

BSc (Hons) Geology

Programme Specification

Primary Purpose

Course management and quality assurance.

Secondary Purpose

Detailed information for students, staff and employers. Current students should refer to the related Course Handbook for further detail.

Disclaimer

The University of Portsmouth has checked the information given in this Programme Specification. We will endeavour to deliver the course in keeping with this Programme Specification; however, changes may sometimes be required arising from annual monitoring, student feedback, review and update of units and courses. Where this activity leads to significant changes to units and courses, there will be prior consultation of students and others, wherever possible, and the University will take all reasonable steps to minimize disruption to students. It is also possible that the University may not be able to offer a unit or course for reasons outside of its control, for example; the absence of a member of staff or low student registration numbers. Where this is the case, the University will endeavour to inform applicants and students as soon as possible. Where appropriate, the University will facilitate the transfer of affected students to another suitable course.

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Course Details

1. Named Awards

BSc (Hons) Geology

2. Course Code (and UCAS Code if applicable)

C0223S (F600)

3. Awarding Body

University of Portsmouth

4. Teaching Institution

University of Portsmouth

5. Accrediting Body

The Geological Society of London

6. QAA Benchmark Groups

Earth Sciences, Environmental Sciences and Environmental Studies

7. Document Control Information

September 2017

8. Effective Session

2017/18

9. Author

Dr Dean Bullen

10. Faculty

Faculty of Science

11. Department

School of Earth and Environmental Sciences

Curriculum

12. Educational Aims

The course aims to equip students to work as geoscientists or in alternative relevant employment. In addition, and more generally, the course aims to:

- Provide a challenging, stimulating and self-rewarding study environment.
- Provide a framework whereby individual study paths may be forged based on choice from a range of options.
- Develop a range of transferable skills by means of opportunities provided in the study units.

- Accommodate student needs in relation to maximising their career potential by enabling them to develop knowledge, understanding and skills in their chosen subject area.

13. Reference Points

The programme has been developed taking account of:

- The University of Portsmouth Curriculum Framework Document (2016)
- The scholarship, research and industrial expertise of academic members of staff
- The National Qualifications Framework
- QAA Code of Practice for the Assurance of Academic Quality and Standards in Higher Education
- Framework for Higher Education Qualifications (FHEQ)
- The Benchmark Statement for Earth Sciences, Environmental Sciences and Environmental Studies
- The accreditation requirements of the Geology Society of London

In particular the programme has been designed with the following benchmark elements in mind:

- Earth system science
- Major geoscience paradigms
- Temporal and spatial scales
- Earth structure, materials and processes
- Terminology, nomenclature and classification and practical knowledge
- Awareness and informed concern of Earth science issues

(Statements in section 15A that can be directly mapped to the benchmarking statement are marked [B])

14. General Learning Outcomes

Level 4

Certificates of Higher Education are awarded to students who have demonstrated:

- knowledge of the underlying concepts and principles associated with their area(s) of study, and an ability to evaluate and interpret these within the context of that area of study
- an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with basic theories and concepts of their subject(s) of study

Typically, holders of the qualification will be able to:

- evaluate the appropriateness of different approaches to solving problems related to their area(s) of study and/or work
- communicate the results of their study/work accurately and reliably, and with structured and coherent arguments
- undertake further training and develop new skills within a structured and managed environment

And holders will have:

- the qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility

Level 5

Diplomas in Higher Education are awarded to students who have demonstrated:

- knowledge and critical understanding of the well-established principles of their area(s) of study, and of the way in which those principles have developed

- ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context
- knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study
- an understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge

Typically, holders of the qualification will be able to:

- use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis
- effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively
- undertake further training, develop existing skills and acquire new competences that will enable them to assume significant responsibility within organisations

And holders will have:

- the qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making

Level 6

Bachelor's degrees/Bachelor's degrees with honours are awarded to students who have demonstrated:

- a systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge, at least some of which is at, or informed by, the forefront of defined aspects of a discipline
- an ability to deploy accurately established techniques of analysis and enquiry within a discipline
- conceptual understanding that enables the student:
 - to devise and sustain arguments, and/or to solve problems, using ideas and techniques, some of which are at the forefront of a discipline
 - to describe and comment upon particular aspects of current research, or equivalent advanced scholarship, in the discipline
- an appreciation of the uncertainty, ambiguity and limits of knowledge
- the ability to manage their own learning, and to make use of scholarly reviews and primary sources (for example, refereed research articles and/or original materials appropriate to the discipline)

Typically, holders of the qualification will be able to:

