

# Earth Science, Environmental Science and Environmental Studies QAA benchmark statement

## ● Consultation response submitted by the Royal Geographical Society (with IBG)

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To whom it may concern

Please find a short response to the Earth Sciences, Environmental Sciences and Environmental Studies benchmark statement draft for consultation.

This response is on behalf of the Royal Geographical Society (with The Institute of British Geographers), the UK's learned society and professional body for geography. In formulating our response, we consulted heads of geography departments and members of the group drafting the QAA benchmark statement for geography. This response comes with the support of the chair of that group, Professor David Thomas, also Vice President for Research and Higher Education of the Royal Geographical Society (with IBG).

We note the overlap with subject knowledge expected in physical geography for some of the topics listed under subject knowledge for EEE degree programmes. This particularly, but not exclusively, applies to environmental science (see listing below).

**We request the EEE statement explicitly acknowledges this significant overlap and suggest that the revised geography statement does the same; that is, both statements mutually recognise the overlap, while at the same time having sufficient difference in other areas of their programmes to make them identifiably distinct.**

**We also note overlap in the JACS codes listed for programmes for which the E3 benchmark statement applies and those under which geography degree programmes are offered. This is confusing and we request this be taken up with HESA to resolve this and ensure greater clarity in codes and content.**

The areas of overlap we identify; these are characteristics also of geography (largely but not exclusively physical geography)

Section 1.3 of the E3 document

- a focus on understanding Earth systems in order to learn from the past, understand the present and influence the future
- an emphasis on practical (especially field-based) investigation
- multidisciplinary and interdisciplinary approaches
- working across a range of spatial and temporal scales
- the development of skills in observation and analysis to support decision making in the light of uncertainty
- an appreciation of societal contribution and context

- the development of professional skills for employability

#### Section 2.1

- tuition based on holistic, multidisciplinary and interdisciplinary approaches
- the integration of fieldwork, experimental and theoretical investigations underpinning the learning experience
- quantitative and qualitative approaches to acquiring and interpreting data
- examination of the implications of sustainability and sustainable development

#### Section 2.4

- The cycling of matter and the flows of energy into the Earth's surface, the hydrosphere, the atmosphere and the biosphere.
- The study of the structure, the composition and the materials of the hydrosphere, the atmosphere, the cryosphere and the biosphere, and the processes operating within and between them.
- Surveying and measurement both in the field and laboratory, and using quantitative and instrumental techniques.
- The use of past climates to understand climate change
- Geohazards (for example, flooding, earthquakes, volcanic eruptions and landslides) and their impact on society and the environment

#### Section 2.5

- Geomorphology
- Geographic information systems and remote sensing applications
- Natural hazards

#### Section 2.6

- Past climates to understand climate change and the impact on the environment and society
- Geohazards (for example, flooding, earthquakes, volcanic eruptions and landslides).

#### Section 2.7

- A systems approach to study of the complexity and interconnections of the Earth's systems and processes.
- The scientific study of physical, chemical, biological and anthropogenic processes operating on ecosystems.
- Major environmental processes on scales from global to organismal.
- The importance of timescale, from geological to the short term, on the impacts of natural and human-induced activities on the ecosystem.
- The spatial scale, from global to local, of human impacts on the environment and responses to environmental change.
- The nature, organisation, complexity, sustainability and interconnections of humans and the ecosystems.
- A scientific and interdisciplinary approach to identify, understand and manage the Earth's processes and the ecosystem.
- The principles of energy consumption, resource extraction and waste disposal arising from the fulfilment of human needs.
- Monitor, model and manage natural and human-induced environmental changes and behaviour.
- The principles of sustainability and the use of sustainable approach to manage the natural cycles.
- The role of institutions, organisations and other stakeholders in managing and regulating the human impact on the environment.
- Risks presented by a changing environment.



- The use of scientific and technological information and tools to inform decision-making processes and environmental management.
- A holistic approach to resolve a broad spectrum of environmental issues and enhance environmental performance.

Section 2.8

- Air, land and water pollution
- Biodiversity
- Biogeochemical cycles
- Climate change
- Conservation
- Demand for, and consequences of, energy production and use
- Demand for, and consequences of, water resource utilisation
- Ecosystems
- Ecological processes
- Energy sources
- Environmental management
- Environmental modelling
- Environmental monitoring
- Food and water supply, demand and scarcity
- Geographic information systems
- Global conventions and treaties
- Green industry
- Human adaptation to climate change
- Population growth and dynamics
- Principle hazards
- Resource management
- Risk assessment and management
- Role of institutions in regulation and management of the environment
- Social equity and social justice
- Stakeholders in environmental decision making
- Sustainability and sustainable development

Section 2.9

- A systems approach to study of the complexity and interconnections of the Earth's systems and processes.
- The cycling of matter and the flows of energy into and within the Earth's systems and their role in supporting life.
- The nature, organisation, complexity, sustainability and interconnections of human systems.
- The history and current evidence of natural and human-induced environmental change.
- The consequences for the environment of energy consumption, resource extraction and waste disposal arising from the fulfilment of human needs.
- The sociological, political and economic implications of human interactions with the environment.
- The relationship between the environment and human cultures and values.
- The use of scientific and technological information to inform decision-making processes and environmental management.
- The options for remediation of environmental impacts available to human society.
- The role of institutions, organisations and other stakeholders in managing and regulating human interaction with the environment.
- The concepts and applications of sustainability and sustainable development.
- The importance of timescale, from geological to the short term, in considering the environmental impact of human activity.

- The spatial scale, from global to local, of human impacts on the environment and responses to environmental change.
- Interdisciplinary/multidisciplinary context: the contribution of the natural sciences, social sciences, technology, philosophy and ethics to the identification, understanding and, where appropriate, resolution of environmental issues and concerns.

#### Section 2.10

- biodiversity
- biogeochemical cycles
- ecology
- conservation
- food supply, demand and scarcity
- population growth
- environmental limits to economic or population growth
- demand for, and consequences of, water resource utilisation
- energy sources
- demand for, and consequences of, energy production and use
- resource management
- air, land and water pollution
- climate change
- human adaptation to climate change
- global conventions and treaties
- environmental policy formulation
- stakeholders in environmental decision making
- sustainability and sustainable development
- environmental management
- approaches to, and limitations of, environmental management systems
- role of institutions in regulation and management of the environment
- conflict and cooperation in environmental decision making
- environmental hazards
- valuation of the environment
- environmental economics
- environmental ethics
- environmental legislation and regulations
- business and the environment
- social equity and social justice.

If you have any questions or wish further clarification, please do not hesitate to contact me.

Yours sincerely



Dr Catherine Souch  
Head of Research and Higher Education  
Royal Geographical Society (with the Institute of British Geographers)