COURSE SPECIFICATION

Earth Sciences

BSc (Hons) Geology

BEng (Hons) Engineering Geology

BSc (Hons) Environmental Geology

COURSE SPECIFICATION

Please refer to the Course Specification Guidance Notes for guidance on completing this document.

Course Title	***Earth Science***
Final Award	*BSc (Hons) Geology, BEng (Hons) Engineering Geology, or BSc (Hons) Environmental Geology*
Exit Awards	*CertHE, DipHE Earth Science*
Course Code / UCAS code (if applicable)	U3428PYC
Mode of study	*Full time*
Mode of delivery	*Campus*
Normal length of course	*3 years, 4 years with placement*
Cohort(s) to which this course specification applies	*From September 2023 intake onwards*
Awarding Body	*University of Portsmouth*
Teaching Institution	*University of Portsmouth*
Faculty	*Faculty of Science & Health*
School/Department/Subject Group	*School of the Environment and Life Sciences*
School/Department/Subject Group webpage	*www.port.ac.uk/ELS*
Course webpage including entry criteria	https://www.port.ac.uk/study/courses/bsc-hons-geology
Professional and/or Statutory Regulatory Body accreditations	*The Geological Society, London*
Quality Assurance Agency Framework for Higher Education Qualifications (FHEQ) Level	*4,5,6*

This course specification provides a summary of the main features of the course, identifies the aims and learning outcomes of the course, the teaching, learning and assessment methods used by teaching staff, and the reference points used to inform the curriculum.
This information is therefore useful to potential students to help them choose the right course of study, to current students on the course and to staff teaching and administering the course.

Further detailed information on the individual modules within the course may be found in the relevant module descriptors and the Course Handbook provided to students on enrolment.

Please refer to the Course and Module Catalogue for further information on the course structure and modules.

Educational aims of the course

Aims to equip students to tackle important societal challenges through understanding the earth, the environment, hydrosphere and atmosphere and the role of Earth Scientists in engineering the ground and subsurface. Our course aims to be directly employable and equip students with the skills they need to work in a range of Geological Engineering, Earth and Environmental careers. The course will also prepare students for a wide range of further education opportunities including in research (MRes and PhD) and for graduate employment outside of the Earth Science subject area.

- Understand the role and skills that Earth Scientists have to play in designing, engineering, planning and managing a more sustainable future for our planet.
- To train scientists to have a sound knowledge and understanding of Earth and Environmental Processes, examining the complex natural processes that have shaped our planet's evolution through deep geological time – including tectonics, climate change and natural hazards.
- To train students with a specialist knowledge of specific aspects of applied and environmental geosciences, such as fieldwork and laboratory observations, classification of rocks and soils., an understanding of soil mechanics, site and ground investigation techniques, computer applications in geology including risk analysis and assessment, GIS and remote sensing, environmental assessment and contaminated land, subsurface excavation design, landslides and slope stabilisation and rock engineering, hydrogeology and geological hazard assessment.
- To develop an awareness of the particular strategies needed to work in Earth Science fields including engineering geology and geotechnics, resource management and environmental sectors.
- To offer students the opportunity to undertake an optional work placement year with an appropriate employer to develop confidence and work-place skills together with an appreciation of the application of theory to practice.

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 in the final year.
- Develop a range of transferable skills by means of opportunities provided in the study units and a structured tutorial programme for lifelong learning, employability and flexibility in the context of changing labour markets.
- Accommodate student needs in relation to maximising their career potential by enabling them to develop knowledge, understanding and skills in their chosen subject area.

Course Learning Outcomes and Learning, Teaching and Assessment Strategies

The Quality Assurance Agency for Higher Education (QAA) sets out a national framework of qualification levels, and the associated standards of achievement are found in their Framework for Higher Education Qualifications document.

The Course Learning Outcomes for this course are outlined in the tables below.

