Geology MSci

Geology is the study of Earth’s history, composition and evolution. We tackle this through a multidisciplinary programme stretching from understanding Earth materials, internal processes that cause volcanoes and earthquakes, to surface processes that shape landscapes. We explore biological processes that build diversity and trigger extinctions, ocean and atmospheric processes shaping climate, and issues relating to resources, geohazards and climate change.

Key information

Programme starts
September 2020

Location
London, Bloomsbury

Degree benefits

// The department delivers world-leading research embracing the origins and history of life, Earth’s composition and structure, earthquake and volcanic hazards, and past and present climate change, and these are fully integrated within our taught programme.

// We have recently moved into the renovated Kathleen Lonsdale Building with new, world-class facilities include bespoke teaching laboratories, new microscope facilities and student study areas, all in the heart of the department, next to staff offices and research laboratories.

// The department has one of the highest staff/student ratios in the country, resulting in small classes. Teaching is delivered by all of our research-active staff guaranteeing up-to-the-minute understanding and providing opportunities to take part in cutting-edge research activities.

// This programme includes approximately three months of field classes in the UK and continental Europe and independent field mapping projects in Scotland, Southern France and Spain, with financial support from the department.

Accreditation
This programme is accredited by the Geological Society. Undergraduate students may join the Geological Society as a Candidate Fellow and can become a Fellow of the Society upon graduation. A Fellow of the Society with relevant postgraduate experience in the practice of geology has the opportunity to apply for Chartered Geologist (CGeol) status.

Degree structure

In each year of your degree you will take a number of individual modules, normally valued at 15 or 30 credits, adding up to a total of 120 credits for the year. Modules are assessed in the academic year in which they are taken. The balance of compulsory and optional modules varies from programme to programme and year to year. A 30-credit module is considered equivalent to 15 credits in the European Credit Transfer System (ECTS).

Together with subject-specific skills, the Geology MSci also provides a strong intellectual and practical platform for those who wish to pursue non-geological careers as it integrates a wide range of ideas from many different scientific disciplines, including chemistry, physics and biology, and provides training in the application of scientific methods and knowledge to complex problems.

The programme includes: studies of the nature of rocks and minerals, their mode of origin and environment of formation; the study of past life and palaeoenvironments; the physics and chemistry of the Earth; major Earth processes such as plate tectonics and mountain building (tectonics).

The first and second years develop core skills and knowledge in the subject. The third year provides opportunities for specialisation and diversification, with an emphasis on individual initiative and problem-based learning. During fieldwork students learn to apply and develop independent and team skills and problem-solving abilities which complement and build upon lectures and laboratory-based coursework, whilst being exposed to the true complexity of natural geological problems.

The first three years of the MSci programmes are identical to the BSc programmes. However, the additional fourth year of the MSci allows for an individual research project and advanced optional modules, providing extra depth and breadth of knowledge.

YEAR ONE

Core or compulsory module(s)

// Dynamic Earth
Earth Materials
From Petrology to Petrogenesis (including Cornwall fieldwork)
Geochemistry
History of Life
Surface Processes (including Dorset/Devon fieldwork)
The Earth

Optional modules

// You will select 15 credits from the following:
// Foundations of Physical Geoscience (compulsory for students without A-Level Mathematics)
// Mathematics (A-Level Mathematics required)
// Science Communication and Public Engagement
// Revealing Science
### YEAR TWO

**Core or compulsory module(s)**
- Global Geophysics
- Igneous Petrology
- Isotope Geology
- Maps, Images and Structures (including fieldwork)
- Structural Geology and Tectonics
- Surface Processes and Structures (including fieldwork)
- Vertebrate Palaeontology and Evolution

**Optional modules**
- You may select 15 credits from the following:
  - Principles of Climate
  - Numerical Methods for Earth Sciences
  - Evolution in Science and Culture
  - Engaging the Public with Science

### YEAR THREE

**Core or compulsory module(s)**
- Crustal Dynamics, Mountain Building and Basin Evolution (including Betics fieldwork)
- Earth Resources and Sustainability
- Geodynamics and Global Tectonics
- Geological or Environmental Mapping Project

**Optional modules**
- You may select up to 45 credits from the following options:
  - Biodiversity & Macroevolutionary Studies
  - Seismology I
  - Ocean Physics and Climate Change
  - Metamorphism and Metamorphic Processes
  - Geosciences Report
  - Groundwater Science
  - Marine Geology
  - Advanced Geochemistry

### FINAL YEAR

**Core or compulsory module(s)**
- Earth and Planetary System Science
- Independent MSci Project

**Optional modules**
- You may select up to 60 credits from the following options:
  - Earth & Planetary Materials
  - Physical Volcanology & Volcanic Hazard
  - Tectonic Geomorphology
  - Palaeoceanography
  - Sustainable Management of the Environment
  - Earthquake Seismology & Earthquake Hazards (places are limited and cannot be guaranteed)
  - Palaeoclimatology
  - Melting and Volcanism
  - Deep Earth & Planetary Modelling
  - Advanced Biodiversity and Macroevolutionary Studies
  - You may take up to 1.0 credit outside the department.

