These programme regulations should be read in conjunction with the University's core regulations for undergraduate programmes, and the marking and classification conventions for undergraduate programmes.

MSci Earth Sciences (F644)

1. This programme is available at Durham City, in a full-time mode of study.
2. Candidates should choose one of the following Routes through Level 1 to Level 3:

Geology Route

Environmental Route

Geophysics Route

Geoscience Route

Climate Science Route

3. Geology Route Levels 1 - 3

Level 1 (Certificate)

4. Candidates shall study and be assessed in the following modules:

		Credit value
Earth Materials	GEOL1021	20
Field Studies	GEOL1051	20
Understanding Earth Sciences	GEOL1101	20
Environment and Resources	GEOL1111	20
Geoinformatics	GEOL1131	20

5. Candidates shall also study and be assessed in modules to the value of 20 credits from List A:

List A:		**Credit value**
Mathematical Methods in Geosciences Φ	GEOL1061	20
Further Mathematics for Geoscientists	GEOL1081	20
Sustainability	GEOL1141	20
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

Level 2 (Diploma)

6. Candidates shall study and be assessed in the following modules:

		Credit value
Structural Geology and Tectonics	GEOL2011	20
Sedimentary Environments	GEOL2031	20
Fieldwork (Geological)	GEOL2191	20
Igneous and Metamorphic Processes	GEOL2231	20

7. Candidates shall also study and be assessed in modules to the value of 40 credits from List B:

List B:		**Credit value**
Geophysical Methods for Geoscientists	GEOL2081	20
Isotopes and Climate	GEOL2171	20
Modelling Earth Processes	GEOL2251	20
Fieldwork (Geophysical)	GEOL2241	20
Ancient Life and it's Environment	GEOL2301	20
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

Level 3 (Degree)

8. Candidates shall study and be assessed in the following modules:

		Credit value
Dissertation	GEOL3022	40

9. Candidates shall also study and be assessed in modules to the value of 80 credits from List C:

List C:		**Credit value**
Environmental Geochemistry	GEOL3041	20
Volcanology and Magmatism	GEOL3051	20
Environmental Management	GEOL3281	20
Earth Sciences into Schools	GEOL3251	20
Atmospheric Circulation and Dynamics	GEOL3387	10
Element Cycling at Subduction Zones	GEOL3337	10
Western Alps field trip (Anatomy of a subduction zone)	GEOL3367	10
Tectonic Processes and Renewable Geo-resources	GEOL3357	10
Earth Structure & Dynamics	GEOL3397	10
Earthquake Sources and Waves	GEOL3327	10
Earth System and Climate I	GEOL3407	10
Earth System and Climate II	GEOL3447	10
Geophysical Flows	GEOL3347	10
Monitoring the Oceans: Geohazards & Climate Change	GEOL3377	10
Polar Quaternary Environmental Processes	GEOL3437	10
Groundwater Hydrology	GEOL3427	10
Habitable Environments (Astrobiology)	GEOL3417	10
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

10. Environmental Route Levels 1 - 3

Level 1 (Certificate)

11. Candidates shall study and be assessed in the following modules:

		Credit value
Earth Materials	GEOL1021	20
Field Studies	GEOL1051	20
Understanding Earth Sciences	GEOL1101	20
Environment and Resources	GEOL1111	20
Geoinformatics	GEOL1131	20

12. Candidates shall also study and be assessed in modules to the value of 20 credits from List A:

List A:		**Credit value**
Mathematical Methods in Geosciences Φ	GEOL1061	20
Further Mathematics for Geoscientists	GEOL1081	20
Sustainability	GEOL1141	20
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

Level 2 (Diploma)

13. Candidates shall study and be assessed in the following modules:

		Credit value
Sedimentary Environments	GEOL2031	20
Isotopes and Climate	GEOL2171	20
Fieldwork (Environmental)	GEOL2201	20

14. Candidates shall also study and be assessed in modules to the value of 40 credits from List B:

List B:	**Credit value**

Structural Geology and Tectonics	GEOL2011	20
Geophysical Methods for Geoscientists	GEOL2081	20
Igneous and Metamorphic Processes	GEOL2231	20
Modelling Earth Processes	GEOL2251	20
Ancient Life and it's Environment	GEOL2301	20
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

