What is Earth Science?

- Earth Science encompasses Geology, Environmental Geoscience, Geochemistry, Paleontology, and Geophysics.
- Application of maths, physics, chemistry, geography, biology, statistics, IT and technology to understand the Earth in time and space.
- Major field of study at university and a major global employer.

The *Genesis, Form and Functioning* of the Natural World

oceans, continents, plate tectonics, mountains, volcanoes, earthquakes, the deep earth, planet formation, evolution of life, minerals, rocks, fossils

Our Relationship with the Natural World

climate change, pollution, environmental management, hazard and risk management, sustainability, energy and resources

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How Do We Tackle These Important Questions?

- **Fieldwork** – gathering data in the field
- Analyse **remotely sensed** data – satellite data, seismic data, drone data
- **Geochemical** and **isotopic** analysis of rocks, minerals, sediments, liquids and gases
- Use **analogue experiments** to apply **physics** to understand volcanoes and earthquakes and rocks
- Develop **computational** and **numerical** models
- Use **artificial intelligence** and **machine learning** to process and analyse **big data** sets
- Develop novel **technology** to gather new data
- Use **statistics** to reveal patterns in geospatial data
- Use **X-ray tomography, scanning electron microscopy and synchrotron technology** to image at sub-micron level

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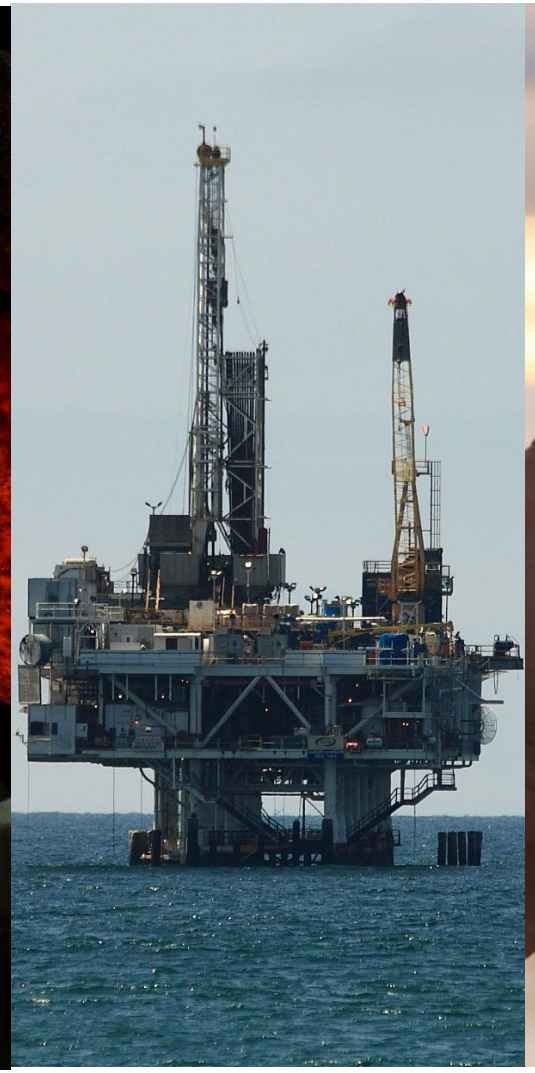
Earth scientists develop the scientific knowledge to locate raw materials for modern technology





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Earth scientists protect humans from the planet…