- apply the methods and techniques that they have learned to review, consolidate, extend and apply their knowledge and understanding, and to initiate and carry out projects
- critically evaluate arguments, assumptions, abstract concepts and data (that may be incomplete), to make judgements, and to frame appropriate questions to achieve a solution - or identify a range of solutions - to a problem
- communicate information, ideas, problems and solutions to both specialist and non-specialist audiences

And holders will have:

- the qualities and transferable skills necessary for employment requiring:
 - the exercise of initiative and personal responsibility
 - decision-making in complex and unpredictable contexts
- the learning ability needed to undertake appropriate further training of a professional or equivalent nature

15. Learning Outcomes

Programme learning outcomes derived directly from the SBS and are denoted by the abbreviation [B] after the learning outcome.

A. Knowledge and Understanding of:

- A.1 The evolution, structure and composition of the Earth [B].
- A.2 The principles of stratigraphy and the relationships between rock bodies [B].
- A.3 The nature of earth materials: minerals and rocks [B].
- A.4 Life: its origin, evolution and diversity through time [B].
- A.5 The processes that control the evolution of the Earth's crust at different temporal and spatial scales and their relationship to human activities. [B]
- A.6 The location of economic resources in the earth's crust. Their exploitation and consequential environmental impact [B].
- A.7 Methods of geological data acquisition and analysis [B].
- A.8 Research methodologies in specified fields of geology [B].
- A.9 Current topical research problems in specialised fields of geology [B].

B. Cognitive (Intellectual or Thinking) Skills, able to:

- B.1 Formulate and test a hypothesis.
- B.2 Plan, conduct, evaluate and report a programme of research.
- B.3 Select and use principles and procedures in a variety of situations.
- B.4 Research and synthesise information from a variety of sources.
- B.5 Analyse, evaluate, interpret and integrate data from a variety of sources.

C. Practical (Professional or Subject) Skills, able to:

- C.1 Use laboratory equipment and conduct analytical procedures (appropriate to the discipline) in a safe, accurate and precise manner.
- C.2 Carry out good laboratory/field practice according to local, national and international regulations
- C.3 Prepare scientific, referenced reports.
- C.4 Utilise a wide variety of field data acquisition skills.
- C.5 Employ appropriate specialist geoscience software applications
- C.6 Develop an adaptable and flexible approach to study and work

D. Transferable (Graduate and Employability) Skills, able to:

- D.1 Take responsibility for the planning and execution of their learning.
- D.2 Communicate effectively using a range of media.
- D.3 Demonstrate numerical and statistical skills appropriate to a scientist.
- D.4 Be competent in the use of Information Technology (word processing, databases, spreadsheets, statistical packages, electronic mail and Internet).
- D.5 Be able to work independently and as part of a team.
- D.6 Identify and use the appropriate resources (human and physical) to enable the successful completion of a task.
- D.7 Be able to manage their time and meet deadlines.

D.8 Critically reflect on their learning and demonstrate how it can be transferred to other situations

16. Learning and Teaching Strategies and Methods

Subject knowledge and understanding is delivered via lectures, practical classes and tutorials and fieldwork (A1-A7). Student-centred activities focus on practical classes, tutorials and fieldwork (A3-A6 and especially A7) with computer-based practical classes forming a significant component. All level 4, 5, and 6 students complete geological mapping training exercises (A7) and conduct an independent, field mapping-based final-year project (A3-A7).

Cognitive skills are embedded throughout the programme. The level 6 project develops skills in formulating and testing hypotheses, and conducting a programme of research (B1-B2). Lectures, seminars, tutorials and practical classes encourage the integration and analysis of data (B3-B5). Student-centred activities such as literature reviews, case studies and the level 6 project encourage research, analysis and synthesis (B1-B5).

Practical skills are developed in practical classes, and via projects and portfolios, literature reviews, case studies, and assignments (C1-C6). The recognition and acquisition of professional skills are embedded in many units, such as the level 5 unit Professional Skills for Geoscientists.

Transferrable skills are developed in lectures, practical/IT classes, worked examples, subject specific and generic tutorials, group oral presentations, assignments (including literature reviews, case studies and projects) (D1-D7).

