

PROGRAMME SPECIFICATION

This document describes the **Master of Science, Postgraduate Diploma and Postgraduate Certificate in Petroleum Geoscience**. This specification is valid for new entrants from **September 2015**.

The aims of the programme are:

- to provide systematic understanding and knowledge of the tectonic, structural and sedimentological controls that govern the distribution and occurrence of hydrocarbons in sedimentary basins;
- to provide vocational training in the analytical tools and practical techniques that will enable
- students to understand hydrocarbon occurrences on all scales from basin wide petroleum systems to reservoir models of individual fields;
- to encourage a critical understanding and awareness of current issues and developments in petroleum geoscience;
- 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 petroleum geoscience by either full-time or part-time study.

The Masters programme is delivered over one year of full-time study (52 weeks) or two years of part-time study (104 weeks) and provides students with the knowledge and skills to address a range of exploration and production challenges, from predicting the likely distribution of hydrocarbons in a frontier sedimentary basin, to quantifying the complex structural, stratigraphic and sedimentological architecture of individual reservoirs. The programme is based on the equivalent of seven courses including the independent project.

The programme draws substantially on the active research of teaching staff in the field of study and on successful completion of the programme a student should have an understanding of petroleum 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 a petroleum geoscientist, either in industry or in academia.

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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 programme provides opportunities for students to develop and demonstrate the following learning outcomes:

Knowledge and understanding

- Graduates from this programme will be expected to have an extensive knowledge of:
- The tectonic and geodynamic processes that control the formation of sedimentary basins;
- The processes that control the structural and stratigraphic architecture of sedimentary basins;
- The processes that control the distribution and properties of sediments within sedimentary basins
- (optional courses GL5401 and GL5501);
- The controls on the distribution of hydrocarbons and other fluids in sedimentary basins;
- The properties of hydrocarbon reservoirs, and the implications of this for hydrocarbon production and field development.

Graduates will also have the ability to develop a critical understanding of recent developments in these areas and the issues and controversies that are the subject of current debate.

Skills and other attributes

- Interpret seismic, well log, and core data and remote sensing imagery using techniques and software that are currently employed within the hydrocarbon industry, including the use of GIS data bases;
- Analyse, interpret and model geological structures (optional courses GL5701 and GL5801);
- Apply knowledge to the appraisal of source rock maturity, hydrocarbon prospects, hydrocarbon fields, and to the development of reservoir models;
- Design and execute original research, using appropriate methods of data collection and analysis, develop and test hypotheses to explain the observations and to critically evaluate the outcomes*;
- Report and communicate complex ideas in a clear and concise manner, both orally and in writing*.

* transferable skills

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Teaching, learning and assessment

Teaching and learning draws 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.

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

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Details of the programme structure(s)

The brief outline of the programme is shown below; however students can obtain further details from the Programme Handbook. **Credits are indicated in brackets, and indicate proportional weighting towards the Masters and Postgraduate Diploma classification grade.** The programme structure for the Postgraduate Diploma is as below, with the exception that students will not undertake the Independent Project (GL5011).

The full-time programme lasts 52 weeks, beginning in September and consists of four mandatory courses (80 Credits), four optional courses (40 Credits) and the Independent Project (60 Credits). Full-time students will normally submit their research projects by late August and make an oral and poster presentation in early September of their academic year of study, having completed their study and assessment of the other courses by late April.

All students must take the following mandatory courses:

GL5101: Tectonics and Lithosphere Dynamics (20 credits)

GL5201: Geophysical Analysis (20 credits)

GL5301: Structural Analysis (20 credits)

GL5601: Petroleum Systems (20 credits)

GL5011: Independent Project (60 credits)

Students must also take two of the following optional courses:

GL5401: Sedimentology (20 credits)

GL5501: Reservoir Geosciences (20 credits)

GL5701: Advanced Structural Analysis (20 credits)

GL5801: Regional Tectonic Analysis (20 credits)

Part-time structure

The part-time programme lasts two years (104 weeks), beginning in September of year one. Part-time students will take a selection of first term and second term courses in each year of study and ideally will

complete all components of three taught courses in year one and the remaining three taught courses in year 2. However, there may be instances where it is possible to defer a component of a course (a field trip, or a particular piece of project work, for example) into the second year. Exams for each course are taken when all the relevant modules for that course have been completed. 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 late August of year 2, with an oral and poster presentation made in early September of the same year. The programme of study must be agreed with the Programme Director in advance.

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Progression and award requirements

Progression throughout the year/s is monitored through assessed performance in coursework and examinations.

Please note that if a student holds a Tier 4 (General) Student Visa and chooses to leave (or is required to leave because of non-progression) or completes early (before the course end date stated on their CAS), then this will be reported to UKVI.

To pass the **Masters** programme a student must achieve an overall weighted average of at least 50.00%, with no mark in any course which counts towards the final assessment falling below 50%. Failure marks between 40-49% can be condoned in courses constituting up to a maximum of 40 credits, provided that the overall weighted average is at least 50.00%, but a failure mark (i.e. below 50%) in the Independent Research Project cannot be condoned.

The Masters degree with Merit may be awarded if a student achieves an overall weighted average of 60.00% or above, with no mark in any course which counts towards the final assessment falling below 50%.

