



Subject Benchmark Statement: Earth Sciences, Environmental Sciences and Environmental Studies

The Basics

This document is a summary of the Subject Benchmark Statement for Earth Sciences, Environmental Sciences and Environmental Studies (collectively referred to as ES3). It is specifically designed to provide a short and accessible overview of the main Statement for students, employers and academics. It is not intended to replace or alter the Subject Benchmark Statement, which should be referred to in the design and approval of courses and when any further detail is required.

Subject Benchmark Statements describe the nature of study and the benchmark academic standards expected of graduates in specific subject areas, and in respect of particular qualifications. They provide a picture of what graduates in a particular subject might reasonably be expected to know, do and understand at the end of their course or programme.

Subject Benchmark Statements are presented in four sections. Section 1 outlines the contextual information - providing the operational landscape, and boundaries, of subject discipline. This includes consideration of the ways in which the discipline addresses wider social goals, specifically in relation to: equality, diversity and inclusion (EDI); the requirements of disabled students; education for sustainable development (ESD); and enterprise and entrepreneurship.

Section 2 covers distinctive features of the course, including curriculum design, partnership arrangements, flexibility of delivery, progression and ongoing monitoring processes. Section 3 explains any features relevant to teaching, learning and assessment activities for the subject. Section 4 describes the benchmark standards of achievement reached by all graduates with a bachelor's degree with honours in the subject, with some subjects also including achievement at master's level.



Why study a degree in ES3?

The ES3 subjects are rooted in sustainability. They are both multidisciplinary and interdisciplinary by nature, overlapping with science and humanity-based disciplines, including biology, chemistry, geography, informatics and physics. Outcomes include knowledge and skills that provide graduates with a wide range of competencies, preparation for future employment and awareness of key challenges in sustaining a habitable planet.

The wider context for the Subject Benchmark Statement is the ongoing climate emergency and biodiversity crisis, as well as other threats to the natural environment. These require action at every level, from global and national political commitment to practical measures at a local level. Graduates in ES3 subjects will be required to ensure actions and decisions are based on sound science, and that they take into account equity, equality, diversity and inclusivity to deliver long-term, sustainable solutions.



What are the main teaching and learning approaches in ES3?

The ES3 subjects are characterised by the integration of practical work, especially field-based activities, with theoretical studies. Courses therefore offer all students opportunities for significant field-based learning and teaching to foster skills such as the ability to visualise and extrapolate data in three dimensions or understand the application of practical methodologies. Much advancement in knowledge and understanding in these subject areas is founded on accurate observation and recording in the field and the collection of empirical data for analysis.



How are students assessed?

The assessment of ES3 courses includes a mix of methods that are accessible to all students. Where individual students may be disadvantaged by particular assessment methods, adjustments to those assessments are considered while ensuring fairness across the full cohort. The procedures used for assessment cover the subject knowledge, abilities and skills developed through the degree course.

Feedback is an important part of the assessment cycle and can be provided in a variety of formats. Formative feedback can benefit student performance and, when used appropriately, boost student confidence and outcomes. The opportunity for personal reflection, and peer and self-assessment is also a valuable component of assessment. Examples of authentic assessment types include, but are not limited to, practical investigations; research-led and enquiry based reflective evaluation of real-life case studies; case reports based on skills in observation and analysis to support decision-making in the light of uncertainty; and oral accounts or presentations of processes and issues, including an appreciation of societal contribution and context. Where appropriate, assessments take multidisciplinary and interdisciplinary approaches and are clearly underpinned by education for sustainable development to achieve positive graduate outcomes.



Benchmark Standards

The minimum threshold standards that a student will have demonstrated when they are awarded an honours degree in ES3 are outlined on **pages 16-17** of the Subject Benchmark Statement. The vast majority of students will perform significantly better than the minimum threshold standards. Each higher education provider has its own method of determining what appropriate evidence of this achievement will be and should refer to [Annex D: Outcome classification descriptions for FHEQ Level 6 and FQHEIS Level 10 degrees](#). This Annex sets out common descriptions of the four main degree outcome classifications for bachelor's degrees with honours: 1st, 2:1, 2:2 and 3rd. Study at master's level requires higher level skills, with students expected to achieve according to the descriptor for a higher education qualification at Level 7 on the FHEQ and SCQF Level 11 on the FQHEIS.

The Statement was developed by a group of subject experts drawn from across the sector. Details of the Advisory Group can be found on **page 19** of the Statement.

Read the full Subject Benchmark Statement

The [full Subject Benchmark Statement](#) is available on the QAA website.



Subject Benchmark Statements are published in QAA's capacity as a membership organisation on behalf of the higher education sector.

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