17. Assessment Strategy

Level 4: Although students on this degree pathway will generally have had a science-based education, the qualifications profile can be quite diverse. The main aim of Level 4 is to give a foundation in a wide range of Geoscience topics and consolidate the key science, maths and literacy skills that will be required in Levels 5, and 6. The assessment approaches reflect this aim and therefore include short, closed exams, in-class tests, small focused laboratory reports, literature reviews, portfolios and presentations. These have been selected to enable students to practice time restricted thinking, consolidate scientific data interpretation and presentation techniques and to gain and build confidence in transferable skills such as producing academic posters. Formative assessment is staged through the year within several units (for example Quantitative Methods) but is, most significantly, given during all laboratory practicals and field days. Assessment does not include complex coursework assignments such as technical reports, fieldwork assignments or long closed exams as we believe that these assessment types test higher-level cognitive skills and are best suited to levels 5 and particularly 6.

Level 5: The assessment approach includes 1 or 1.5 hour closed exams, open-book in-class tests; laboratory and fieldwork reports, presentations and portfolios. Closed exams are used to enable students to practise time restricted thinking, whilst open book practical assessments are used to assess learning outcomes that demonstrate competence in the fundamental geoscience skills of description and quantification of a wide range of lithologies and structures. These are key skills required by industry. The laboratory and fieldwork reports develop the student's ability to collect and assimilate large data sets into coherent, scientific reports, another key transferable skill. Confidence in presentation techniques is enhanced by group presentation work. Formative assessment is given during laboratory practical classes and especially during residential fieldwork. Formative assessment is also achieved during the production of reports by means of feedback given on sections of the report prior to final submission..

Level 6: The assessment approaches for the core units include closed exams, reports, presentations and a final year dissertation. Closed exams are used to enable students to practise time restricted thinking primarily for units such as Geodynamics that require the synthesis of information across a range of geoscience topics. Assessment of reports demonstrates the development beyond Level 5 of the ability to collect and assimilate large data sets into coherent, scientific reports. Confidence in presentation techniques is enhanced by individual presentations made as part of the project. The project allows the student to carry out a guided, independent piece of work from the initial planning, data collection and mapping exercise, through to presentation of a

final map and explanatory report. Formative assessment on the project is given throughout the year by the project tutor assigned to the student.

Many of the main learning outcomes are assessed at all levels:

Assessment of Knowledge and Understanding learning outcomes is via unseen examinations, in-class tests and MCQ (A1-A6), practical reports (A1-A7), written assignments, reviews, case studies (A2-A6), portfolios (A2-A6), project (A3-A7).

Assessment of Cognitive Skills learning outcomes are via unseen examinations, including data interpretation (B3-B5), practical reports, oral presentations (B3-B5), written assignments, literature reviews, case studies, portfolios, (B3-B5), project reports (B1-B5).

Practical and Professional Skills are assessed via laboratory reports, literature reviews, case studies, project reports, field-notebooks, maps and assignments (C1-C6).

Transferable skill assessment is via coursework and fieldwork exercises, practical reports, projects, assignments, oral presentations, learning contracts, personal and academic portfolios (D1-D8).

18. Course Structure, Progression and Award Requirements

See [Unit Web Search](#)¹ for full details on the course structure and units

This is a taught three year programme and includes the formulation, planning and execution of an independent field-based project at Level 6. The programme is offered in full-time mode.

- The programme consists of core units with no options offered at Levels 4. At level 5 there is a core of 80 credit points with the remaining 40 credit points being selected from a series of options. At Level 6 there is a 60 credit point core with the remaining 60 credit points being selected from a series of options.
- At Levels 4 and 5, the year comprises 6 long thin Units rated at 20 credits each.
- At Level 6 there are 4 long thin 20 credit point units and a 40 credit point project unit.
- There are two points of progression, at the end of Level 4, at the end of Level 5.
- The number of credits required to achieve the degree and exit awards are as follows: 120 credits: Cert HE Geology; 240 credits: Dip. HE Geology; 300 credits: BSc Geology; 360 credits: BSc (Hons) Geology.
- The degree is offered in full time (3-year) mode or Sandwich mode (4-year). Study in part-time mode is possible and is encouraged, however students wishing to study part-time are made aware that timetabling constraints will call for flexibility on their part.

19. Employability Statement

Students graduating from this course are equipped to find employment across a wide spectrum of careers in the geosciences. The primary areas are the onshore and offshore exploration sectors of both the extractive and hydrocarbon industries and the geoscience data acquisition, processing and modelling sector. They will also be equipped for roles in other areas of science as well as for the opportunities open to graduates in general.

The course equips graduates with the necessary knowledge, skills and competencies that employers in the geosciences expect and is an accredited qualification for progression to Chartered Geologist or Chartered Scientist status through The Geological Society of London.