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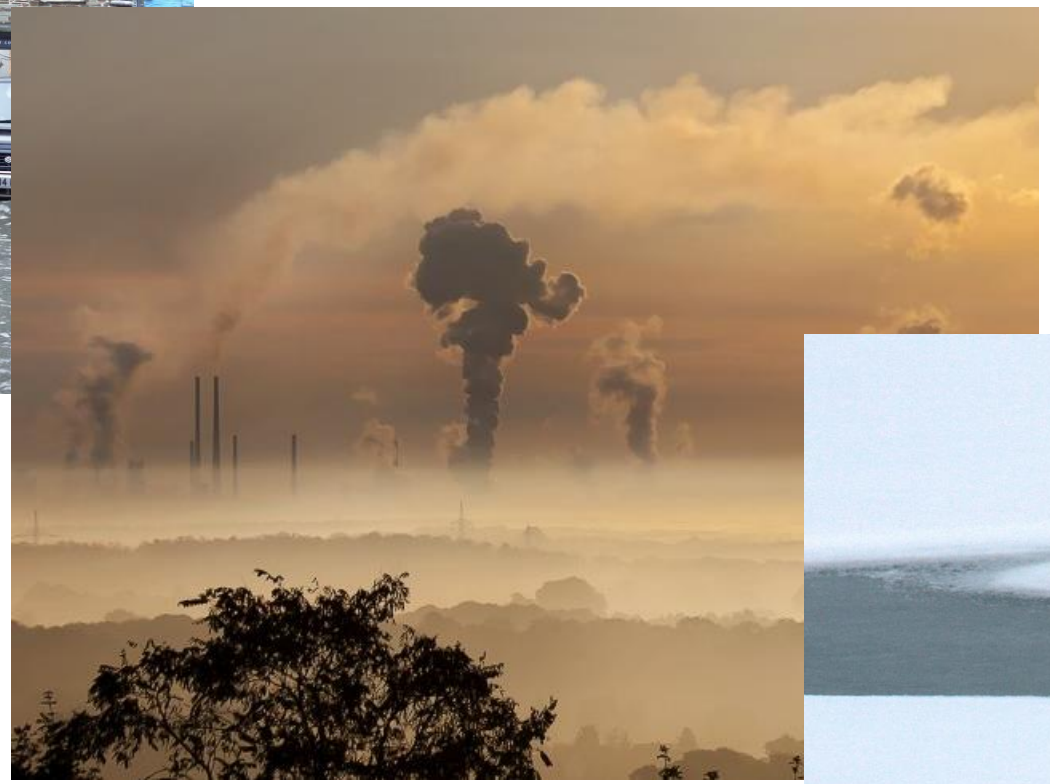
…and the planet from humans



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There has never been a **more important** time to study **Earth Sciences**

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The Clean Growth Strategy

Leading the way to a low carbon future

HM Government

A Green Future: Our 25 Year Plan to Improve the Environment

Earth Scientists: Key Players in a Sustainable No-Carbon Future

Environmental Geoscientists – sustainable use of resources; stewardship of the environment; water management.
Engineering Geologists – siting and construction of wind, wave, and solar power plants.
Exploration Geologists – rare earth elements in solar panels, technology, and batteries.
Natural Hazard Mitigation and Defence – protect against climate change.
Teachers and Communicators – schools, universities, public, and governments.
Data Geoscientists – application of AI, machine learning, and big data to Earth Science problems.
Academic and Industrial Researchers – energy solutions; use data from the geological past to inform on the future.

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www.GfGD.org Geology for Global Development

Degree Courses

We require a minimum of **two science A-levels** from the list below:

Geology, Chemistry, Physics, Mathematics, Further Mathematics, Geography, Economics, and Biology or Psychology (not both)

(A-level Maths or equivalent required for Geophysics with Geology).

Entry Quota: 80	Degree	Length	Typical offer
Earth Sciences (F644)	MSci (Hons)	4 yrs	AAA
†Geology* (F600)	BSc (Hons)	3 yrs	AAB
Climate Science* (F645)	BSc (Hons)	3 yrs	AAB
†Environmental Geoscience* (F630)	BSc (Hons)	3 yrs	AAB
†Geophysics with Geology* (F662)	BSc (Hons)	3 yrs	AAB
Geoscience* (F643)	BSc (Hons)	3 yrs	AAB
Natural Sciences*	BSc (Hons)	3 yrs	A*AA

durham.ac.uk/earth.sciences/ugadmissions/ourcourses

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*Option to progress to MSci (Hons) depending on grades

†Accredited by the Geological Society of London

The Geological Society

Degree Logistics

Flexible modular system
choose from a list of subjects (depending on degree) to follow your own evolving interests.

Teaching builds year-on-year
to develop technical expertise and ability to think and learn critically and independently.

Assessment
coursework, practical work, tests, and exams, fieldwork + involves both individual work + teamwork.

Contact time

- Average >22–25 hours/week contact time.
- Teaching typically 3-hour slots of mixed lectures and practical work.
- Dedicated residential fieldtrips.
- Six tutorials per year (1st and 2nd year).
- Academic advisor meetings 3 times per year.
- Dissertation supervised by member of staff in year 3/year 4.
- Open door policy.

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