

# BSC (HONS) GEOSCIENCE

## Overview

### NFQ Level 8, Major Award

Students enter Second Science Geoscience through the First Science Area of Study: Biological, Earth and Environmental Sciences (CK404) (<https://ucc-ie-public.courseleaf.com/programmes/bscr/>) provided they have passed First Science.

The Fourth Science Research Project or Mapping Project **must** be passed for the award of a BSc (Hons) Degree.

## Elective Modules

The selection of elective modules in Third and Fourth Years may depend on the student having the necessary prerequisites. Elective modules must, therefore, be chosen in consultation with the appropriate Head of Discipline. In exceptional cases, the Academic Board of the School of Biological, Earth and Environmental Sciences and the College will be prepared to consider applications for alternative elective modules in Third Year. Modules that have been taken and passed in one year of study may not be re-taken in a subsequent year.

## BSc Ordinary Degree - NFQ Level 7, Major Award

Students who pass Third Year may choose not to proceed to Fourth Year and may opt instead to be conferred with a BSc Ordinary Degree.

## Programme Requirements

For information about modules, module choice, options and credit weightings, please go to Programme Requirements (p. 1).

## Programme Requirements

Code	Title	Credits
<b>Year 1</b>		
Students take <b>60</b> credits as follows:		
<i>Core Modules</i>		
BL1002	Cells, Biomolecules, Genetics and Evolution	5
BL1004	Physiology and Structure of Plants and Animals	5
BL1006	Habitats and Ecosystems	5
BL1009	Grand Challenges in Biological, Earth and Environmental Sciences	5
CM1003	Introductory Chemistry for Environmental Scientists	10
EV1002	Introduction to Environmental Science	5
GL1001	Introduction to Geology	5
GL1004	Geological Evolution of Ireland	5
GG1010	Introduction to Physical Geography	5
MA1001	Calculus for Science Part 1	5
PY1009	Physics for the Environmental Sciences I	5
<b>Year 2</b>		
Students take <b>60</b> credits as follows:		
<i>Core GS Modules</i>		
GS2001	Dynamic Earth	5
GS2002	The Evolving Earth	5
GS2016	Field Geoscience	5
<i>Core GG Modules</i>		

GG2005	Ice Age Quaternary Environments and Geomorphology	5
GG2037	Introduction to Geoinformatics	5
<i>Core EV Modules</i>		
EV2002	The Environment and Human Health	5
EV2003	Practical Data Analysis and Research Skills	5
<i>Core AE/CM/PY/ST/ZY Modules</i>		
AE2001	Fundamentals of Ecology	5
CM2101	Introductory Organic Chemistry for Environmental Scientists	5
PY2009	Physics for the Environmental Sciences II	5
ST2001	Introduction to Biostatistics	5
ZY2005	Invertebrate Diversity	5

### Year 3 (from 2024/25 onwards)

Students take **60** credits as follows - all listed core modules (**45** credits) and **15** credits of elective modules, chosen from one of the three themes below:

#### *Core ER/GL/GS Modules*

ER3052	Earth Science Literature Review	5
GS3010	Mineralogy, Igneous and Metamorphic Petrology	5
GL2011		5
GL2017		5
GL2019		5
GL3009	Crustal Evolution of Britain and Ireland	10
GS3001		5
GS3002		5

#### *Elective Modules*

Students take modules to the value of **15** credits from one of the following three themes:

#### Theme 1 (Geological) GG/GL Modules

GG3012	Advanced Geographical Information Systems (5)
GG3056	Climate Change and Historical Climatology (5)
GL3007	Evolution for Geologists (5)
GL3031	Environmental Hydrogeology (5)
GL3032	Geochemistry (5)

#### Theme 2 (Environmental) EV/GG/GL Modules

EV3013	Pollution Prevention and Control (5)
GG3012	Advanced Geographical Information Systems (5)
GG2046	Atmosphere, Weather and Climate (5)
GL3031	Environmental Hydrogeology (5)
GL3032	Geochemistry (5)

#### Theme 3 (Palaeobiological) BL/GL/PS/ZY Modules

BL3002	Evolution & Diversity (5-10)
or GL3007	Evolution for Geologists ()
GL3032	Geochemistry (10)
PS2003	Plant Identification (5)
ZY2000	Vertebrate Diversity (5)
ZY3022	(5)

### Year 4 (from 2025/26 onwards)

Students take **60** credits as follows - all listed core modules (**35** credits) and **25** credits of elective modules, chosen from one of the three themes below:

#### *Core GL Modules*

GL3004	Applied Structural Geology	5
GL4029	Environmental Sedimentology	5
GL4004	Advanced Igneous Processes	5
GL4030	Geoscience Final Year Project	15
GL4031	Frontiers in Geoscience	5

#### Elective Modules

Students take modules to the value of **25** credits from one of the following three themes (students are required to follow the same theme they chose in Third Year):<sup>1</sup>

#### Theme 1 (Geological) ER/GG/GL/GS Modules

ER4004	Practical Offshore Marine Science (5)	
GG3041	Environmental Remote Sensing (5)	
GG3007	Marine and Coastal Geosciences (5)	
GL4011	Economic Geology (5)	
GL4020	Geological Work Placement (5)	
GL4023	Neotectonic Field Studies (5)	
GL4024	Advanced Palaeobiology (5)	
GS4001	(5)	

#### Theme 2 (Environmental) ER/EV/GG/GL/GS Modules

EV4012	Environmental Impact Assessments (5)	
ER4004	Practical Offshore Marine Science (5)	
GG3041	Environmental Remote Sensing (5)	
GG3007	Marine and Coastal Geosciences (5)	
GG3056	Climate Change and Historical Climatology (5)	
GL4020	Geological Work Placement (5)	
GL4023	Neotectonic Field Studies (5)	
GS4001	(5)	

#### Theme 3 (Palaeobiological) AE/BL/ER/GL/GG/ZY Modules

AE4016	Advanced Ecology and Biogeography (5)	
BL3003	Conservation Biology (5)	
ER4004	Practical Offshore Marine Science (5)	
GG3056	Climate Change and Historical Climatology (5)	
GL4020	Geological Work Placement (5)	
GL4023	Neotectonic Field Studies (5)	
GL4024	Advanced Palaeobiology (5)	
ZY4021	Evolutionary Ecology (5)	

**Total Credits** **240**

## Examinations

Full details and regulations governing Examinations for each programme will be contained in the *Marks and Standards Book* and for each module in the *Book of Modules*.

## Programme Learning Outcomes

### Programme Learning Outcomes for BSc in Geoscience (NFQ Level 8, Major Award)

On successful completion of this programme, students should be able to:

- Show a clear understanding of planet Earth as an integrated system, involving application of all aspects of the Geosciences including the physical, chemical and biological sciences to the study of the solid Earth, oceans and atmosphere;

- Demonstrate a mastery of geoscience principles, concepts and terminology and understand their relevance to the world of today particularly in the context of geological time and global change;
- Have competence in identifying rocks, minerals and fossils both macroscopically and microscopically in a laboratory and field environment and place them in a context of modern Geoscience;
- Apply the principles of collection, analysis and interpretation of Geoscience data while undertaking an independent field-based geoscience research project;
- Recognise and interpret the large-scale internal Earth processes and the features produced by them. Have a good working knowledge of the theory of plate tectonics;
- Be conversant with the principles of sedimentation and stratigraphy and the broader concept of geological time;
- Source information on current geoscience issues and critically appraise it for scientific credibility and relevance particularly in the context of geohazards (e.g., earthquakes, flooding, landslides), their monitoring and mitigation;
- Synthesise and apply published information and data from the Earth sciences to the analysis of geoscience and environmental problems;
- Communicate effectively, orally and in written reports, about Earth and other related environmental issues.