

1. Programme Title(s) and Code(s):

<i>Programme Title</i>	<i>UCAS Code</i>	<i>GU Code</i>
MSci in Earth Science		F640A-2207

2. Academic Session:

2019-20

3. SCQF Level (see [Scottish Credit and Qualifications Framework Levels](#)):

11

4. Credits:

600

5. Entrance Requirements:

Please refer to the current undergraduate prospectus at:
<https://www.gla.ac.uk/undergraduate/degrees/earthscience>

6. ATAS Certificate Requirement (see [Academic Technology Approval Scheme](#)):

ATAS Certificate not required

7. Attendance Type:

Full Time

8. Programme Aims:

Earth Science is the study of the Earth System, in particular the interaction of geology with surface processes and environments and associated natural and anthropogenic changes. Earth Science focuses on the study of climate change, water resources, landscape evolution, environmental and natural hazards, and the application of Earth system science and geology to real world socio-environmental problems.

¹ This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if full advantage is taken of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each course can be found in course handbooks and other programme documentation and online at www.gla.ac.uk/

The accuracy of the information in this document is reviewed periodically by the University and may be checked by the Quality Assurance Agency for Higher Education.

The aims of the Earth Science programme encompass a detailed understanding of the Earth System and in particular environmental problems and challenges. The MSci programme builds from an introduction to Earth Science and its applications into a broader and deeper understanding in the Honours courses, before concluding with high level independent research, focused on critical and quantitative analysis of Earth System science problems, including advanced analytical methods and science communication – the programme involves theoretical study and extensive practical work in the laboratory and field, including geomorphological and geological mapping, Earth observation, spatial and numerical analysis, and resource and hazard management and conservation.

The programme aims to:

- Enable students to develop their capacity to learn and in particular to develop their;
 - ability to synthesize a range of geological data and apply to environmental problems
 - descriptive, observational, interpretation and communication skills
 - problem-solving capacities and reasoning skills in theoretical, laboratory and field solutions
- Provide students with the knowledge-base, transferable skills and employability skills that they will require in further study and graduate employment

9. Intended Learning Outcomes of Programme:

The programme provides opportunities for students to develop and demonstrate knowledge, understanding and skills in the following areas.

By the end of this programme students will be able to:

- Demonstrate advanced theoretical and practical knowledge and understanding of the central facts, concepts and terminology of Earth Science, and the application of these skills to understanding the Earth System (the integration of geology with the surface, the atmosphere and the biosphere) and to address societal-economic problems.
- Demonstrate detailed theoretical and practical knowledge of the core Earth Science subjects (Climate Science, Geomorphology, Landscape Evolution, Surface Processes, Hydrogeology and Environmental Geochemistry, Isotope Geoscience, Environmental Hazards, GIS and Remote Sensing, Map Interpretation, Geophysics, Applied and Economic Earth Science, and Earth Science Fieldwork, and in a range of options subjects.
- Critically assess and synthesize literature and other sources of information and use evidence to formulate and test hypotheses.
- Collect, record and analyse field, numerical and spatial data, and present results and interpretations in scientific reports, to solve Earth Science and Earth System problems.
- Plan and execute projects both independently and as part of a team.
- Plan and carry out experimental investigations, using standard and complex or advanced experimental equipment and apparatus, of complex Earth Science systems or processes, demonstrating logic, initiative, planning and decision making skills in solving problems encountered.
- Present outputs in appropriate ways for both specialist and non-technical audiences, including verbally, in writing, graphically, and in digital/social media formats.
- Demonstrate competence in safety techniques and the assessment of risks for field work.

10. Typical Learning and Teaching Approaches:

Learning and teaching are effected by the following methods:

Lecture Format: Lectures, IT instruction, Video presentations, Lecture-demonstrations.

Practical and Field Format: Laboratory work, Project work, Database/modelling work, Reports/Essays, Group discussion, Seminar instruction and presentations, Skills workshops (laboratory/field), Independent geological mapping research dissertation, Team-working skills, Problem-solving work, Library work, Report/technical/site report writing instruction. Small group work.

Private study.

11. Typical Assessment Methods:

Written degree examinations

- Including essay format and practical testing

Formal continuous assessment of coursework (formative and summative) includes:

- Essays, seminars, extensive independent research project report, laboratory reports, field reports, mapping project report, rock and thin section descriptions, map-based exercises, problem-solving/teamwork reports.

Informal continuous assessment of coursework includes:

Verbal feedback on description and interpretation of rocks and their geological and environmental relationships in the laboratory and field. Verbal feedback on theoretical and practical skills by supervisors.

