



# BSc (Hons) Palaeontology

## *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) Palaeontology

### **2. Course Code (and UCAS Code if applicable)**

C2344S

F641

### **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**

July 2018

### **8. Effective Session**

2018/19

### **9. Author**

Dr Anthony Butcher

### **10. Faculty**

Faculty

### **11. Department**

School of Earth and Environmental Sciences

## Curriculum

### **12. Educational Aims**

- The course aims to equip students to work as palaeontologists, 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 key 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 Geological 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 the next section 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

### 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]. A3. The nature of Earth materials: minerals and rocks [B].
- A.3 Life: its origin, evolution and diversity through time [B].
- A.4 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.5 The location of economic resources in the Earth's crust. Their exploitation and consequential environmental impact [B].
- A.6 Methods of palaeontological, geological and biological data acquisition and analysis [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 C6. Develop and 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

Core knowledge mainly via lectures, practical classes and tutorials (A1-A6). Student-centred activities focus on practical classes, tutorials and fieldwork (A3-A6 & especially 7A). All complete an

independent geological mapping exercise (A7) and conduct an independent, normally field-based final-year project (A3-A7).

Intellectual skills are developed through lectures, seminars, tutorials and practical classes (B3-B5) that encourage the integration and analysis of data (B3-B5). Student centred activities such as reviews, case studies and the project encourage research, analysis and synthesis (B1-B5). The final year project develops skills in formulating and testing hypotheses, and conducting a programme of research (B1-B2).

Practical classes, projects and portfolios (C1-C6), reviews, case studies, assignments (C3). The Level 5 unit Professional Skills for Palaeontologists, along with aspects of the tutorial programme, specifically address the recognition and acquisition of professional skills

Lectures, practical/IT classes, worked examples, subject specific and generic tutorials, group oral presentations, and assignments (including reviews, case studies & project) (D1-D8).

## 17. Assessment Strategy

Unseen examinations, in-class tests and MCQ (A1-A6), practical reports (A1-A7), written assignments, reviews, case studies (A2-A6), portfolios (A2-A6), and project (A3-A7).

Unseen examinations, including data interpretation (B3-B5), practical reports, oral presentations (B3-B5), written assignments, reviews, case studies, portfolios, (B3-B5), and project reports (B1-B5).

Laboratory reports, reviews, case studies, project reports, field-notebooks, maps and assignments (C1-C6).

Mainly through coursework exercises, practical reports - individual and group (which include word processing, spreadsheets, & graphics), assignments, oral presentations, learning contracts, personal and academic portfolios (D1-D8).

## 18. Course Structure, Progression and Award Requirements

See [Unit Web Search](#)<sup>1</sup> 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 and 5. At Level 6 there is a 40 credit core unit with the remaining 80 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 and field work 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 Palaeontology; 240 credits: Dip. HE Palaeontology; 300 credits: BSc Palaeontology; 360 credits: BSc (Hons) Palaeontology.

## 19. Employability Statement

Students graduating from this course are excellently placed to pursue an academic career in the specialised field of palaeontology but, more significantly, 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 the hydrocarbon industry and the museum and education sectors. They will also be equipped for roles in other areas of science as well as for the opportunities open to graduates in general.

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<sup>1</sup> [www.port.ac.uk/unitwebsearch](http://www.port.ac.uk/unitwebsearch)

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 academic focus of the course is on a specialised field within geoscience it is recognised that development of graduate employability skills is particularly important. The main components 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 and 6. Students are encouraged to consider work experience, career opportunities and working environments. Every student has regular sessions with his or her personal tutor through which the PDP is prepared and monitored. 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 and interview techniques are embedded into the Professional Skills for Palaeontologists Unit at Level 5. This utilises material prepared centrally by Purple Door Careers and Recruitment and also focuses on geoscience-specific employability skills.
- 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.
- 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, museum and laboratory work and present the results in a fully illustrated report. This also develops study and self management skills together with problem solving skills both in a practical sense (organising field work and museum visits) and technical (solving a complex palaeontological problem).
- Oral communication skills are developed throughout the curriculum with students required to present work orally for assessment.
- Numeracy and IT skills are embedded into the curriculum through the use of professional software applications such as Stratabugs. Numerical analysis of problems is covered in units such as Quantitative Methods, Science For Earth Systems, Paleontological Techniques, and Palaeontology.

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.

## **Course Management**

### **20. Support for Student Learning**

- The Course is part of the Geoscience Programme Area and is managed by the Course Leader.
- An extensive induction programme introduces the student to the University and their course.



- Each student has a personal tutor, responsible for pastoral support and guidance, together with a structured tutorial programme. This is weekly at Level 4, fortnightly at Level 5 and project related at Level 6. Academic Skills development is incorporated into the tutorial programme.
- University support services include - careers, financial advice, housing, counselling, etc.
- A dedicated Student Services Centre.
- Excellent library facilities.
- The University of Portsmouth has consistently been awarded an excellent rating for student support and guidance in a number of Quality Assurance Agency inspections.
- Student course and unit handbooks provide information about the course structure and University regulations, etc.
- Key Skills opportunities are incorporated into all units.
- Written feedback is provided for all assessments.
- Personal Development Planning (PDP) for all awards.
- Student Learning is supported by fully equipped laboratories for analysing fossil material, advanced preparation of palaeontological samples, 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.
- An extensive fieldwork programme is integrated with the School based curriculum, providing training in, and utilisation of, essential professional skills.

## 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 RPL and RPEL 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).
- Informal feedback during residential field courses.

## **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 Regulations<sup>2</sup>](#)).

## 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 2015<sup>3</sup>](#)*).

### D. Others

In the 2014 REF, research based in Earth Systems and 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 Portsmouth<sup>4</sup>](#) and [School<sup>5</sup>](#) websites

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<sup>2</sup> [www.port.ac.uk/departments/services/academicregistry/qualitymanagementdivision/assessmentandregulations/](http://www.port.ac.uk/departments/services/academicregistry/qualitymanagementdivision/assessmentandregulations/)

<sup>3</sup> [www.qaa.ac.uk/en/ReviewsAndReports/Documents/University%20of%20Portsmouth/University-of-Portsmouth-HER-15.pdf](http://www.qaa.ac.uk/en/ReviewsAndReports/Documents/University%20of%20Portsmouth/University-of-Portsmouth-HER-15.pdf)

<sup>4</sup> [www.port.ac.uk/](http://www.port.ac.uk/)

<sup>5</sup> [www.port.ac.uk/school-of-earth-and-environmental-sciences/](http://www.port.ac.uk/school-of-earth-and-environmental-sciences/)