

**Royal Holloway, University of London**  
**Course specification for a postgraduate award**  
**MSc Energy Geosciences (3592)**

**Section 1 – Introduction to your course**

This course specification is a formal document, which provides a summary of the main features of your course and the learning outcomes that you might reasonably be expected to achieve and demonstrate if you take full advantage of the learning opportunities that are provided. Further information is contained in the College prospectus, and in various handbooks, all of which you will be able to access online. Alternatively, further information on the College's academic regulations and policies can be found [here](#). Further information on the College's Admissions Policy can be found [here](#).

The Masters course is delivered over one year of full-time study (50 weeks) or up to five years of part-time study (260 weeks) and provides students with the knowledge and skills to address a range of energy issues that can be addressed using Geoscience.

The course draws substantially on the active research of teaching staff in the field of study and on successful completion of the course a student should have an understanding of energy geoscience at a level appropriate for a postgraduate qualification, including the ability to read and readily understand research publications in the field and to practice as an energy geoscientist, either in industry or in academia.

While Royal Holloway keeps all the information made available under review, courses and the availability of individual modules, especially optional modules are necessarily subject to change at any time, and you are therefore advised to seek confirmation of any factors which might affect your decision to follow a specific course. In turn, Royal Holloway will inform you as soon as is practicable of any significant changes which might affect your studies.

The following is brief description for some of the most important terminology for understanding the content of this document:

*Degree course* – Also referred to as 'course', this term refers to the qualification you will be awarded upon successful completion of your studies. 'Courses' were formerly known as 'programmes' at Royal Holloway.

*Module* – This refers to the credits you will study each year to complete your degree course. Postgraduate taught degrees at Royal Holloway comprise 180 credits. On some degree courses a certain number of optional modules must be passed for a particular degree title. 'Modules' were formerly known as 'course units' at Royal Holloway.

Section 2 – Course details			
Date of specification update	November 2023	Location of study	Egham
Course award and title	MSc Energy Geosciences	Level of study	Postgraduate
Course code	3592	Year of entry	2024/25
Awarding body	Royal Holloway, University of London		
Department/ School	Earth Sciences, School of Life Sciences and the Environment	Other departments or schools involved in teaching the course	
Mode(s) of attendance	Full time Part time The taught modules are delivered in block mode	Duration of the course	One year (52 weeks) full-time Two to five years (104 - 260 weeks) part-time
Accrediting Professional, Statutory or Regulatory Body requirement(s)	N/A	For queries on admissions:	<a href="https://royalholloway.ac.uk/applicationquery">https://royalholloway.ac.uk/applicationquery</a>
Link to Coursefinder for further information:	<a href="https://www.royalholloway.ac.uk/studying-here/">https://www.royalholloway.ac.uk/studying-here/</a>		

Section 3 – Degree course structure				
3.1 Mandatory module information				
The following table summarises the mandatory modules which students must take in each year of study				
Module code	Module title	Credits	FHEQ level	Module status (see section 6)
GL520	Rock Mechanics, Engineering and Fluid Flow	15	7	MC
EA5110	Data analysis and GIS	15	7	MC
GL5201	Geophysical methods	15	7	MC
GL5301	Structural geology and basin evolution	15	7	MC
GL5401	Sedimentology and stratigraphy	15	7	MC
GL5960	CCS and subsurface energy storage	15	7	MC
GL5950	Renewable energy	15	7	MC
GL5601	Subsurface analysis	15	7	MC
GL5011	Independent project	60	7	MNC

This table sets out the most important information for the mandatory modules on your degree course. These modules are central to achieving your learning outcomes, so they are compulsory, and all students on your degree course will be required to take them. You will be automatically registered for these modules. Mandatory modules fall into two categories; 'condonable' or 'non-condonable'.

In the case of mandatory 'non-condonable' (MNC) modules, you must pass the module to successfully graduate with a particular degree title, or before you can proceed to the next year of your course where studying part-time. In the case of mandatory 'condonable' (MC) modules, these must be taken but you can still progress or graduate even if you do not pass them (see [Academic Regulations](#) on condonable fails). Please note that although Royal Holloway will keep changes to a minimum, changes to your degree course may be made where reasonable and necessary due to unexpected events. For example; where requirements of relevant Professional, Statutory or Regulatory Bodies have changed and course requirements must change accordingly, or where changes are deemed necessary on the basis of student feedback and/or the advice of external advisors, to enhance academic provision.