A. Knowledge and understanding of:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
A1	**The whole Earth and Environmental system**, including understanding the evolution, structure and composition of the Earth	Lectures, practicals and fieldwork. Students gain a systematic understanding of key aspects of the Earth and environment through deep time by acquiring coherent and detailed knowledge, informed by research at the forefront of the discipline. This course develops subject knowledge, critical thinking skills, analytical, observational and interpretational skills, and verbal, written and graphical communication skills. Students also learn independence, resilience and decision-making skills in complex and unpredictable contexts.	Exam; coursework; lab books, field notebooks, maps and log sheets. Formative assessment can be via weekly feedback in practical classes and test questions on the intranet.
A2	**Earth Materials and Processes** including fundamental Earth (igneous, metamorphic, sedimentary and structural) processes and the mechanical behaviour of natural and man-made materials.	Lectures, practicals and fieldwork. Students learn systematic understanding of key aspects of geology, including acquisition of coherent and detailed knowledge informed by research in the discipline.	Exam; coursework. Formative assessment can be via weekly feedback in practical classes and test questions on the intranet.
A3	**Deep Time Perspectives** including how life and climate have evolved through deep time	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. Develops subject knowledge, critical thinking; plus analytical, observational and interpretational skills; communication skills using text and graphics. The exercise of initiative and personal responsibility. Decision-making in complex and unpredictable contexts.	Exam; coursework; lab books; field notebooks, maps and log sheets. Formative assessment can be via weekly feedback in practical classes and test questions on the intranet, in-field exercises.
A4	**Human interactions with the Earth System**-understanding the	Lectures, practicals and fieldwork. A systematic understanding of key aspects of	Assessed coursework that takes the form of technical reports, coursework

	fundamentals of how Earth scientists and engineering geologists interact with the built environment and the need for a multi-disciplinary and interdisciplinary approach in both acquiring and advancing knowledge and understanding of Engineering Geology and Geotechnics. Demonstrate the application of Geology, Engineering Geology and Geotechnics and Environmental knowledge and skills to a task or problem completed in a workplace context.	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. Develops subject knowledge, critical thinking; plus analytical, observational and interpretational skills; communication skills using text and graphics. The exercise of initiative and personal responsibility. Decision-making in complex and unpredictable contexts. Knowledge and understanding is advanced and consolidated during work for the final-year project.	reports, fieldwork reports, laboratory reports and oral presentations appropriate to particular units. Reflective portfolio & work placement diary assess the Industrial Placement.
A5	**Sustainability and protecting the Earth System-** the role of modern Earth Scientists and their place for addressing the UN sustainability goals and for helping society to understand and face important issues such as tackling climate change, engineering more sustainable future cities, developing renewable energies, finding and sustainably managing Earth resources and mitigating the environmental impacts.	Lectures, practicals and fieldwork. 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. Develops subject knowledge, critical thinking; plus analytical, observational and interpretational skills; communication skills using text and graphics. The exercise of initiative and personal responsibility. Decision-making in complex and unpredictable contexts. Knowledge and understanding is advanced and consolidated during work for the final-year project.	Assessed coursework that takes the form of technical reports, coursework reports, fieldwork reports, laboratory reports and oral presentations appropriate to particular units. Reflective portfolio & work placement diary assess the Industrial Placement.

B. Cognitive (Intellectual or Thinking) skills, able to:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
B1	Formulate and test a hypothesis	Practicals, workshops and fieldwork develop skills in critical thinking and analysis, data synthesis, manipulation and presentation. Students learn how to devise and sustain arguments, and solve problems using ideas and techniques, some of which are at the forefront of a discipline. Students learn to describe and comment upon particular aspects of current research, or equivalent advanced scholarship, in the discipline. This course gives students an appreciation of the uncertainty, ambiguity and limits of knowledge.	Lab books; written reports; coursework. Formative assessment is via weekly feedback in practical classes and field notebooks.
B2	Plan, conduct, evaluate and report a programme of research	Practicals and fieldwork develop critical thinking and analysis; communication skills, researching and referencing skills. Data manipulation and presentation; project management. An ability to deploy accurately established techniques of analysis and enquiry within a discipline.	Coursework, presentations, lab books. Formative assessment is via weekly feedback in practical classes and field notebooks.
B3	Analyse, evaluate, interpret and integrate data from a variety of sources Research and synthesise information from a variety of sources and recognise legal, moral, ethical and other social issues.	Practicals and workshops allow 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). The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making. Seminar and group discussions, Structured tutorials at Levels 4 and 5. The year	Coursework, lab books, presentations. Exams, coursework, lab books, presentations. Formative assessment is via weekly feedback in practical classes and field notebooks.