Level 3 (Degree)

15. Candidates shall study and be assessed in the following modules:

		Credit value
Dissertation	GEOL3022	40
Environmental Geochemistry	GEOL3041	20
Environmental Management	GEOL3281	20

16. Candidates shall also study and be assessed in modules to the value of 40 credits from List C:

List C:		**Credit value**
Volcanology and Magmatism	GEOL3051	20
Earth Sciences into Schools	GEOL3251	20
Atmospheric Circulation and Dynamics	GEOL3387	10
Element Cycling at Subduction Zones	GEOL3337	10
Western Alps field trip (Anatomy of a subduction zone)	GEOL3367	10
Tectonic Processes and Renewable Geo-resources	GEOL3357	10
Earth Structure & Dynamics	GEOL3397	10
Earthquake Sources and Waves	GEOL3327	10
Earth System and Climate I	GEOL3407	10
Earth System and Climate II	GEOL3447	10
Geophysical Flows	GEOL3347	10
Monitoring the Oceans: Geohazards & Climate Change	GEOL3377	10
Polar Quaternary Environmental Processes	GEOL3437	10
Groundwater Hydrology	GEOL3427	10
Habitable Environments (Astrobiology)	GEOL3417	10
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

17. Geophysics Route Levels 1 - 3

Level 1 (Certificate)

18. Candidates shall study and be assessed in the following modules:

		Credit value
Earth Materials	GEOL1021	20
Field Studies	GEOL1051	20
Further Mathematics for Geoscientists	GEOL1081	20
Understanding Earth Sciences	GEOL1101	20
Geoinformatics	GEOL1131	20

19. Candidates shall also study and be assessed in modules to the value of 20 credits from List A:

List A:		**Credit value**
Environment and Resources	GEOL1111	20
Sustainability	GEOL1141	20
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

Level 2 (Diploma)

20. Candidates shall study and be assessed in the following modules:

		Credit value
Geophysical Methods for Geoscientists	GEOL2081	20
Fieldwork (Geophysical)	GEOL2241	20
Geophysical Data Applications	GEOL2291	20

21. Candidates shall also study and be assessed in modules to the value of 60 credits from List A:

List B:		**Credit value**
Structural Geology and Tectonics	GEOL2011	20
Sedimentary Environments	GEOL2031	20
Isotopes and Climate	GEOL2171	20
Igneous and Metamorphic Processes	GEOL2231	20
Modelling Earth Processes	GEOL2251	20
Ancient Life and its Environment	GEOL2301	20
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

Level 3 (Degree)

22. Candidates shall study and be assessed in the following modules:

		Credit value
Dissertation	GEOL3022	40
Geophysical Flows	GEOL3347	10
Monitoring the Oceans: Geohazards & Climate Change	GEOL3377	10
Earth Structure & Dynamics	GEOL3397	10
Earthquake Sources and Waves	GEOL3327	10

23. Candidates shall also study and be assessed in modules to the value of 40 credits from List C:

List C:		**Credit value**
Environmental Geochemistry	GEOL3041	20
Volcanology and Magmatism	GEOL3051	20
Earth Sciences into Schools	GEOL3251	20
Environmental Management	GEOL3281	20
Atmospheric Circulation and Dynamics	GEOL3387	10
Element Cycling at Subduction Zones	GEOL3337	10
Western Alps field trip (Anatomy of a subduction zone)	GEOL3367	10
Tectonic Processes and Renewable Geo-resources	GEOL3357	10
Earth System and Climate I	GEOL3407	10
Earth System and Climate II	GEOL3447	10
Polar Quaternary Environmental Processes	GEOL3437	10
Groundwater Hydrology	GEOL3427	10
Habitable Environments (Astrobiology)	GEOL3417	10
Modules up to the value of 20 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		20

24. Geoscience Route Levels 1 - 3

Level 1 (Certificate)

25. Candidates shall study and be assessed in the following modules:

		Credit value
Earth Materials	GEOL1021	20
Field Studies	GEOL1051	20
Understanding Earth Sciences	GEOL1101	20

26. Candidates shall study and be assessed in modules to the value of 80 credits from List A:

List A:		Credit value
Mathematical Methods in Geosciences	GEOL1061	20
Further Mathematics for Geoscientists	GEOL1081	20
Environment and Resources	GEOL1111	20
Geoinformatics	GEOL1131	20
Sustainability	GEOL1141	20
Modules up to the value of 40 credits offered by any Boards of Studies (including up to 20 credits of appropriate language modules offered by the University's Centre for Foreign Language Study).		

