

## PROGRAMME SPECIFICATION

This document describes the **BSc Honours Degree programmes in Environmental Geology**. For Joint and Combined Honours Degree programmes, please also refer to the equivalent document(s) for the other subject(s). This specification is valid for new entrants from **September 2016**.

The aims of all Honours Degree programmes in Environmental Geology are:

- to provide a sound and extensive basis for the study of Geology relating to the natural environment, by developing relevant knowledge and understanding, and transferable skills;
- to provide a flexible and progressive structure in which students are able to gain knowledge, understanding and appropriate skills relating to distinctive research specialisms;
- to equip students with the knowledge and skills appropriate for a career in the Earth Sciences, and generally to provide them with a range of personal attributes relevant to the world beyond Higher Education, enabling them to engage in lifelong learning and to contribute to the wider community.

Programmes are delivered in three stages, each of which normally comprises one year of full-time study, during which the student must follow courses to the value of four units (one unit is equivalent to 30 national credits). Although full-time attendance is the normal mode of study, in certain circumstances it may be possible to become part-time and take one year's courses over two years (2 units per year). In this case there are no specific requirements in terms of the order in which the respective courses are taken.

Courses are characterised by strong progression and opportunities for specialisation through the programme. Stage one provides a broad-based introduction to the subject through four compulsory lecture-based courses which consider major themes of geological knowledge and skills. The programmes also have a strong compulsory spine, running into stages two and three, in research training and fieldwork, culminating in the production of an independent project. Stage two contains 6 compulsory Earth Sciences courses, plus one in Geography; these are integrated courses in substantial areas of the discipline which form a bridge between the introductions provided in stage one and the research-led specialist options in stage three. These specialist courses are closely informed by the active research of staff, particularly in the general areas of: natural geohazards, contemporary and long-term environmental change and management; coastal and estuarine sedimentary environments; environmental pollution; the Earth's resources; modern atmospheres.

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This document provides a summary of the main features of the programme(s), and of the outcomes which a student might reasonably be expected to achieve if full advantage is taken of the learning opportunities provided. Further information is contained in the College prospectus, the College Regulations and in various handbooks issued to students upon arrival. Whilst Royal Holloway keeps all its information for prospective applicants and students under review, programmes and the availability of individual courses are necessarily subject to change at any time, and prospective applicants are therefore advised to seek confirmation of any factors which might affect

their decision to follow a specific programme. In turn, Royal Holloway will inform applicants and students as soon as is practicable of any substantial changes which might affect their studies.

### **Learning outcomes**

Teaching and learning in the programmes are closely informed by the active research of staff. In general terms, the programmes provide opportunities for students to develop and demonstrate the following learning outcomes:

#### *Knowledge and understanding of*

- the composition and structure of the Earth, and how these influence the natural environment;
- the concept of spatial variation, and thinking in 3-dimensional space and 4-dimensional space and time;
- the operation of physical systems in, and on the surface of, the Earth;
- the significance of time and historical change in the physical world;
- the contribution made by Geology to the development of knowledge;
- the main methods and decision-making strategies used in the critical analysis and interpretation of geological information;
- the bases for informed concern about the Earth and its resources.

#### *Skills and other attributes*

- plan, design and execute a piece of rigorous research or enquiry, including the production of a final report;
- undertake effective field and laboratory studies (with due regard for safety and risk assessment);
- work safely in a scientific laboratory, with awareness of standard procedures;
- prepare effective geological and geographical maps and diagrams using a range of appropriate technologies;
- employ a variety of technical and laboratory-based methods for the collection and analysis of spatial and environmental information (such as environmental sampling, dating techniques, geochemistry, sedimentary logging, statistical analysis, GIS);
- collect and critically analyse different types of geographical and geological evidence (such as texts, imagery, maps, digital and laboratory data);
- recognise the moral and ethical issues involved in debates and enquiries;\*
- describe, recognise and interpret rocks and minerals in the field and laboratory;
- critically judge and evaluate evidence, assessing the merits of contrasting theories, explanations and policies;\*
- solve problems and make decisions;\*
- abstract and synthesise information;\*
- develop a reasoned argument, and express it verbally or in writing;\*
- develop numeracy, spatial awareness and observation;\*
- use information technology (including spreadsheets, databases, word processing, e-mail and the world-wide web);\*
- employ information handling and retrieval (including the use of on-line computer searches); identifying, retrieving, sorting and exchanging information; investigating a wide range of sources;\*
- work with groups/teams, recognising and respecting the viewpoints of others;\*
- take responsibility for their own learning, developing habits of reflection on that learning.\*
- in addition, this programme fosters the development of a range of personal attributes that are important in the world of work, and that strengthen students' abilities to engage in lifelong learning and contribute to the wider community. These include: personal motivation; the ability to work autonomously and with others; self-awareness and self-management; empathy and insight; intellectual integrity; awareness of responsibility as a local and international citizen; interest in lifelong learning; flexibility and adaptability; creativity.\*

\* transferable skills

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### **Teaching, learning and assessment**

Knowledge learning outcomes are best thought of as general ways of thinking which stretch across different courses and sub-disciplinary areas. As students progress through the programme, they should develop a greater

depth of knowledge and understanding of the subject areas, through their application and interpretation in particular geological sub-disciplinary contexts. Particular training in geological skills is given in the skills and research training 'spine' to the degree programme, through the compulsory courses. Other courses in the programme also develop and assess these skills in specialist contexts. Students also complete a programme in study skills with their personal tutor by means of the tutorial system. Students are also expected to meet basic standards in information technology, for which training is provided by the College Computer Centre through a range of information technology skills programmes. Other methods used to develop skills and knowledge are: lectures, seminars, small-group tutorials, practicals, problem-solving workshops, field and laboratory work, group work, guided independent research, and guided independent study.

Assessment of knowledge and understanding is by formal examinations, coursework essays and other exercises, fieldwork reports, oral presentations and the independent project. Skills are additionally assessed by means of practical exercises including laboratory work, problem-solving workshops and oral and poster presentations. Full details of the assessments for individual courses can be obtained from the [Department](#).

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### **Details of the programme structure**

Please note that not all courses run each year. A full list of courses including optional courses for the current academic year can be obtained from the [Department](#).

#### Single Honours Degree programmes in Environmental Geology

##### **Stage one:**

Students must take the following **mandatory** courses:

- GL1100 Global Tectonics (½ unit)
- GL1200 Introductory Sedimentology (½ unit)
- GL1300 Environmental Issues (½ unit)
- GL1460 Igneous and Metamorphic Geology (½ unit)
- GL1500 Physics and Chemistry of the Earth (½ unit)
- GL1600 Earth Structures (½ unit)

- GL1800 Introductory Palaeontology (½ unit)
- CL1900 Scientific and Geological Field Skills (½ unit)

##### **Stage two:**

Students must take the following **mandatory** courses:

- GL2200 Stratigraphy and the History of Life (½ unit)
  - GL2320 Geohazards (½ unit)
  - GL2410 Geochemistry (½ unit)
  - GL2901 Advanced Scientific and Geological Field Skills (1 unit)
- And courses to the value of 1.5 units from:
- GL2210 Regional Geology (½ unit)
  - GL2230 Sedimentary Basin Analysis (½ unit)
  - GL2400 Igneous and Metamorphic Geology (½ unit)
  - GL2500 Applied Geophysics (½ unit)
  - GL25xx Computational Geology (½ unit)
  - GL2600 Structural Analysis and Remote Sensing (½ unit)

Students may also choose to take:

GL3141 Applied Geology (Industrial Placement) (1 unit) in addition to final year courses. This is a 9-12 month work experience placement, between stages two and three.

##### **Stage three:**

Students must take the following **mandatory** courses:

GL3001 Advanced Concepts and Techniques in Geology (1 unit)  
GL3300 Aqueous Geology (½ unit)  
GL3321 Environmental Geology Project (1 unit)  
GL3940 Methods of Environmental Investigation (½ unit)

and choose options equal to the value of 1 full unit from:

GL3210 Advanced Topics in Sedimentology (½ unit)

GL3340 GIS and Remote Sensing (½ unit)

GL3460 Volcanology (½ unit)

GL3750 Mineral Resources (½ unit)

(Students may replace one option with another ½ unit course in Earth Sciences or Geography)

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### **Progression and award requirements**

The progression and award requirements are essentially the same across all Honours Degree programmes at Royal Holloway as outlined in the College's Undergraduate Regulations. Students must pass units to the value of at least three units on each stage of the programme. Failing marks of 30 – 39% can normally be condoned in up to 3 units across stages 1 and 2. In the final stage failing marks in up to 30 credits can normally be condoned. On some programmes there may be a requirement to pass specific courses in order to progress to the next stage, or to qualify for a particular degree title and this will put restrictions on courses in which failing marks can be condoned (see programme structure above for details). Additionally, there are requirements on the number of courses that must be passed in order to qualify for particular joint or combined honours degrees.

