Accommodation

CAMPUS: The Accommodation Office is open Monday to Friday from 8.30am to 1pm and 2pm-5pm each day. Queries can be emailed to residences@tcd.ie, or you can telephone 01 896 1177 during office hours.

After hours you can contact Front Gate at 01 896 3978 in case of difficulties or key problems. In Goldsmith Hall attendants are on duty in the residential area at weekends and overnight and they will assist with local problems.

In the event of a serious emergency, particularly where you require the attendance of ambulance, fire or police services please telephone College Security at 01 896 1999 (internal 1999).

To ensure a co-ordinated response please do not call these services directly. We recommend that you programme these numbers into your mobile phone using the prefix “01” before the number. https://www.tcd.ie/accommodation/

Appendix 1

Item	Reference/Source
Statement on General Regulations	Calendar, Part II, General Regulations and Information, Section II, Item 12 Calendar, Part III, GeneralRegulations, Section I
Student Supports Co-curricular activities TCDSU, GSU & student representationstructures	Student Supports
Emergency Procedures	**Standard Text:** In the event of an emergency, **dial Security Serviceson extension 1999** Security Services provide a 24-hourservice 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 alwaystelephone extension 1999 (+353 1 896 1999) in case of an emergency. Should you require any emergencyor rescue services on campus, you must contact Security Services. This includes chemical spills,personal injury or first aid assistance. It is recommended that all studentssave at least one emergency contact in their phone under ICE (In Case of Emergency).
Data Protection	Data Protection for StudentData

Research Ethics	Policy on Good ResearchPractice
Key Locations for students: Include Programme Offices, Laboratories, Online Learning Environments, Libraries, AcademicRegistry, Places of Faith/Prayer Rooms, Photocopiers and any relevant introductory information on these locations	Blackboard Academic Registry

Item	**Reference/Source**
Plagiarism &Referencing Guidance	Calendar, Part B, General Regulations and Information Calendar, Part III, General Regulations & Information, Section I 'Plagiarism' Plagiarism Policy
Health and Safety Statements	Faculty of Science Engineering, Mathematics and Science website - https://www.tcd.ie/stem/undergraduate/health-safety.php
Foundation Scholarships	Calendar, Part II, Foundation and Non-FoundationScholarships
Absence fromExaminations	Calendar, Part B, General Regulations and Information Calendar, Part III, Section III,'Examinations, Assessment and Progression' Academic Policies

Reference to Relevant University Regulations	Academic Policies Student ComplaintsProcedure Dignity and Respect Policy - Equality, Diversity and Inclusion | Trinity College Dublin (tcd.ie)
May include Programme Offices, Laboratories, Online Learning Environments, Libraries, Academic Registry, Places of Faith/Prayer Rooms, Photocopiers and any relevant introductory information on these locations	Blackboard Academic Registry
Timetable for students	My TCD
Internships/ Placements forCredit	Internship and PlacementPolicy.
Programme Architecture	Trinity Education ProgrammeArchitecture and Pathways
Item	**Reference/Source**
Marking Scale	Calendar, Part B, General Regulations and Information
Progression Regulations	Calendar, Part II, General Regulations & Information Calendar, Part II, Part C Calendar, Part III, Section III 'Examinations, Assessment and Progression' and 'Assessment and Progression Regulations'
Awards	National Framework forQualifications Trinity PathwaysTrinity Courses
Professional andStatutory Body Accreditation	Provided by School/Discipline Handbooks where applicable

Careers Information &events	https://www.tcd.ie/Science/careers/
External Examiner	Procedure for the transfer ofstudents assessed work to external examiners
Capstone (UG Programmes)	Capstone website Policy on Good ResearchPractice
Attendance Requirements	Calendar, Part B, General Regulations and Information Calendar, Part III, General Regulations and Information, Section I 'Attendance and Off-Books'; Section II 'Attendance'; Section III 'Attendance, Registration, Extensions'; Section IV 'Attendance and Examinations'
Feedback andEvaluation	Student Evaluation andFeedback Student Partnership Policy Procedure for the conduct ofFocus Groups