		long Industrial Placement. Student-centred activities such as reviews, case studies and independent research for the final year project.	
B4	Select and apply appropriate scientific, laboratory, mathematical and computer-based methods and principles in the analysis and solution of problems in Engineering Geology, Geotechnical Engineering, and Environmental Geology. Work with confidence from basic principles and apply essential applied Geoscience techniques to unfamiliar situations.	Problem based and experiential learning strategies. The year long Industrial Placement. Student-centred activities such as reviews, case studies and independent research for the final year project.	Formal examinations require time-limited intellectual responses. Final year projects that require longer periods of intellectual reflection. Presentations where intellectual ideas have to be translated into visually attractive images and explanations. Reflective portfolio and work placement diary assess the Industrial Placement.
B5	Estimate and scope the scale of Engineering Geology, Geotechnical Engineering, and Environmental Geology problems and the solutions to the problems identified. Be able to conceptualise the interplay between investigation, testing and modelling in an Engineering Geology or Geotechnical Engineering context.	Seminar and group discussions and team activities as part of the IDE. The year long Industrial Placement. Student-centred activities such as reviews, case studies and independent research for the final year project.	Final year projects that require longer periods of intellectual reflection. Presentations where intellectual ideas have to be translated into visually attractive images and explanations. Reflective portfolio and work placement diary assess the Industrial Placement.

C. Practical (Professional or Subject) skills, able to:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
C1	Use laboratory equipment and conduct analytical procedures (appropriate to the discipline) in a safe, accurate and precise manner, using specialist software to interpret and convey data.	Practicals allow students to apply what they have learnt in theory and allow them to review, consolidate, extend and apply their knowledge and understanding, and to initiate and carry out projects.	Direct observation by staff; lab books; portfolios. Formative assessment can be via feedback in practical classes.
C2	Carry out good field practice and data acquisition according to local, national and international regulations.	Fieldwork allows students to apply their knowledge in the field, to learn practical applied skills as well as team building, resilience and independence. Gives students the opportunity to review, consolidate, extend and apply their knowledge and understanding, and to initiate and carry out projects.	In-field exercises; maps; log sheets; reports; final year project. Formative assessment can be feedback on field notebooks, field maps and log sheets where appropriate.
C3	Plan and prepare referenced scientific and technical reports, including the use of secondary data, and plan, conduct and report on ground investigations.	Coursework assignments; can also be to some extent in practical portfolios (lab books). Scientific reports allow students to critically evaluate and form arguments, test assumptions, abstract concepts and data (that may be incomplete), it provides the opportunity for students 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.	Lab books, reports, and final year projects.
C4	Employ appropriate specialist geoscience software applications	As follow-up work to fieldwork, subject-specific software such as Geographical Information Systems (GIS) equips students with employable skills. It allows students to 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	Portfolios, reports, coursework. Formative assessment can be via weekly feedback in practical classes.

		and non-specialist audiences. Data manipulation, interpretation and presentation.	
C5	Identify and work towards targets for personal, academic and career development. Develop an adaptable approach to study / work and develop the skills necessary for self-managed and lifelong learning.	The tutorial modules cover these academic and transferable skills in a pastoral setting, while the Professional Skills module introduces students to the key skills in identifying and applying for jobs and placements, and the careers support available within the university. External guest lectures from industry and academia speakers are embedded into various modules. The placement option also provides real-world experience in a related sector.	Careers portfolio; academic skills training and formative feedback in tutorials; placement portfolio/reflective summary;