The Masters degree with Distinction may be awarded if a student achieves an overall weighted average of 70.00% or above, with no mark in any course which counts towards the final assessment falling below 50%. A Distinction will not normally be awarded if a student re-sits or re-takes any course of the programme. In exceptional circumstances a viva may be held for a student at the request of the Examiners.

Part-time Masters students can proceed to the second year of study provided that the marks they have in the courses that they have completed are consistent with the criteria for passing the Masters overall. As part-time students may take some courses over two years, depending on how they wish to structure their studies, there is no minimum requirement for the number of courses that need to be passed at the end of the first year. However, if students have fail marks in courses in the range 40-49%, constituting more than 40 credits, or a fail mark below 40% at the end of the first year, they will be required to resit those units before proceeding to the second year of the programme.

The **Postgraduate Diploma** may be awarded if a student achieves an overall weighted average of at least 50.00%, with no mark in any course which counts towards the final assessment falling below 50% and has either chosen not to proceed to the Independent Research Project, or has failed the Independent Research Project on either the first or second attempt. Failure marks in the region 40-49% are not usually condoned for the award of a Postgraduate Diploma, but if they are, such condoned fails would be in courses which do not constitute more than 40 credits.

The Postgraduate Diploma with Merit may be awarded if a student achieves an overall weighted average of 60.00% or above, with no mark in any course which counts towards the final assessment falling below 50%.

The Postgraduate Diploma with Distinction may be awarded if a student achieves an overall weighted average of 70.00% or above, with no mark in any course which counts towards the final assessment falling below 50%. A Distinction will not normally be awarded if a student re-sits or re-takes any course. In exceptional circumstances a viva may be held for a student at the request of the Examiners.

The **Postgraduate Certificate** may be awarded if a student achieves an overall weighted average of at least 50.00%, with no mark in any taught course which counts towards the final assessment falling below 50%. Failure marks in the region 40-49% are not usually condoned for the award of a Postgraduate Certificate.

The Postgraduate Certificate with Merit may be awarded if a student achieves an overall weighted average

of 60.00% or above, with no mark in any course which counts towards the final assessment falling below 50%.

The Postgraduate Certificate with Distinction may be awarded if a student achieves an overall weighted average of 70.00% or above, with no mark in any course which counts towards the final assessment falling below 50%. A Distinction will not normally be awarded if a student re-sits or re-takes any element of the programme. In exceptional circumstances a viva may be held for a student at the request of the Examiners.

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Student support and guidance

- The Programme Directors act as Personal Advisors and meet with the students on a regular basis to advise on academic, pastoral and welfare issues.
- The Head of Department, Course coordinators, tutors and project supervisors provide a back-up system of academic, pastoral and welfare advice.
- A departmental induction programme is provided in the first week for all new postgraduate students.
- This provides safety briefings and an introduction to departmental and College facilities.
- All members of staff are available and accessible during office hours.
- Representation on the Staff-Student Committee.
- Detailed Programme and Postgraduate Handbooks and course resources, provided via the Web where appropriate.
- Extensive supporting materials and learning resources in College and University libraries and Computer Centre.
- Dedicated departmental teaching laboratories and computing facilities.
- Postgraduate students can take part in social events organized by the New Lyell Geological Society, and there are regular, informal social events in the Department.
- Access to all College and University support services, including Student Counselling Service, the Centre for the Development of Academic Skills, Health Centre and Disability and Dyslexia Services (ESO) for students with special needs.

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Admission requirements

Admission to the programme normally requires at least a Second Class Honours Degree in a field relevant to Petroleum Geoscience or in a closely cognate discipline. However, the Department has considerable flexibility in its admissions and offers policy and strongly encourages applications from applicants with strong professional experience and other qualifications.

Students whose first language is not English may also be asked for a qualification in English Language at an appropriate level. For further details please refer to the [Course Finder](#). It may also be helpful to contact the [Admissions Office](#) for specific guidance on the entrance requirements for particular programmes.

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Further learning and career opportunities

The programme provides a firm foundation for postgraduate study and research, and for careers in the hydrocarbon industry. Graduates of the programme 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 Petroleum Geoscientists in international oil companies, in geological consultancy for the oil industry and for government bodies engaged with the oil industry. The programme also provides graduates with range of intellectual, personal and social skills that are transferable to a wide variety of 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](#).

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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 result placed Royal Holloway 31st overall in the UK for 4* and 3* research and 33rd based on an overall Grade Point Average (GPA) score.

The Department of Earth Sciences is a world-leading research department. The REF 2014 reported that in its assessment 94% of research was classified as 4* world leading and 3* internationally excellent in terms of originality, significance and rigour. By this criterion, Earth Sciences is 2nd among UK universities. The Department of Earth Sciences achieved a REF 2014 ranking based on GPA score of 9th in the UK.

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List of programmes

The programmes are taught by staff at Royal Holloway, University of London and the Masters leads to an award of the University of London. The Postgraduate Diploma and Postgraduate Certificate lead to awards of Royal Holloway and Bedford New College. The Banner programme codes are given in parentheses.

Master of Science Programmes in Petroleum Geoscience

MSc in Petroleum Geoscience (2945)

Postgraduate Diploma in Petroleum Geoscience

PG Diploma in Petroleum Geoscience (2946)

Postgraduate Certificate in Petroleum Geoscience

PG Certificate in Petroleum Geoscience (2947)

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