Level 2 (Diploma)

27. Candidates shall study and be assessed in modules to the value of 120 credits from List B:

List B:		Credit value
Structural Geology and Tectonics	GEOL2011	20
Sedimentary Environments	GEOL2031	20
Geophysical Methods for Geoscientists	GEOL2081	20
Isotopes and Climate	GEOL2171	20
Fieldwork (Geological)	GEOL2191	20
Fieldwork (Environmental)	GEOL2201	20
Igneous and Metamorphic Processes	GEOL2231	20
Fieldwork (Geophysical)	GEOL2241	20
Modelling Earth Processes	GEOL2251	20
Geophysical Data Applications	GEOL2291	20
Ancient Life and its Environment	GEOL2301	20
Modules up to the value of 40 credits offered by any Boards of Studies (including up to 20 credits of appropriate language modules offered by the University's Centre for Foreign Language Study).		

Level 3 (Degree)

28. Candidates shall study and be assessed in the following module:

		Credit value
Dissertation	GEOL3022	40

29. Candidates shall also study and be assessed in modules to the value of 80 credits from List C:

List C:		Credit value
Environmental Geochemistry	GEOL3041	20
Volcanology and Magmatism	GEOL3051	20
Environmental Management	GEOL3281	20
Earth Sciences into Schools	GEOL3251	20
Atmospheric Circulation and Dynamics	GEOL3387	10
Element Cycling at Subduction Zones	GEOL3337	10
Western Alps field trip (Anatomy of a subduction zone)	GEOL3367	10
Tectonic Processes and Renewable Geo-resources	GEOL3357	10
Earth Structure & Dynamics	GEOL3397	10
Earthquake Sources and Waves	GEOL3327	10
Earth System and Climate I	GEOL3407	10
Earth System and Climate II	GEOL3447	10
Geophysical Flows	GEOL3347	10
Monitoring the Oceans: Geohazards & Climate Change	GEOL3377	10
Polar Quaternary Environmental Processes	GEOL3437	10
Groundwater Hydrology	GEOL3427	10
Habitable Environments (Astrobiology)	GEOL3417	10

Modules up to the value of 40 credits offered by any Boards of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		40

30. Climate Science Route Levels 1 – 3

Level 1 (Certificate)

31. Candidates shall study and be assessed in the following modules:

		Credit value
Environment and Resources	GEOL1111	20
Introduction to Climate Change	GEOG1261	20

32. Candidates shall also study and be assessed in modules up to the value of 80 credits from:

		Credit value
Field Studies	GEOL1051	20
Mathematical Methods in Geosciences	GEOL1061	20
Further Mathematics	GEOL1081	20
Geoinformatics	GEOL1131	20
Understanding Earth Sciences	GEOL1101	20
Sustainability	GEOL1141	20
Planet under Pressure	GEOG1061	20
Modules to the value of 20 credits offered by any Board of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		

Level 2 (Diploma)

33. Candidates shall study and be assessed in the following modules:

		Credit value
Isotopes and Climate	GEOL2171	20

34. Candidates shall also study and be assessed in modules to the value of 100 credits from:

		Credit value
Sedimentary Environments	GEOL2031	20
Fieldwork (Environmental)	GEOL2201	20
Fieldwork (Geophysical)	GEOL2241	20
Modelling Earth Processes	GEOL2251	20
Ancient Life and its Environments	GEOL2301	20
Carbon and Biogeochemical Cycles	GEOG2651	20
Climate Change: Geographical Perspectives	GEOG2661	20
Glaciers and Glaciation	GEOG2531	20
Reconstructing Environmental Change	GEOG2571	20
Modules to the value of 20 credits offered by any Board of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		

Level 3 (Degree)

35. Candidates shall study and be assessed in the following modules:

		Credit value
Earth System and Climate I	GEOL3407	10
Earth System and Climate II	GEOL3447	10
Dissertation ~	GEOL3022	40

36. Candidates shall also study and be assessed in modules to the value of 60 credits from:

		Credit value
Environmental Geochemistry	GEOL3041	20
Environmental Management	GEOL3281	20
Atmospheric Circulation and Dynamics	GEOL3387	10
Monitoring the Oceans: Geohazards & Climate Change	GEOL3377	10
Polar Quaternary Environmental Processes	GEOL3437	10
Sea Level Change and Coastal Evolution	GEOG3191	20
Oceans Past and Present	GEOG3641	20

Ice Age Environments	GEOG3511	20
Past Climates of the Low Latitudes	GEOG3927	10
Antarctic Environments	GEOG3817	10
Archaeology and Global Sustainable Developments	ARCH3641	20
Modules to the value of 20 credits offered by any Board of Studies (including appropriate credit-bearing language modules offered by the University's Centre for Foreign Language Study).		

All Routes

Level 4 (Degree)

37. Candidates shall study and be assessed in the following modules:

		Credit value
Research Project	GEOL4053	60

38. Candidates shall also study and be assessed in modules to the value of 40 credits from List F:

List F:		**Credit value**
Science Communication	GEOL4061	20
Earth Science Field Seminar	GEOL4081	20
Earth Sciences into Industry	GEOL4091	20

39. Candidates shall also study and be assessed in modules to the value of 20 credits from List F above or List G:

List G:		**Credit value**
Environmental Geochemistry IV	GEOL4111	20
Earth Structure & Dynamics IV	GEOL4177	10
Earthquake Sources and Waves IV	GEOL4187	10
Earth System and Climate I - IV	GEOL4197	10
Earth System and Climate II - IV	GEOL4237	10
Geophysical Flows IV	GEOL4227	10
Monitoring the Oceans: Geohazards & Climate Change IV	GEOL4207	10
Polar Quaternary Environmental Processes IV	GEOL4217	10

Assessment, progression and award

40. At Level 1 students are required to attend a field course that is usually held in the Easter vacation.

41. At Levels 2 and 3 students are required to attend a field course if specified as part of a module.

42. Students are required to take modules marked with a Φ if they do not have A-Level Mathematics at Grade B or above.

43. Students who have A-Level Mathematics at Grade B or above are not entitled to take GEOL1061.

44. Students who fail to achieve the standard required under the Core Regulations for progression to Level 3 of the MSci Geoscience but who achieve the standard required for progression to Level 3 of a Bachelors programme may progress to Level 3 of the BSc Geology (for students who have taken the Geology route) or BSc Environmental Geosciences (for students who have taken the Environmental Geosciences route) or BSc Geophysics with Geology (for students who have taken the Geophysics with Geology route) at Honours level in accordance with the Core Regulations.

45. A student who is qualified to progress from Level 2 to Level 3 of the MSci Geoscience but wishes to transfer to Level 3 of the BSc in Geology (for students who have taken the Geology route) or BSc Environmental Geosciences (for students who have taken the Environmental Geosciences route) or BSc Geophysics with Geology (for students who have taken the Geophysics with Geology route) shall be permitted to do so.

46. Students whose achievement at the end of Level 3 does not qualify them to proceed to Level 4 may be awarded the degree of BSc Geology (for students who have taken the Geology route) or BSc Environmental Geosciences (for students who have taken the Environmental Geosciences route) or BSc Geophysics with Geology (for students who have taken the Geophysics with

Geology route) at Honours level in accordance with the Core Regulations for the award of a Bachelors degree.

47. Students whose achievement at the end of Level 4 does not qualify them to be awarded the degree of MSci Geoscience may be awarded the degree of BSc Geology (for students who have taken the Geology route) or BSc Environmental Geosciences (for students who have taken the Environmental Geosciences route) or BSc Geophysics with Geology (for students who have taken the Geophysics with Geology route) with Honours in accordance with the Core Regulations for the award of a Bachelors degree.

Professional accreditation

48. This programme is accredited by the Geological Society for a period of six years with effect from March 2022.