12. Programme Structure and Features:

Structure

Course Title	Course Code	Credits	Core	Optional	Semester(s) taught
Year 1					
Earth Science and the Environment 1X	EARTH1001	20	Y		1
Earth Science and the Environment 1Y	EARTH1002	20	Y		2
Level 1 course in a second subject		40			
Level 1 course in a third subject		40			
(40 credits)					
<i>Exit point: Certificate of Higher Education</i>					
Year 2					
Earth Science and the Environment 2A	EARTH2010	30	Y		1
Earth Science and the Environment 2B	EARTH2011	30	Y		2
Level 2 courses in a second subject		60			
<i>Exit point: Diploma of Higher Education</i>					
Year 3					
Climates: Past and Future	EARTH4074	20	Y		1
Hydrogeology and Environmental Geochemistry	EARTH4075	20	Y		1
Geomorphology: Tectonic and Surface Processes	EARTH4076	20	Y		1
Geological Skills: Spatial, Numerical, Geophysical and Field Methods	EARTH4078	30	Y		2
Quaternary Geoscience	EARTH4077	30	Y		2
<i>Exit point: Designated Degree Earth Science</i>					
Year 4					
Geological Hazards: Field Skills and Problem Solving	EARTH4082	20	Y		1
Independent Earth Science Mapping	EARTH4080P	40	Y		1+2
Dissertation					
Students will choose 60 credits worth of options courses from a list including:					
Economic Minerals;	EARTH4083	20		Y	1
Engineering Geology;	EARTH4084	20		Y	2
Planetary Science,	EARTH4086	20		Y	2
and appropriate Geography options such as					
Physical and Biological Oceanography,	GEOG4104	10		Y	2
Coastal Processes, Environments and Management,	GEOG4105	10		Y	2
Hydrology and Managing River Catchments,	GEOG4061	10		Y	1
Biogeography,	GEOG4062	10		Y	1
and Hillslope Geomorphology	GEOG4056	10		Y	2
<i>Exit Point: BSc Honours Degree in Earth Science</i>	GEOG4057	10		Y	2
	GEOG4101	10		Y	1
	GEOG4108	10		Y	1
Year 5					
Geoscience Communication	EARTH5011	20	Y		1+2
Analytical Methods in Geoscience	EARTH5013	20	Y		1
Independent Geoscience Research Project	EARTH5010P	60	Y		1+2

Students will choose 20 credits of options courses from a list including:					
Monitoring Water Environments,	GEOG5114	20		Y	1
Managing Water Environments,	GEOG5115	10		Y	1
Modelling Water Environments,	GEOG5117	20		Y	2
Ecology and Restoration	GEOG5116	10		Y	1
Principles of GIS	GEOG5019	10		Y	1

Features

The programme enables students who will not normally possess any prior knowledge of Earth Science to understand the scope, main areas and boundaries of the discipline.

The programme features a variety of field classes, including residential field classes both overseas and in the UK, where students will develop key Earth Science skills. Students will undertake an independent Earth Science mapping dissertation in the summer between Year 3 and Year 4, during which they will conduct independent research on field-based problems in geomorphology/landscape evolution, and the modelling of these processes. In Year 5, students will undertake an extensive primarily laboratory-based research project on an Earth Science topic, which will develop their independent learning and research skills.

Regulations

This programme will be governed by the relevant regulations published in the University Calendar. These regulations include the requirements in relation to:

- (a) Award of the degree
- (b) Progress
- (c) Early exit awards
- (d) Entry to Honours (For undergraduate programmes, where appropriate)

www.gla.ac.uk/services/senateoffice/policies/calendar/

In addition to the general progress requirements of Science:

Year 2 to Year 3: Earth Science and the Environment 2A and 2B at an average Grade B3 or better, achieving at least a Grade of C3 in each individual course, and attendance at the residential field class.

Year 3 to Year 4: Normally entrants must have attained an average grade B3 or better in the Level 3H courses.

Year 4 to Year 5: Normally entrants must have attained an average grade B3 or better in the Level 4H courses.

13. Programme Accredited By:

14. Location(s):

Glasgow

15. College:

College of Science and Engineering

16. Lead School/Institute:

Geographical and Earth Sciences [REG30400000]

17. Is this programme collaborative with another institution:

No

18. Awarding Institution(s):

University of Glasgow

19. Teaching Institution(s):

University of Glasgow

20. Language of Instruction:

English

21. Language of Assessment:

English

22. Relevant QAA Subject Benchmark Statements (see [Quality Assurance Agency for Higher Education](http://www.qaa.ac.uk/en/Publications/Documents/SBS-earth-sciences-14.pdf)) and Other External or Internal Reference Points:

This Programme Specification is informed by the QAA Benchmark Statement for Earth Sciences, Environmental Sciences and Environmental Studies (ES3): <http://www.qaa.ac.uk/en/Publications/Documents/SBS-earth-sciences-14.pdf> and by the SCQF Level descriptors: <http://www.scqf.org.uk/levels.asp>

23. Additional Relevant Information (if applicable):

Support for students is provided by the Postgraduate/Undergraduate Adviser(s) of Studies supported by University resources such LEADS (www.gla.ac.uk/myglasgow/leads/), Counselling & Psychological Services (www.gla.ac.uk/services/counselling/), the Disability Service (www.gla.ac.uk/services/studentdisability/) and the Careers Service (www.gla.ac.uk/services/careers/).

Will seek accreditation from the Geological Society and the Institution of Environmental Sciences

24. Online Learning:

No

25. Date of approval:

02/02/2018