Students are considered for the award and classified on the basis of a weighted average. This is calculated from marks gained in courses taken in stages two and three, and gives twice the weighting to marks gained in stage three. The College's Undergraduate Regulations include full details on progression and award requirements for all undergraduate programmes offered by the College.

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### **Student support and guidance**

- Personal Advisers: All students are allocated a personal adviser who meets with them regularly through the programme. The personal adviser's role is to advise on academic, pastoral and welfare issues. Students may choose to be allocated a different personal adviser at any stage during the programme.
- Degree Programme coordinators and the Academic Coordinator provide a back-up system of academic, pastoral and welfare advice.
- All members of staff are available and accessible during office hours.
- Detailed student handbook and course resources.
- Representation on the Student-Staff Committee.
- Extensive supporting materials and learning resources in College libraries and Computer Centre.
- Dedicated departmental teaching laboratories and computing facilities.
- College Careers and Employability Service and Departmental Careers and Employability Tutor.
- Access to all College and University support services, including Student Counselling Service, Health Centre and the Disability and Dyslexia services for students with disabilities and Specific Learning Difficulties.

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### **Admission requirements**

Details of the Department's typical offer for each programme of study is available on the [Course Finder](#) web page. However, the Department also has considerable flexibility in its admissions and offers policy and strongly encourages applications from non-standard applicants. Students whose first language is not English may also be asked for a qualification in English Language at an appropriate level. For further guidance it may be helpful to contact the [Recruitment and Partnership Office](#).

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### **Further learning and career opportunities**

Graduates from Earth Sciences degree programmes have successfully progressed into a wide range of professions, while some have continued onto Postgraduate studies. In addition to the services offered by the College Careers Service, the Department has strong alumni links. Links with employers are fostered through the Department's External Advisory Board. The following Masters programmes are available within the Department: MSc Petroleum Geoscience), MSc Environmental Diagnosis and Management, MSc Earth Sciences by Research, and there is also the relevant MSc in Quaternary Science in the Department of Geography. The degree programmes are accredited by the Geological Society of London as a pathway to professional status for graduates. For further details please refer to the [Careers and Employability Service](#).

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### **Indicators of quality and standards**

Royal Holloway's position as one of the UK's leading research-intensive institutions was confirmed by the results of the most recent Research Excellence Framework (REF 2014) conducted by the Higher Education Funding Council (HEFCE). The scoring system for the REF 2014 measures research quality in four categories, with the top score of 4\* indicating quality that is world-leading and of the highest standards in terms of originality, significance and rigour and 3\* indicating research that is internationally excellent. 81% of the College's research profile was deemed to be within the 4\* or 3\* categories, an increase of over 20% since 2008. This results for the quality of our research outputs placed Royal Holloway 15<sup>th</sup> in the UK based on an overall Grade Point Average (GPA) score and 20<sup>th</sup> in the UK for 4\* and 3\* research. The Department of Earth Sciences is ranked 14 in the UK for research of 4\* standard and 2 for 3\* and 4\* research and is ranked within the top 5 departments for their subject in the UK.

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### **List of programmes**

All the programmes are taught entirely by staff at Royal Holloway, University of London, and lead to awards of the University of London. Programmes in Earth Sciences are subject to accreditation by the Geological Society of London and the aims and outcomes reflect this. The QAA subject benchmark statements in Earth Sciences, Environmental Sciences and Environmental Studies describe the general features which one might expect from Honours Degree programmes in the subject, and can therefore be used as a point of reference when reading this document (see [www.qaa.ac.uk](http://www.qaa.ac.uk)). UCAS codes are given in parentheses (see [www.ucas.ac.uk](http://www.ucas.ac.uk)).

### **Single Honours Degree programmes in Environmental Geology**

BSc Environmental Geology (F630)

BSc Environmental Geology with a Year in Industry (F690)

### **Diploma of Higher Education**

(Only available to students registered for BSc or MSci in these subjects but who fail to graduate, subject to passing required courses as detailed in the Progression and award requirements section. Not available for admission through UCAS)

DipHE in Environmental Geology

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