

Key Points from the Accreditation Survey

The Respondents

There were 124 respondents to the survey, although not all answered all questions. Of these, 111 identified as Earth Science graduates while 8 did not have an Earth Science degree. Forty-five respondents identified as being involved in the teaching of an Earth Science degree, while 73 did not. Although we did not ask respondents to identify the industry sector in which they worked, we can identify the majority as working in the engineering and environmental sectors, with lesser numbers from oil and gas and from mining and mineral exploration. Of 109 respondents who indicated the number of recent graduates they have worked with over the past 5 years, the largest number (31) ticked the “11 or more” category, with a further 24 reporting “6-10”. Only 18 responses were below 3.

The Overview

In response to the question “Overall, how happy are you with the quality of graduates from accredited undergraduate degrees?” Over 73% of responses were “happy” or “very happy” with just 6% “unhappy”; the other category was “ambivalent”. This seems to be a very strong endorsement of the degrees that have been through the Society’s accreditation scheme.

We also asked respondents “Do you see differences between graduates with BSc and MGeol/MEarthSci (not MSc) undergraduate degrees?”. Seventy-eight of 107 responses were “No” but it is clear from the explanatory comments made by those responding “Yes” that many of them were in fact reporting a difference between postgraduate MSc degrees and undergraduate degrees. This is an important result because the requirement for admission to postgraduate MSc degrees is a good BSc, and so for students wishing to follow professional careers in Earth Sciences which do not require a PhD, this survey makes it clear that the preferred route should be BSc followed by MSc. At present, many UK University departments with accredited Earth Science degrees encourage all students to take a 4-year undergraduate Masters degree rather than a BSc. This may lead students to take an unnecessary extra year at University, something that the Society might wish to draw to their attention.

The Requirements for Accreditation

The Survey Results on more detailed questions have been collected according to the categories of degrees used by the Society. These have different accreditation requirements reflecting their different emphases, but it should be noted that actual degree titles often do not exactly map on to the categories used for accreditation, and if there is any uncertainty this is resolved in discussion with the department concerned.

The focus of the Accreditation Survey was to examine whether the topics that the Society has identified as the essential elements for each type of degree continue to be relevant today, and to identify any new topics that should be included.

Important Topics (Table 1)

The questionnaire asked “Are the following subjects important to your geology/ geological sciences graduates in their current role?”, followed by the list of subjects for which there are specific accreditation requirements. These vary between degree schemes and Table 1 summarises the results for each degree. It is clear that, for almost all degree schemes, employers view the main

topics for which the Society specifies accreditation requirements as important. Mathematics, Structural Geology and Geological Fieldwork generally score 90% + approval ratings while GIS/Remote Sensing is also highly rated. Degree schemes for which there are only small numbers of respondents give somewhat more variable responses, but the general pattern is the same. Instrumental Fieldwork and Sampling was listed separately even though there is currently no specific requirement and we note that Instrumental Fieldwork is almost as highly rated as Geological Mapping for many degree schemes. The only topics that consistently score below 70% approval as “important” are Materials (crystallography, mineralogy and petrology) and Fossils. Nevertheless, from the comments, some employers expect better knowledge of materials.

Effectiveness (Table 2)

Respondents were also asked for each of these subjects “Do you feel that the requirements for accreditation in the following subjects accurately meet your expectations of your (degree name) graduates?”. For this question “Don’t know” was an additional possible answer, and the subjects which were not rated as important received large scores in this category. Table 2 presents the results for “No” answers as these definitely highlight concerns. In general, the important subjects in the degree schemes with a large number of replies received less than 25% “No” answers with two exceptions: GIS/Remote Sensing and Instrumental Fieldwork. Both of these subjects are very broad ranging and it is easy to see that an employer with expectations in one part of the subject might take on a student who had met the accreditation requirements with study in another part entirely. It is also worth noting that at present there are no defined requirements for Instrumental Fieldwork and Sampling.

