Form P10 Heriot-Watt University – Programme Description Template

Version 4.0 (2010/2011

1. Programme Code(s) (*recruitment & exit awards)*	2. Programme Titles for all awards *(unabbreviated)*	3. Main Award(s) *(to be recruited to)*	4. Exit Awards *(for graduation only)*
G177-GSE, G175-GSE, G170-GSE	Petroleum Geoscience	MSc	MSc, PG Dip, PG Cert

5. Type	6. Programme Accredited by	7. UCAS Code	8. School	9. QAA Subject Benchmarking Group(s)	10. Date of Production/ Revision
Taught	Geological Society London (in progress)		Institute of Petroleum Engineering	Earth Science/Engineering	January 2012

11. Educational Aims of the Programme

The overall aim of this programme is to teach earth scientists specialised courses at postgraduate level on the fundamentals of Geoscience for the Petroleum Industry, specifically concentrating on subsurface exploration and appraisal, with some topics applicable to development. The programme is structured around core courses in various Geoscience and Engineering disciplines, and their integration for effective Subsurface Characterisation and Management. The programme and its constituent courses are of relevance to the oil industry (especially oil and gas exploration) and related subsurface industries (Carbon Storage, in situ gasification, groundwater, waste disposal).

The programme aims to produce graduates who are experienced at operating in multidisciplinary teams.

The successful graduate will be in a position to enter industry immediately, and be in strong demand worldwide.

The programme encourages the development of personal qualities and professional competencies in Geosciences and Engineering.

12. The Programme provides opportunities for learners to achieve the following outcomes:

Subject Mastery

Understanding, Knowledge and Cognitive Skills

The course gives the opportunity to develop skills in:

- Fundamental concepts, principles and theories of the relevant Geosciences and Engineering disciplines
- Analytical tools and principles involved in all aspects of subsurface exploration and evaluation
- Use and application of leading computer software tools used in static modelling of basins and reservoirs
- Use geological knowledge, seismic, geological statistics, modelling and other techniques to assess a range of complex geological and engineering information to characterise a reservoir or basin system and determine the optimal exploration and exploitation of the subsurface
- Integrate multi-disciplinary geoscience and engineering principles in order to adopt a holistic approach to problem-solving
- Analyse imperfect and incomplete datasets to assess and characterise reservoirs and basins and design appropriate exploration and development scenarios
- Improve understanding of basin analysis and reservoir geology and its impact on flow, using actual core and outcrop studies.

Scholarship, Enquiry and Research

The students are expected to read more deeply into the subjects by independent reading around subjects and by referencing materials provided in classes, tutorials, field work reports and laboratory exercises. This is important in developing study plans, developing research plans and deciding research methods. Students are given multiple opportunities to develop research skills, including internal assessment in taught courses as well as an independent research project.

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Personal Abilities

Industrial, Commercial and Professional Practice

There is exposure to industry via seminars, visits to companies, attendance at the EAGE North Britain Student Meeting and during the Group Project where students are expected to participate in industry workshops/seminars on technical, environmental and commercial processes, as well as being assessed by industry visitors and external examiners from industry. Part of the Individual Project involves an appreciation of the business context of the research work.

Autonomy, Accountability and Working with Others

The students learn to develop an appreciation of their role in their studies through self study, individual project and team work during the group project. They are responsible for meeting deadlines for submission of work during all activities both as individuals and as teams.

Communication, Numeracy and ICT

Some internal assessment projects as well as both group and individual research projects require both written and oral presentations to be made by students and these provide opportunities for students to learn about and develop skills in communication and ICT. The nature of the degree involves demonstration of numerical skills in various analytical disciplines, especially as part of problem solving exercises.

13. Approaches to Teaching and Learning:

Course notes are provided for some courses, however for other courses students are expected to take notes and are provided with powerpoint slide packs. All lecture sessions are reinforced by tutorials or classroom exercises. Coursework is then further used to extend the concepts learned in lectures and notes and to demonstrate the use of problem solving skills by the students. Course notes come with model exams and answers, as well as recommended reading lists or suggestions for further reading. All courses have a VLE page, on which notes, powerpoints, reading lists, past exams, model answers, exercises and assessment are routinely posted for all courses.

14. Assessment Policies:

Assessment is based on a combination of examination, project, and coursework. The project work is assessed on written and oral presentations. In the Group Project, part of the assessment is by peer review.

The accompanying Programme Structure template provides details of courses, awards and credits for the programme.

The accompanying Programme Notes provide details of stage notes, progression requirements and award requirements for the programme.