---

**Your learning**

We use a mixture of lectures, practical classes, field courses, directed reading, problem-orientated learning, private study and tutorials to enable you to gain the theoretical knowledge and practical skills demanded by the programme, as well as to develop key transferable skills such as critical analysis, report writing, team working and organisational skills.

**Fieldwork**

Field-based modules are included in all years and currently take place in the UK, Spain and Germany.

**Assessment**

You will be assessed by a combination of written examinations, practical examinations, coursework, independent project reports and sometimes an oral examination.

---

**Your career**

The programme provides a broad education in geology, integrating field and laboratory skills with theoretical studies. The strong emphasis on fieldwork provides a unique opportunity to develop independent and team skills, problem-solving abilities and specific skills such as rock identification, fabric recognition, map-making and the geometrical solving of complex three-dimensional structures.

All our students are encouraged and helped towards making informed career choices. We have excellent relationships with many employers in diverse aspects of the Earth and planetary sciences, and students are actively guided towards achieving their potential at UCL in preparation for their future careers.

**Your application**

Application for admission should be made through UCAS (the Universities and Colleges Admissions Service). Applicants currently at school or college will be provided with advice on the process; however, applicants who have left school or who are based outside the United Kingdom may obtain information directly from UCAS.

We will assess your application on the basis of your performance, or predicted performance academically, but we will also be looking for an indication of how your interest in natural and Earth sciences has developed, what aspects particularly appeal to you, and whether you have undertaken any research or reading to find out about the subject matter you wish to study.

We normally reach a decision on making an offer on the basis of the application alone. If you are resident in the UK and have been made an offer you will be invited to a Post Offer Open Day. This visit will include introductory talks on Earth sciences and our degree programmes, a tour of the department and UCL and a question and answer session.
Entry requirements

A LEVELS
Standard Offer: AAB. Two sciences preferred.

Contextual Offer: BBB. Two sciences preferred.

GCSE
English Language and Mathematics at grade C or 5. For UK-based students, a grade C or 5 or equivalent in a foreign language (other than Ancient Greek, Biblical Hebrew or Latin) is required. UCL provides opportunities to meet the foreign language requirement following enrolment, further details at: www.ucl.ac.uk/ug-reqs

IB DIPLOMA
Standard Offer: 36 points. A score of 17 points in three higher level subjects to preferably include two sciences, with no score lower than 5.

Contextual Offer: 32 points. A score of 15 points in three higher level subjects to preferably include two sciences, with no score lower than 5.

CONTEXTUAL OFFERS – ACCESS UCL SCHEME
As part of our commitment to increasing participation from underrepresented groups, students may be eligible for a contextual offer as part of the Access UCL scheme. For more information see www.ucl.ac.uk/prospectus

OTHER QUALIFICATIONS
UCL considers a wide range of UK and international qualifications for entry into its undergraduate programmes. Full details are given at: www.ucl.ac.uk/otherquals

UNDERGRADUATE PREPARATORY CERTIFICATES (International foundation courses)
UCL Undergraduate Preparatory Certificates (UPCs) are intensive one-year foundation courses for international students of high academic potential who are aiming to gain access to undergraduate degree programmes at UCL and other top UK universities.

Typical UPC students will be high achievers in a 12-year school system which does not meet the standard required for direct entry to UCL.

For more information see: www.ucl.ac.uk/upc.

TUITION FEES
The fees indicated are for undergraduate entry in the 2020/21 academic year. The UK/EU fees shown are for the first year of the programme at UCL only. Fees for future years may be subject to an inflationary increase. The Overseas fees shown are the fees that will be charged to 2020/21 entrants for each year of study on the programme, unless otherwise indicated below.

// UK & EU: £9,250 (2020/21)
// Overseas: £28,610 (2020/21)

Full details of UCL’s tuition fees, tuition fee policy and potential increases to fees can be found on the UCL Students website.

Additional costs
Students will be required to pay for transportation to overseas field trips and food. (The department covers accommodation and transport costs in the UK.)

FUNDING
Various funding options are available, including student loans, scholarships and bursaries. UK students whose household income falls below a certain level may also be eligible for a non-repayable bursary or for certain scholarships. Please see the Fees and funding pages for more details.

CONTACT
Professor Dario Alfè
Email: earthsci@ucl.ac.uk
Telephone: +44 (0)20 3108 6352
Department: Earth Sciences

Brexit
For up-to-date information relating to specific key questions following the UK's decision to leave the EU, please refer to: www.ucl.ac.uk/brexit

Disclaimer
This information is for guidance only. It should not be construed as advice nor relied upon and does not form part of any contract. For more information on UCL’s degree programmes please see the UCL Undergraduate Prospectus at www.ucl.ac.uk/prospectus