As the qualification is, in part, vocational in nature, graduate employability has always been embedded as a matter of course. The main aspects of the curriculum that address this important aspect of student learning are as follows:

- PDP is integrated into the tutorial programme at Levels 4, 5 & 6. Students are encouraged to consider work experience, career opportunities and working environments. Every student has regular sessions with their personal tutor through which the PDP is prepared and monitored.

¹ www.port.ac.uk/unitwebsearch

During Level 5, the personal tutor also oversees the student's progress through the careers skills material.

- As part of the SEES induction week programme an Employability Conference is held for all our Level 4 students. Recent graduates working in industry are invited to give lectures on their experiences after graduating.
- Throughout the academic year professionals from industry give either evening lectures or lectures as part of specific Units. This enables students to gain first hand exposure to professionals in their chosen field and to engage in one-to-one discussions regarding career opportunities. Many of these speakers are University of Portsmouth Alumni.
- CV writing, interview techniques (mock interviews), and letter writing skills are embedded into the Professional Skills for Geoscientists Unit at Level 5. This utilises material prepared centrally by Purple Door Careers and Recruitment and also focuses on geoscience-specific employability skills. These topics are again overseen by personal tutors at Level 6.
- Team work skills are developed throughout the curriculum through activities such as group fieldwork exercises and group problem based learning exercises. Leadership skills are encouraged through the role of team leader.
- Writing skills are developed by the production of reports and portfolios as part of the assessment strategy. These tasks develop key transferable skills in structured writing, accurate spelling, grammar, punctuation and referencing to Harvard APA standards.
- Independent research, oral communication skills and technical writing skills are developed during the 40 credit final year project (Level 6) in which students undertake independent field mapping and present the results as a combined map and report. This also develops study and self-management skills together with problem solving skills both in a practical sense (organising field work) and technical (solving a complex geological problem).
- Oral communication skills are developed throughout the curriculum with students required to present work orally for assessment. Preparation for this is provided via a structured tutorial programme.
- Numeracy and IT skills are embedded into the curriculum through the use of professional software applications such as ArcGIS, Move2010 and Terramod. Numerical analysis of problems is covered in many units for example, Structural Geology, Geological Remote Sensing and GIS, and Geodynamics, as well as the optional choices at level 6.
- The School has strong links with industry and students' professional and career development is informed by regular visits from employers and recent graduates to give talks and advice. The School hosts an annual careers day attended by employers across a wide spectrum of geo- and environmental science fields.
- Students have the option of completing a Sandwich year to undertake an industry placement or study overseas, after completion of level 5. Many academic members have research and consultancy links with local industry, government and consultancies (including overseas) and a number of graduates from the environmental programme find both project support and/or employment via these contacts each year. The University's careers and recruitment service, Purple Door, can also assist in finding placements and employment for students.

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Course Management

20. Support for Student Learning

- The Course is managed by a Course Leader
- Extensive induction programme introduces the student to the University and their course
- Each student has a personal tutor, responsible for pastoral support and guidance

- University support services include careers, financial advice, housing and counselling
- Pre-entry information is available from the University's pre-entry web site.
- Personal Development Planning is embedded into the Tutorial System at all Levels.
- Student Learning is supported by fully equipped laboratories including remote sensing, optical mineralogy laboratory, research laboratories equipped with Scanning Electron Microscopy, X-ray diffractometer, sequential x-ray fluorescence spectrometer, Nuclear Instrumentation, atomic absorption spectrophotometer, Inductively-coupled plasma mass spectrometer.
- A new Student Centre incorporates Student Services and the Student's Union.
- The University provides an Academic Skills Unit and Maths Café to assist students in their studies and in particular in developing their key skills.
- The Students handbook provides information about course structure, local regulations and Departmental details.
- Electronic versions of all of the unit descriptors are available to all students.
- Key Skills opportunities are incorporated into all units.
- Written feedback is provided for all assessments.
- Study skills are covered and developed within the structured 1st and 2nd year tutorial programmes.
- The programme has access to a wide range of specialist laboratories and facilities and their support staff.
- The University Library provides reference support to the programme with a wide range of written, electronic and audio-visual material, and has a dedicated subject librarian.
- The University of Portsmouth has consistently been awarded an excellent rating for student support and guidance in a number of Quality Assurance Agency inspections

21. Admissions Criteria

A. Academic Admissions Criteria

- Students are normally expected to have GCSE Maths, Science and English at grade C or above, or equivalent.
- Admission offers are usually made between 104-120 points, which may be derived from A2-levels, AS-levels, vocational A-levels, and other point rated qualifications. For A-level students, this must include achievement at A2 standard or equivalent in two subjects including at least one relevant science subject.
- Key skills qualifications will be considered, particularly those relating to numeracy and IT skills.
- IELTS Grade 6.0 or equivalent is required for international students where English is not their first language.
- Students will be admitted if they have completed a recognised, appropriate Access course.
- Professional skills and experience will be recognised and applications from mature students are encouraged.
- Other qualifications and experience will be considered on an individual basis.
- Current University policy on Recognition of Prior Learning is applied on an individual basis.
- Applications from international students are encouraged.