D. Transferrable (Graduate and Employability) skills, able to:			
LO number	**Learning outcome**	**Learning and Teaching methods**	**Assessment methods**
D1	Communicate appropriately to a variety of audiences in written, verbal and graphical forms, using information from a variety of sources.	Tutorial programme, various modules, lab work. Allows students to gain critical evaluation skills, argument-forming, to test assumptions, and explore 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. Data manipulation, interpretation and presentation.	Literature reviews, portfolio, reports, oral presentations, poster presentations, field notebooks, fieldwork reports, laboratory reports, exams and Dissertation thesis.
D2	Appreciate issues of sample selection, accuracy, precision and uncertainty during collection, recording and analysis of data in the field and laboratory. Solve numerical problems using both computer and non-computer based techniques.	Various modules, lectures, workshops. Data manipulation, interpretation and presentation and assessment of uncertainties.	Reports, oral presentations, poster presentations, notebooks, fieldwork reports, laboratory reports and Dissertation thesis.
D3	Be competent in the use of Information Technology (word processing, databases, spreadsheets, statistical packages, electronic mail and Internet), and use the internet critically and professionally as a means of communication and a source of information.	Lectures and workshops. Allows student to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences. Data manipulation, interpretation and presentation.	Literature reviews, portfolio, reports, oral presentations, poster presentations, notebooks, fieldwork reports, laboratory reports and exams.
D4	Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles. Recognise and respect the views of others and evaluate performances as an individual and a team member.	Addressed in a number of modules, through group-based assessments, in particular on fieldwork. The optional Industrial Placement also places students within a real-world setting, working as part of a team and understanding their role within it.	In-field exercises; presentations; industrial placement.

Academic Regulations

The current University of Portsmouth Academic Regulations: Examination & Assessment Regulations will apply to this course.

Support for Student Learning

The University of Portsmouth provides a comprehensive range of support services for students throughout their course, details of which are available at the MyPort student portal.

In addition to these University support services, this course also provides support prior to, during and following work-based learning and/or placements (including study abroad). Support includes personal tutors, supervisors and mentors as appropriate. Students will have access to all their usual learning resources while off-campus including course details and handbooks, as well as a range of placement-specific resources and/or handbooks.

Evaluation and Enhancement of Standards and Quality in Learning and Teaching

The University of Portsmouth undertakes comprehensive monitoring, review and evaluation of courses within clearly assigned staff responsibilities. Student feedback is a key feature in these evaluations, as represented in our Policy for Listening to and Responding to the Student Voice where you can also find further information.

Reference Points

The course and outcomes have been developed taking account of:

- University of Portsmouth Curriculum Framework Specification
- University of Portsmouth VISION 2030 AND STRATEGY 2025
- University of Portsmouth Code of Practice for Work-based and Placement Learning
- Quality Assurance Agency UK Quality Code for Higher Education
- Quality Assurance Agency Subject Benchmark Statement for **Earth Sciences, Environmental Sciences and Environmental Studies, March 2022.**
- Requirements of Professional and/or Statutory Regulatory Bodies: **The Geological Society of London**
- Vocational and professional experience, scholarship and research expertise of the University of Portsmouth's academic members of staff
- National Occupational Standards

Changes to your course/modules

The University of Portsmouth has checked the information provided in this Course Specification and will endeavour to deliver this course in keeping with this Course Specification. However, changes to the course may sometimes be required arising from annual monitoring, student feedback, and the review and update of modules and courses.

Where this activity leads to significant changes to modules and courses there will be prior consultation with students and others, wherever possible, and the University of Portsmouth will take all reasonable steps to minimise disruption to students.

It is also possible that the University of Portsmouth may not be able to offer a module or course for reasons outside of its control, for example, due to the absence of a member of staff or low student registration numbers. Where this is the case, the University of Portsmouth will endeavour to inform applicants and students as soon as possible, and where appropriate, will facilitate the transfer of affected students to another suitable course.

Document Details	
CSD Template date	*October 2024*
Author	*Dr Catherine Mottram*
Date of production and version number	*[15.07.2022] [Version number 1]*
Date of update and version number	28.06.2023 [Version number 2]
Minimum student registration numbers	*20*