# Module Specification

## Soil Mechanics

Version: 2025-26, v6.0, