

Geological Society of London

Undergraduate Earth Science Degree Programme Accreditation

Introduction

The aims of accreditation are to:

1. provide quality assurance and recognition of degree programmes in Earth Sciences for students, employers, external examiners, higher education institutions and other professional bodies;
2. demonstrate that the degree programme offers a minimum standard of training, knowledge and skills provision agreed by the Geological Society Academic Accreditation Committee and QAA Subject Benchmark;
3. facilitate and drive good practice for instance with regard to equality, diversity and inclusion within the training;
4. provide the initial step on a career path to professional Chartership (Appendix 1); and
5. provide a quality kite-mark for graduates to use with a wide range of professional (graduate) Earth Science employment.

Departments should initially consider Table 1, which summarises the minimum requirement of Earth Science credits that the students must take in order to obtain an accredited degree.

Table 1: Minimum Taught Earth Science Requirements for Accredited Earth Science Degrees (CATS Credits/Total Student Effort)¹					
	FHEQ Level 4 (SCQF Level 8)	FHEQ Level 5 (SCQF Level 9)	FHEQ Level 6 (SCQF Level 10)	FHEQ Level 7 (SCQF Level 11)	Total
BSc <i>Earth Science</i> ²	120 (1200 hours)		100 (1000 hours)		220 (2200 hours)
MSci <i>Earth Science</i> ²	120 (1200 hours)		100 (1000 hours)	100 (1000 hours)	320 (3200 hours)
BSc <i>Earth Science</i> and X ³	120 (1200 hours)		60 (600 hours)		180 (1800 hours)
MSci <i>Earth Science</i> and X ³	120 (1200 hours)		60 (600 hours)	60 (600 hours)	240 (2400 hours)
¹ If fewer than the required credits or hours of Earth Science are taken at a lower level, this may be compensated by an increased number at a higher level. ² Including single honours and 'Earth Science with' programmes where Earth Science is the major subject. The title <i>Earth Science</i> may encompass but is not limited to Geology, Geological Science, Geoscience, Environmental Geology, Engineering Geology, Geochemistry, Geophysics, Palaeontology, Planetary Geology, and <i>Earth Science</i> with X, where X is a minor component. Indicated credits for Levels 4 and 5 are shared between the levels. ³ Joint honours programmes where an additional STEM subject may comprise up to 50% of the degree.					

For a degree programme to be accredited, Departments¹ must also demonstrate that the programme fulfils minimum knowledge and skills criteria as outlined in the accompanying documents. The Department must also demonstrate that it provides an appropriate learning

¹ The term Department is used here, but it is recognised that the teaching unit responsible for delivering the bulk of the curriculum may be part of some other organisational structure such as a School.

environment with due cognisance to staff and student support, equality and diversity.

Although not presented here as a requirement for accreditation, in the development and delivery of courses that are seeking accreditation, Departments may wish to take note of, and build towards, the competency requirements for Professional Chartership (CGeol or CSci). Candidates applying for Chartership after graduation from an accredited degree are required to demonstrate these competencies, on an individual basis (Appendix 1).

Application Procedure

Accreditation of Earth Science degree programmes is approved by the Academic Accreditation Committee of the Geological Society. The Committee requires details about the host institution and the academic content of a degree programme before the case for accreditation can be evaluated. Once this is submitted, the Accreditation Officer's role is to assemble the information prior to it being presented to the Committee for consideration.

For those Departments that have not been previously accredited by the Society, a preliminary application is required, and a small group of 2 or 3 Committee Members and the Accreditation Officer will liaise directly with members of the Department *via* either a visit or a remote meeting. Once the preliminary application is approved, a full application will be invited.

All Departments are requested to complete the requisite forms and matrices, and supply full documentation, as described below. Once awarded, accreditation lasts for 6 years from the date of approval; a term of re-accreditation lasts for 6 years from the end of the previous period of accreditation. Subsequent, significant changes to curriculum content or delivery should be communicated to the Accreditation Officer.

There is no charge for the application for accreditation, other than covering any expenses necessary for any visit. The annual re-charge for accreditation of undergraduate programmes is currently £250 plus VAT for the first programme and £50 plus VAT for each subsequent programme. However, for industrial placement and study abroad variants of BSc and MSci, and Joint Honours combinations where the geoscience component is identical to the core programme, no charge is made.

The application pack is available directly on request from the Accreditation Officer, or it can be downloaded from the Geological Society website². The application pack is designed to be self-explanatory, but help can be sought at any time from the Accreditation Officer who acts as advisor and advocate on the applicant's behalf.

