

Geology

A two year A/S course

Staff

Mr K R Gray BSc Dual Hons (Geology/Geography) PGCE, GPA, ECDL (Adv)

What is Geology?

Geology is a science, which concerns the study of the Earth – this can include the Earth's origin, its recent and ancient past, its structure and its composition. Geology involves so many other geosciences, it would be hard to break them all up, but some of the most popular include:

1. Geophysics – specifically interested in the physical structure/properties of the Earth
2. Geochemistry – specifically interested in the chemical properties of different parts of the Earth
3. Palaeontology – the study of fossils that once lived on the Earth
4. Vulcanology – the study of volcanoes
5. Seismology – the study of earthquakes
6. Environmental Geology – how geology and the environment interact
7. Economic Geology – finding and extracting the Earth's vast mineral and energy sources such as oil, gas and ores
8. Cartography – reading and creating geological maps

Course Requirements

The course does not require a previous background in the subject. There are no specific GCSE subjects for entry, or grade requirements.

Why do it?

Addicted to programmes on Dinosaurs, the solar system, earth history? Are you curious about the end of the world? Do you want to know what caused the recent volcanic eruption in Iceland, or what will be the long term environmental effects of the latest oil slick disaster around the Gulf of Mexico? Geology is more than just staring at rocks! Geology also provides an excellent bridge between the sciences and humanities, and can therefore be successfully combined with a mixture of other subjects such as Biology, Geography, Chemistry, Physics and Business Studies.

Is it hard?

One of the useful functions of A/S Geology is the acceptance of Geology for courses in higher education as a science, yet it is less demanding and less mathematical than other sciences. Because the subject isn't offered before A-level, you don't hit the depth you might with further maths. You have to learn new terms and procedures, and because it is a science subject analysis and observation are very important, as you will need to learn how to use geological maps and analyse fossils for clues about the history of the earth, but many students do well because they are not held back by preconceptions about how good they are at the subject.

How much practical work is there?

"Geology without fieldwork would be like Chemistry without experiments".

Geology is a detective story where the evidence is old, fragmented and tortured by the earth's heaving. In the course, you will develop the skills and techniques to solve some of the earth's puzzles. The course is equally divided between theory and practical. Fieldwork is a vital component and you will spend several days out locally in Cheshire, North Wales and the Peak District. If you like variety in your studies and enjoy the outdoors, try geology.

Areas of Employment for Geoscientists

Any student with a Geology qualification would be presented with an overwhelming variety of jobs that would require the skills that the subject has refined. Geological issues are constantly in the public eye: the dwindling resources of fossil fuels, tragic natural disasters that cause massive losses of life and the new discoveries on the ocean floor. Many branches of geology are on the cutting edge of science and provide massive scope for employment. The diversity of the subject means that geoscientists are employed in many different areas:

Acoustic & Air Pollution	Marine Geology
Agricultural Science	Meteorology
Archaeology	Mineralogy
Atmospheric Science	Mining / Mineral Exploration
Botany	Natural Resource Management
Civil Engineering	Oceanography / Marine Sciences
Climate Sciences	Oil Field Services
Commercial, Sales & Marketing	Oil & Gas
Conservation Biology	Palaeoecology
Contaminated Land & Remediation	Palaeontology
Earth System Science	Petroleum Engineering
Ecology	Petrology
Economic Geology	Plant Science
Engineering Geology	Planetary Science
Environmental Sciences	Remote Sensing / GIS
Forestry	Science policy & Management
Geochemistry	Sedimentology
Geochronology	Seismology
Geocomputing	Stratigraphy
Geography	Structural Geology
Geomorphology	Soil Science
Geophysics	Space & Planetary Sciences
Geotechnical	Transport Engineering & Planning
Glacial geology	Volcanology
Hydrology / Hydrogeology /	Waste Management

Course Content: A/S Geology

Units GL1: Foundation Geology 35% External Written examination

Internal structure of the Earth, Minerals, Igneous Rocks, Volcanoes, Weathering, Erosion and Transportation, Sedimentary Rocks, Metamorphic Rocks, Plate Tectonics and the formation of mountains, Fossils and how they lived, Dating of rocks, Folding, Faulting, Geological Maps.

Unit GL2: Practical Geology 30% Internal Practical examination

Practical exercises based on simplified geological maps, with rock, mineral and fossil specimens, photographs and other data. Questions relate to investigative skills to determine the geological background and solve geological problems.

Unit GL3: Geology and the Human Environment 35% External Written examination

Natural Hazards (classification, prediction and control): Volcanoes, Earthquakes, Landslides.
Human Hazards: Waste Disposal, Mining and Tunnelling, Water Supplies.
Use of Geology in Engineering: Dams and Reservoirs, Cuttings and Tunnels, Building Foundations, Site Investigation.