

## **Geology - an Introduction to Earth Science (IGA approved)**

An Irish Geological Association (IGA) approved course.

### The course

Geology is the scientific study of the Earth as a whole, its origin, composition, evolution (including the evolution of life) and the processes that affect it. This course will provide a broad introduction to this fascinating subject with multimedia presentations, discussions, practical work and two field trips. The course will encompass and extend the Leaving Certificate core unit 1 Geography syllabus with modern Earth Science topics and research. School teachers welcome and teaching resources available. An IGA certificate of attendance will be available for satisfactory participation.

### Course tutor

Tom de Brit, B.A.(Mod Nat Sci), Ph.D., H.Dip.(Ed)

Tom has an honors Geology degree and a Ph.D. by research in Geology. He has worked in mineral exploration, software development and more recently secondary school teaching.

### Course topics

- Planetary evolution, the solar system, accretion of the Earth, the Moon, meteorites
- The layered structure of the Earth, seismics
- The atmosphere, hydrosphere, cryosphere and element cycles
- Geological time, the age of the Earth, superposition and stratigraphy
- Earthquakes, volcanoes, mountain belts, rift-valleys, ocean ridges & trenches
- The theory of plate tectonics, Ireland's plate tectonic history
- Geometry of rock bodies, folding, faulting, geological maps
- Surface processes, weathering, erosion, deposition and landforms
- Rock forming minerals
- Igneous rocks, Irish examples
- Sedimentary / fragmentary rocks, Irish examples
- Metamorphic rocks, Irish examples
- Palaeontology, fossils, evolution of life, extremophiles
- Economic Geology, coal, oil, water, geo-engineering, geo-hazards, GIS
- Remote sensing, global warming, carbon capture, Earth's future destiny

### Field trips

There are two scheduled field trips of 4 to 5 hours duration close to Dublin along public transport routes. These will not require much physical endurance or long walks, but will require walking across rough slippery rocks occasionally.

### Requirements

No requirements other than an interest in Science or the natural world. We do recommend joining the Irish Geological Association (IGA) as they hold lectures, field trips and social events for anyone interested in Geology at all levels and would compliment the course very well. Student membership €5, full membership €20, family €30. ([www.geology.ie](http://www.geology.ie))