B. Disability

The University makes no distinction in its admissions policy with regard to disability and will endeavour to make all reasonable adjustments in order to make it possible for students to study at Portsmouth on a course of their choice.

22. Evaluation and Enhancement of Standards and Quality in Learning and Teaching

A. Mechanisms for Review and Evaluation

- Course Leader's Annual Standards and Quality Evaluative Review
- Head of Department's Annual Standards and Quality Evaluative Review
- Unit and Course Level student feedback considered at Board of Studies
- Unit Assessment Board consideration of student performance for each programme
- Annual Standards and Quality Reports to Board of Studies, including consideration of Subject and Award External Examiner Reports
- Periodic Programme Review
- Student Representatives and Student/Staff Consultative Committees
- National Student Survey
- Staff Performance and Development Review
- Peer Review and Development Framework
- Faculty Learning and Teaching Committee
- Geological Society of London Course Accreditation.

B. Responsibilities for Monitoring and Evaluation

- Unit Co-ordinators for unit content and delivery
- Course Leader for day-to-day running of course
- Board of Studies with overall responsibilities for operation and content of course
- Head of Department
- Associate Dean (Academic)
- Associate Dean (Students)
- Quality Assurance Committee
- Unit, Award and Progression Board of Examiners

C. Mechanisms for Gaining Student Feedback

- Student Representation on Board of Studies
- Student Staff Consultative Committees
- Unit and Course level student feedback questionnaires
- University participates in external student surveys, e.g. National Student Survey (NSS), and International Student Barometer (ISB)

D. Staff Development Priorities

- Academic staff undertake activities related to research, scholarship, teaching and learning and student support and guidance
- Annual staff performance and development reviews match development to needs
- Managers undertake a variety of management development programmes
- New academic staff required to undertake appropriate University of Portsmouth learning and teaching programmes
- All academic staff encouraged to seek Higher Education Academy membership
- Academic staff undertake initial and continuing professional development within the Academic Professional Excellence Framework (APEX) programme which is aligned with the Higher Education Academy (HEA)'s UK Professional Standards Framework (UKPSF)
- Support Staff are encouraged to attend short courses in areas such as minute taking, and specific IT packages

23. Assessment Regulations

The current University of Portsmouth academic regulations will apply to this programme (see [Assessment and Regulations²](#)).

24. Role of Externals

Subject External Examiners who will:

- Oversee unit assessment and usually attend Unit Assessment Boards
- Review unit assessment strategy
- Sample assessment artefacts
- Present report to Unit Assessment Boards

Award External Examiners (usually also a Subject External Examiner) who will:

- Oversee and attend Award/Progression Boards
- Scrutinise and endorse the outcomes of assessment
- Ensure that the standard of the award is maintained at a level comparable with that of similar awards elsewhere in the United Kingdom

25. Indicators of Standards and Quality

A. Professional Accreditation/Recognition

The course was re-accredited by the Geological Society of London in 2014.

B. Periodic Programme Review (or equivalent)

January 2016 University of Portsmouth Periodic Programme Review – course confirmed as fit for purpose.

C. Quality Assurance Agency

QAA Higher Education Review, March 2015, judgements about standards and quality meet UK expectations (*for full report see [Higher Education Review of the University of Portsmouth, March 2015³](#)*).

D. Others

In the 2014 REF, research based in Earth Systems & Environmental Sciences was rated as 72% internationally excellent or world-leading, and 100% of our research impact was classed as outstanding or very considerable in terms of reach and significance.

26. Further Information

Further information may be found in:

- Student Handbook
- University of Portsmouth Curriculum Framework Document
- University of Portsmouth Prospectus
- [University of Portsmouth⁴](#) and [School⁵](#) websites

² www.port.ac.uk/departments/services/academicregistry/qualitymanagementdivision/assessmentandregulations/

³ www.qaa.ac.uk/en/ReviewsAndReports/Documents/University%20of%20Portsmouth/University-of-Portsmouth-HER-15.pdf

⁴ www.port.ac.uk/

⁵ www.port.ac.uk/school-of-earth-and-environmental-sciences/