



## **Module Specification**

### **Engineering Geology**

Version: 2026-27, v4.0, Approved

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## Part 1: Information

**Module title:** Engineering Geology

**Module code:** UBGL68-15-3

**Level:** Level 6

**For implementation from:** 2026-27

**UWE credit rating:** 15

**ECTS credit rating:** 7.5

**College:** College of Arts, Technology and Environment

**School:** CATE School of Engineering

**Partner institutions:** None

**Field:** Engineering, Design and Mathematics

**Module type:** Module

**Pre-requisites:** None

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

**Professional, statutory or regulatory body requirements:** None

## Part 2: Description

**Overview:** This module comprises a link between Geology and Civil Engineering and it is designed to introduce students to the applications of Engineering Geology and explore the mitigation/prevention of Geotechnical Hazards.

**Features:** Not applicable

**Educational aims:** This module aims to enable students to recognise and explore the geological factors that influence the design, operation and maintenance of civil

engineering structures and foundations, as well as to propose effective solutions to engineering geological problems and geotechnical hazards

**Outline syllabus:** The syllabus will typically include:

Rocks, rock masses, rock mass classifications

Geological structures and maps

Engineering description of soils and rocks and factors affecting their behaviour

Geotechnical hazards (landslides, dam failures, earthquakes), their mitigation and prevention

Geological investigations of engineering sites (site investigations, rock mass rating and engineering geological mapping) for roads, railways, bridges, tunnels, dams, critical infrastructure and geothermal site exploration

Groundwater and design of abstraction works

### **Part 3: Teaching and learning methods**

**Teaching and learning methods:** Scheduled learning on this module includes lectures, practical work and fieldwork.

Independent learning includes time engaged with essential and further reading, use of e-learning resources, assessment preparation and assessment completion.

**Module Learning outcomes:** On successful completion of this module students will achieve the following learning outcomes.

**MO1** Explain the engineering properties and behaviour of soil and rock as engineering material to analyse the geological conditions for civil engineering purposes

**MO2** Identify and evaluate geotechnical hazards and design appropriate protection and mitigation measures

**MO3** Design earth works, groundwater abstraction and rock support as well as basic site investigations for dam construction, tunnels, geothermal exploration and other engineering geological projects

**Hours to be allocated:** 150

**Contact hours:**

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

**Reading list:** The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/5A48E396-FCF1-D221-B877-75A6A015BD38.html?lang=en&login=1) via the following link <https://rl.talis.com/3/uwe/lists/5A48E396-FCF1-D221-B877-75A6A015BD38.html?lang=en&login=1>

**Part 4: Assessment**

**Assessment strategy:** Formative Presentation: Students will explore the taught theoretical background to the different geological factors that affect design and construction of infrastructural systems, by conducting a literature review of reported case studies, and make an individual presentation of their findings.

Summative Assessment:

Design report: Students will apply their knowledge of the impact of geological factors on engineering projects. They will design, and produce a report for professionals and organisations, either for earth works, groundwater abstraction or rock support, or a solution to a specific geotechnical hazards case, or a site investigation for dam construction and geothermal exploration. Students will be given a choice of case studies to develop into projects.

Referral deliverable(s) will be scaled appropriately to group size and task complexity.

Formative work:

Formative work will be set weekly during practical and tutorial sessions for students' self assessment. Students will receive preparation exercises including discussions during tutorials for the summative assessment

**Assessment tasks:**

**Report (First Sit)**

Description: Report (2500 words)

Weighting: 100 %

Final assessment: Yes

Group work: Yes

Learning outcomes tested: MO1, MO2, MO3

**Report (Resit)**

Description: Report (2500 words)

Weighting: 100 %

Final assessment: Yes

Group work: Yes

Learning outcomes tested: MO1, MO2, MO3

**Part 5: Contributes towards**

This module contributes towards the following programmes of study:

Civil Engineering {Foundation} [Frenchay] BEng (Hons) 2023-24

Civil Engineering [Frenchay] BEng (Hons) 2024-25

Civil Engineering [Frenchay] MEng 2024-25

Civil Engineering [Frenchay] BEng (Hons) 2024-25

Civil Engineering [Frenchay] MEng 2024-25

Civil Engineering {Foundation} [Frenchay] MEng 2023-24