Please notify the Accreditation Officer in advance of any application for accreditation.

Accreditation Officer: Professor Andy Saunders
 ads@le.ac.uk
 0791 009 6139

Document Date: February 2022
Revised: July 2023, September 2023, November 2025

² <http://www.geolsoc.org.uk/accreditation>

Guide to Completing the Forms and Matrices

Application must be made using the *pro forma* forms and matrices. In addition to guiding the responses, these are designed to limit the amount of text submitted. At any point, guidance can be sought from the Accreditation Officer of the Society.

When completing the forms:

- Use a 12-point font.
- The forms are designed to impose a maximum character limit, but there is no expectation that the limit should be reached. Keep it succinct.
- It is recommended that text be written using Word or similar before pasting into the fields on the form.

1. Cover Sheet

Please provide contact details of the Department and Institution, and the titles of all degrees for which accreditation is sought. The titles must be identical to those that will appear on the graduates' transcripts, including any Foundation, Year Abroad or Year in Industry variants.

The degree Programme Specifications must be approved in full by the host institution **before** accreditation of a degree programme is sought.

2. Programme Details

- a. For **all degree programmes**, please provide on Form A.1 (*General Information About Programmes*) the following information:
 - i. A summary of the assessment strategy.
 - ii. A description of Year Abroad, Year in Industry, and Geoscientist Apprenticeship degree programmes, if accreditation is sought for these programmes.
 - iii. If the general programme structure is not based on the Credit Accumulation and Transfer Scheme, or if any programme does not meet the minimum CATS requirements outlined in Table 1, provide a brief justification why accreditation should be awarded.
- b. For **each degree programme** for which accreditation is sought, and with the exception of Geoscientist Apprenticeship degrees (see below), please provide the following information on Form A.2 (*Individual Degree Programme Details*) and the Skills (M1) and Subject Matrices (M2), using a new form and matrices for each programme. Information may be copied where it is common between programmes. Where accreditation is sought for Year Abroad and/or Year in Industry programmes, and where these programmes comprise an *additional* year (abroad or with industry), it is acceptable to bundle these degrees into one form (for example, *BSc Geology* plus *BSc Geology with a Year Abroad* plus *BSc Geology with a Year in Industry*). If the Year Abroad or Year in Industry component is a *replacement* year, those programmes should be described individually. M-degrees should be described individually, and not bundled with associated BSc programmes.

- i. The programme structure.
- ii. A completed **Subject-Specific Skills Matrix for Earth Science Graduates** (M1) and accompanying narrative as appropriate. (These should be completed after consulting Appendix 2.) The matrix should include only those modules which are compulsory for students ('core' modules). (Optional modules can be included, however, if students must take one of a set of modules where all modules contain the same skill training.)
- iii. A completed **Subject-Specific Knowledge Matrix for Earth Science Graduates** (M2) and accompanying narrative as appropriate. (These should be completed after consulting Appendix 3.) The matrix should include only those modules which are compulsory for students ('core' modules). (Optional modules can be included, however, if students must take one of a set of modules where all modules contain the same knowledge.) Where the programme is specialised (e.g., Geology with/and X, or Geophysics, or Palaeontology), applicants are invited to include additional knowledge sets that pertain to the specialism of the degree programme, in both the matrix and the narrative.
- iv. A narrative of the **fieldwork** that is undertaken in the programme. Fieldwork continues to be regarded by the Geological Society, QAA, and many employers as an essential component of an Earth Science programme and it therefore retains a prominent role in accreditation. In most cases it is a highly effective learning environment where intellectual and practical skills are enhanced and many programme learning outcomes can be achieved. However, it is increasingly recognised that there may be barriers to inclusivity and diversity associated with a requirement for a minimum number of compulsory fieldwork days. An accredited programme should have fieldwork components that are visible throughout the programme. They should be associated with core modules where they are essential to programme-level learning outcomes.

Fieldwork should be designed to enable all participants on a fieldwork-based module to engage in the fieldwork experience and to achieve associated learning outcomes as fully as possible. Principles of inclusivity should apply as far as practically possible, even where alternative learning experiences are adopted for students for whom some or all mainstream fieldwork activities are not achievable. There is no specified minimum number of days, but the fieldwork programme should be sufficient to allow any students undertaking fieldwork to: (i) gain a deeper understanding of the theoretical and practical content of the course delivered in the classroom and (ii) develop competence in field techniques and the ability to operate as a field-scientist. For programmes that offer independent fieldwork options for the final year project, the fieldwork programme should be sufficient to allow students to develop and demonstrate sufficient competence in preparation to undertake such projects (see next section).

- v. A narrative of the **major project work** that is undertaken in the programme. Projects fulfil an important role by allowing students to develop and demonstrate their ability to create, record, interpret, critically analyse, synthesise and present primary geological data. They also allow students to develop and demonstrate their independence and project management

skills. They typically act as the culminating element within the final year of a degree programme. Projects may include: creating a map and report from direct and indirect observation (including digital representations) of natural and man-made surface exposures and landforms; synthesis and use of online geological digital data sets to produce new interpretations; direct and indirect observation and evaluation of sub-surface or remote geology in boreholes, underground excavations, from planetary surfaces etc; samples and laboratory measurements thereof to provide an interpretation of the structure, geochemistry, palaeontology, stratigraphy, sedimentology, geophysics or to produce resource evaluation or environmental impact assessment. Students are expected to demonstrate the capability of interpreting incomplete data sets, and of designing and executing a project with a clear set of objectives to test one or more hypotheses.

If an independent project includes an element of fieldwork, the amount will vary depending on the hypotheses being tested and the nature of the data required to meet the project objectives. Given the importance that the Society attaches to fieldwork, Departments are encouraged to develop projects with a fieldwork element as the norm and to give due consideration to the fieldwork components in the learning outcomes. In cases where the principal objective is the creation of a geological map and associated cross-sections, supplemented by a mapping report, the minimum number of field days expected for a student who is competent to undertake independent mapping will be no less than 20 days.

- vi. If the programme is an **Integrated Masters degree programme**, a narrative description of its M-level components. Please refer to Appendix 6.
- vii. A narrative of the provision of learning of **societal and ethical aspects** of Earth Science in the programme.

c. Geoscientist Apprenticeship Degree Programmes only

Please provide the following information on Form A.2App (*Details about Apprenticeship Degree Programmes*) and the KSB matrix (M3), using a new form and matrix for each programme. Information may be copied where it is common between programmes. Further details about Geoscientist Apprenticeship programmes are available in Appendix 4.

- i. The programme structure.
- ii. A completed **KSB Matrix M3** and an accompanying narrative as appropriate. (These should be completed after consulting Appendix 4.) The matrix should include only those modules which are compulsory for students ('core' modules). (Optional modules can be included, however, if students must take one of a set of modules where all modules contain the same KSB attributes.) Include on matrix M3, and/or in the narrative, where KSBs are delivered by the employer. If more convenient, you may submit an institutional document that clearly indicates how each of the KSBs is delivered in the programme modules and by the employer.
- iii. A narrative of the **fieldwork and site training** that is undertaken in the programme. Fieldwork continues to be regarded by the Geological Society, QAA, and many employers as an essential component of an Earth Science

programme and it therefore retains a prominent role in accreditation. In most cases it is a highly effective learning environment where intellectual and practical skills are enhanced and many programme learning outcomes can be achieved. However, it is increasingly recognised that there may be barriers to inclusivity and diversity associated with a requirement for a minimum number of compulsory fieldwork and site training days. An accredited programme should have field/site work components that are visible throughout the programme. They should be associated with core modules where they are essential to programme-level learning outcomes.

Fieldwork and site training should be designed to enable all participants on a fieldwork-based module to engage in the field/site work experience and to achieve associated learning outcomes as fully as possible. Principles of inclusivity should apply as far as practically possible, even where alternative learning experiences are adopted for students for whom some or all mainstream fieldwork activities are not achievable. There is no specified minimum number of days, but the fieldwork programme should be sufficient to allow any students undertaking field/site work to: (i) gain a deeper understanding of the theoretical and practical content of the course delivered in the classroom and (ii) develop competence in field techniques and the ability to operate as a field-scientist. For programmes that offer independent fieldwork options for the final year project, the fieldwork programme should be sufficient to allow students to develop and demonstrate sufficient competence in preparation to undertake such projects (see next section).

- iv. A narrative of the **major project work** that is undertaken in the programme. Projects fulfil an important role by allowing students to develop and demonstrate their ability to create, record, interpret, critically analyse, synthesise and present primary geological data. They also allow students to develop and demonstrate their independence and project management skills and in the case of the Degree Apprenticeship, facilitate project development and management with the students' employers. Describe how individual student effort will be assessed in team-based projects. Projects typically act as the culminating element within the final year of a degree programme. Projects may include: creating a map and report from direct and indirect observation (including digital representations) of natural and man-made surface exposures and landforms; synthesis and use of online geological digital data sets to produce new interpretations; direct and indirect observation and evaluation of sub-surface or remote geology in boreholes, underground excavations, from planetary surfaces etc; samples and laboratory measurements thereof to provide an interpretation of the structure, geochemistry, palaeontology, stratigraphy, sedimentology, geophysics or to produce resource evaluation or environmental impact assessment. Students are expected to demonstrate the capability of interpreting incomplete data sets, and of designing and executing a project with a clear set of objectives to test one or more hypotheses.

If an independent project includes an element of fieldwork or site work, the amount will vary depending on the hypotheses being tested and the nature of the data required to meet the project objectives. Given the importance that the Society attaches to fieldwork, Departments are encouraged to develop projects with a field and/or site work element as the norm and to give due consideration to the field/site work components in the learning outcomes. In cases where the principal objective is the creation of a geological map and associated cross-sections, supplemented by a mapping report, the minimum number of field days expected for a student who is competent to undertake independent mapping will be no less than 20 days.

- v. A description of the **End-Point Assessment**. The Integrated EPA forms an essential part of the Geoscientist Apprenticeship Programme.

Please outline:

- The evidence that will be required to ensure that the Apprentice has achieved the standard required for entry to the EPA (on-programme and Gateway assessment);
- The requirements for the EPA portfolio;
- The criteria used for grading the EPA;
- How the Gateway will operate;
- How the EPA will contribute towards the degree programme and L6 credits; and
- A statement on who will be involved in assessing the students in their EPA.

- vi. A narrative of the provision of learning of **societal and ethical aspects** of Earth Science in the programme.

3. Details of Institution and Department

Details are required of the institutional facilities, infrastructure, equipment, materials, personnel and policies that are available to enable the programme learning outcomes to be achieved. Using Form A.3 (*Details of Institution and Department*), please provide summaries of:

- a. Teaching and Support staff – provide details of staff involved in the teaching of core skills and knowledge. If preferred, a list of staff and their details may be submitted on a spreadsheet.
- b. Institutional and Departmental approaches to equity, diversity and inclusivity for both staff and students. Provide a copy of your institution's policy on EDI and, if different, a copy of your departmental policy. Please consult Appendix 5, the [Society's Equal Opportunities Statement](#). In particular, attention is drawn to the following statement: *'As the Society is a membership organisation with members from around the world, we recognise and uphold the principles of fairness and equality set out in the following internationally recognised agreements: Universal Declaration of Human Rights, Convention on the Rights of Persons with Disabilities, Convention on the Elimination of All Forms of Discrimination against Women.'* The Society expects all Fellows and accredited institutions to abide by these principles. Failure to meet these principles may result in an application being turned down, or

the Institution being asked to revise its policies for equity, diversity and inclusivity. In the event that an application is approved but a revision is requested, the applicant will be asked to submit its revised EDI policy 18 months after award of accreditation.

- c. Student personal and professional development.
- d. Teaching and IT facilities, equipment and collections, library facilities, and any other facilities of special note.
- e. Engagement of the department in the wider community.
- f. Internal quality assurance.
- g. Student well-being and progression.
- h. The results of any institutional reviews undertaken in the last 5 years.

4. Supporting Documents

- Matrices of Essential Skills (Matrix M1; see Appendix 2) and Knowledge (Matrix M2; see Appendix 3) for all core modules.
- KSB Matrix M3 for Apprenticeship Degrees only.
- External Examiners' Reports and Institutional Responses for the previous 3 years.
- Key points arising from any external reviews of the degree programmes undertaken in the 5 years prior to accreditation or re-accreditation, and any Departmental responses.
- Programme Specifications for all programmes for which accreditation is sought, or URL. These must be approved by the university before an application is made.
- Module Descriptions, or URL.
- Departmental Handbooks or equivalent, or URL.
- Institutional (and departmental, if different) statement on Equity, Diversity and Inclusivity (document or URL).
- Institution's Student Regulations for assessment, progression and discipline; or URLs.
- Titles of representative Level 6 (SCQF Level 10) projects.
- Titles of representative Level 7 (SCQF Level 11) projects.

A submission checklist is also provided.

Submission

The preferred method of submission is *via* Dropbox or as e-mailed compressed (zip) files, sent to the Accreditation Officer (ads@le.ac.uk). There is no need to send paper copy, but please retain copies of all documentation in the event of data loss or corruption.