The Comments

The comments provided by the respondents are compiled in full in an accompanying document. Only comments that simply reinforced the Yes/No response without clarification have been omitted. Respondents were asked to comment on the requirements for the various important topics and also on whether any important subjects had been omitted.

For the Geology/Geological Sciences degrees there is general agreement with the existing subject mix, but several respondents note the lack of requirements in economic geology, stratigraphy and sedimentology in particular. Like “Fossils” these are essential components of a well rounded geology degree, but accreditation does not set out to specify the full content of such a degree, merely to highlight components that are important for chartered geologists. The accreditation panel might therefore consider whether to include additional components of a well rounded degree, even where they are not important to most employment. Alternatively, if the emphasis is on importance to employers, Fossils could be dropped from the subjects required for accreditation. Some subject suggestions are very specific, and since graduates from these degrees should have a background that allows them to move into any area of geology, these might not be practicable. Geophysics degrees likewise seem to be well covered by the existing requirements. The situation is less clear for Environmental/Geochemistry and Engineering/Applied Geology degrees. Here, it appears that the current requirements are simply a subset of the Geology requirements, and a number of respondents highlight important omissions for these more specific degrees. The accreditation Panel might consider setting up small working groups to review their requirements.

The subject comments provide considerable detail on how the requirements for some degrees might be developed. There are two overall conclusions to be drawn: more demanding requirements for statistics should be considered, and training in instrumental fieldwork should be made a specific part

of the fieldwork requirements for some degree schemes at least. Other comments should be considered in any review of the requirements for Environmental/Geochemistry and Engineering/Applied Geology degrees.

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Table 1: Importance (% of "Yes" responses to the question "Are these subjects important to your graduates in their current roles?")

Degree Category:	Geology/Geol Sci	Environment Geol/Geochem	Applied/Engineering Geol	Geophysics (Geol)	Geophysics (Maths-Phys)	Comb.Hons. 60-80% Geo	Comb. Hons. 50-60% Geo
Mathematics	94.0	92.3	100.0	100.0	100.0	100.0	100.0
Materials	36.5	38.5	34.8	23.1	20.0	40.0	50.0
Fossils	9.0	0.0	2.2	n/a	n/a	0.0	50.0
Structural Geology	94.0	84.6	95.7	100.0	70.0	80.0	50.0
GIS/RS	82.1	76.9	80.4	76.9	60.0	60.0	75.0
Geological Fieldwork	91.0	100.0	93.5	100.0	40.0	83.0	50.0
Geological Mapping	80.6	69.2	84.8	84.6	n/a	67.0	50.0
Instrumental Fieldwork	76.1	92.3	78.3	69.2	50.0	50.0	100.0
Total Responses	67	13	46	13	10	2 to 6	2 to 4

Table 2: Effectiveness

(% of "No" reponses to the question "Do you feel that the requirements for accreditation accurately meet your expectations of your graduates?")

Degree Category:	Geology/Geol Sci	Environment Geol/Geochem	Applied/Engineering Geol	Geophysics (Geol)	Geophysics (Maths-Phys)	Comb. Hons. 60-80% Geo	Comb. Hons. 50-60% Geo
Mathematics	17.9	23.1	18.2	7.7	0.0	50.0	25.0
Materials	13.4	15.4	15.9	0.0	11.1	50.0	25.0
Fossils	10.3	7.7	11.4	n/a	n/a	33.3	25.0
Structural Geology	20.9	23.1	13.6	0.0	11.1	33.3	50.0
GIS/RS	28.4	38.5	25.0	23.1	33.3	50.0	50.0
Geological Fieldwork	20.9	46.2	22.7	0.0	11.1	66.7	25.0
Geological Mapping	17.9	15.4	15.9	0.0	11.1	33.3	25.0
Instrumental Fieldwork	41.8	50.0	47.7	23.1	23.1	50.0	50.0
Total Responses	67	13	46	13	10	6	4