### 3.2 Optional modules

In addition to mandatory modules, there will be a number of optional modules available during the course of your degree. The following table lists a selection of optional modules that are likely to be available. However, not all may be available every year. Although Royal Holloway will keep changes to a minimum, new options may be offered or existing ones may be withdrawn. For example; where reasonable and necessary due to unexpected events, where requirements of relevant Professional, Statutory or Regulatory Bodies (PSRBs) have changed and course requirements must change accordingly, or where changes are deemed necessary on the basis of student feedback and/or the advice of External Advisors, to enhance academic provision. There may be additional requirements around option selection, please contact [the department](#) for further information.

#### Optional modules.

There are no optional modules available on this degree course.

### Section 4 - Progressing through each year of your degree course

For further information on the progression and award requirements for your degree, please refer to Royal Holloway's [Academic Regulations](#).

Progression throughout the year/s is monitored through performance in summative or formative coursework assignments. Please note that if you hold a Tier 4 (General) Student Visa and you choose to leave (or are required to leave because of non-progression) or complete early (before the course end date stated on your CAS), then this will be reported to UKVI.

All postgraduate taught students are required to take and pass the non-credit bearing Moodle-based Academic Integrity module SS1001 in order to be awarded. The pass mark for the module assessment is stated in the on-line Academic Integrity Moodle module. Students may attempt the assessment as often as they wish with no penalties or capping. Students who otherwise meet the requirements for award as stipulated in the College's Postgraduate Taught Regulations (Section 15: Consideration and classification of candidates for the award) but fail to pass the Moodle-based Academic Integrity module will not be awarded

#### Part-time structure

The part-time MSc course normally lasts two years (106 weeks), beginning in September of year one\*\*. Part-time students will take a selection of first term and second term modules in each year of study and ideally will complete all components of three taught modules in year one and the remaining three taught modules in year 2. Work on Independent Projects can be carried out part-time from the summer of the first year, but the project report will normally be submitted by mid-August of year 2, with an oral and poster presentation made in early September of the same year. The course of study must be agreed with the Course Director in advance.

\*\* part time students are permitted under College regulations to complete their course of study over a period of up to 5 years. Students who are unable to complete the course within the standard 2 year timeframe should liaise with the course director to agree a time frame for completion.

The course structure for the PG Certificate Energy Geosciences, named award route, is as follows:

GL5520: Rock mechanics, engineering and fluid flow (15 credits) non condonable

EA5110: Data analysis and GIS (15 credits) non condonable

GL5960 CCS and subsurface energy storage (15 credits) non condonable

GL5950 Renewable energy (15 credits) non condonable

### Section 5 – Educational aims of the course

The aims of this course are to:

- to provide systematic understanding and knowledge of the tectonic, structural and sedimentological controls that govern sedimentary basins;
- to provide vocational training in the analytical tools and practical techniques that will enable students to understand sedimentary basins;
- to encourage a critical understanding and awareness of current issues and developments in energy geoscience;
- to encourage a critical understanding and awareness of current issues and developments in the extraction of hydrocarbons from the subsurface;
- to encourage a critical understanding and awareness of current issues and developments in renewable energy (i.e. geothermal, solar, wind, marine & hydropower), the storage of energy and greenhouse gasses in the subsurface and geologically-focussed aspects of non-geothermal renewable energy;
- to foster students' intellectual development and independent learning ability required for continuing professional and personal development;
- to provide an opportunity for students to obtain a postgraduate qualification in energy geoscience by either full-time or part-time study.

**Section 6 – Course learning outcomes**

**In general terms, the courses provide opportunities for students to develop and demonstrate the following learning outcomes. (*Categories – Knowledge and understanding (K), Skills and other attributes (S), and Transferable skills (\*)*)**

<p>Graduates from this course will be expected to have an extensive knowledge of:</p> <ul style="list-style-type: none"> <li>• the tectonic and geodynamic processes that control the formation of sedimentary basins (K);</li> <li>• the processes that control the structural and stratigraphic architecture of sedimentary basins (K);</li> <li>• the processes that control the distribution and properties of sediments within sedimentary basins (K);</li> <li>• the controls on the distribution of hydrocarbons and other fluids in sedimentary basins(K);</li> <li>• the properties of hydrocarbon reservoirs, and the implications of this for hydrocarbon production and field development (K);</li> <li>• the properties of subsurface for the storage of carbon dioxide and energy (K);</li> <li>• the properties of renewable energy sources (K);</li> <li>• by the end of the course graduates will have developed a critical understanding of recent developments in these areas and the issues and controversies that are the subject of current debate (K).</li> </ul>	<p><i>Skills and other attributes</i></p> <ul style="list-style-type: none"> <li>• Interpret seismic, well log, and core data and remote sensing imagery using techniques and software that are currently employed within the energy industry, including the use of GIS data bases (S);</li> <li>• analyse, interpret and model geological structures (S);</li> <li>• apply knowledge to the appraisal of subsurface resources and renewable energy (S*);</li> <li>• design and execute original research, using appropriate methods of data collection and analysis, develop and test multiple hypotheses to explain the observations and to critically evaluate the outcomes (S*);</li> <li>• report and communicate complex ideas in a clear and concise manner, both orally and in writing (S*).</li> </ul>
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## Section 7 - Teaching, learning and assessment

Teaching and learning draw on the methods and concepts used in the study of geosciences. It is also strongly informed by the current research interests of the core teaching team in geosciences. The main methods used to develop knowledge and understanding are: formal lectures by staff, lectures by visitors from industry, practical exercises, field exercises, team work exercises and extended group projects, one- to-one discussions, student presentations and guided independent study and research for the project. Details of the assessments for individual modules can be obtained from the [Module Catalogue](#).

Assessment is typically by coursework assignments, reports, practical classes, oral presentations and the research project. Full details of the assessments for individual modules can be obtained from the [Department](#).

The course provides a firm foundation for postgraduate study and research, and for careers in the hydrocarbon and low carbon industry. Graduates of the course have successfully progressed on to more advanced research degrees at Royal Holloway and elsewhere. Careers which will especially suit graduates, and which they have gone on to pursue, include work as Geoscientists in international energy companies, in geological consultancy firms and for government bodies engaged with the energy industry. Furthermore, it is anticipated by the UK government, that industries exploiting the subsurface for energy and carbon-dioxide storage will begin to rival the oil-industry in economic-size from 2030 onwards. Graduates of this course will be in an excellent position to take advantage of the resulting opportunities as they begin to develop in the next few years and decades. The course also provides graduates with range of intellectual, personal, and social skills that are transferable to a wide variety of other employment opportunities. In addition to the services offered by the College Careers Service, the Department has strong links with employers and arranges several recruitment visits by potential employers. For more details on further learning and career opportunities please refer to the [Careers Service](#).

## Section 8 – Additional costs

£1,000 for mandatory fieldwork trips

These estimated costs relate to studying this particular degree course at Royal Holloway. General costs such as accommodation, food, books and other learning materials and printing etc., have not been included, but further information is available on our [website](#).

Section 9 – Indicators of quality and standards	
<b>QAA Framework for Higher Education Qualifications (FHEQ) Level</b>	7
Your course is designed in accordance with the FHEQ to ensure your qualification is awarded on the basis of nationally established standards of achievement, for both outcomes and attainment. The qualification descriptors within the FHEQ set out the generic outcomes and attributes expected for the award of individual qualifications. The qualification descriptors contained in the FHEQ exemplify the outcomes and attributes expected of learning that results in the award of higher education qualifications. These outcomes represent the integration of various learning experiences resulting from designated and coherent courses of study.	
<b>QAA Characteristics Statement (Master's Degrees) – September 2015</b>	<a href="https://www.qaa.ac.uk/en/quality-code/supporting-resources">https://www.qaa.ac.uk/en/quality-code/supporting-resources</a>
Subject benchmark statements provide a means for the academic community to describe the nature and characteristics of courses in a specific subject or subject area. They also represent general expectations about standards for the award of qualifications at a given level in terms of the attributes and capabilities that those possessing qualifications should have demonstrated.	



**Section 10 – Further information**

This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate when taking full advantage of the learning opportunities that are available. More detailed information on modules, including teaching and learning methods, and methods of assessment, can be found via the online module catalogue. The accuracy of the information contained in this document is reviewed regularly by the university and may also be checked routinely by external agencies.

Your course will be reviewed regularly, both by the university as part of its cyclical quality enhancement processes, and/or by your department or school, who may wish to make improvements to the curriculum, or in response to resource planning. As such, your course may be revised during the course of your study at Royal Holloway. However, your department or school will take reasonable steps to consult with students via appropriate channels when considering changes. All continuing students will be routinely informed of any significant changes.

**Section 11 – Intermediate exit awards (where available)**

You may be eligible for an intermediate exit award if you complete part of the course as detailed in this document. Any additional criteria (e.g. mandatory modules, credit requirements) for intermediate awards is outlined in the sections below.

Award	Criteria	Awarding body
PG Diploma	Passes in at least 120 credits, with fails of between 40% to 49% for up to 40 credits condonable (with the exception of any course specific requirements).	Royal Holloway and Bedford New College
PG Certificate	Passes in at least 60 credits with no condonable fails	Royal Holloway and Bedford New College

**Section 12 - Associated award(s) with Banner Codes**

MSc Energy Geosciences (3592) PG Cert named award (3644)	PG Diploma Energy Geosciences exit award (3592) PG Certificate Energy Geosciences exit award (3644)
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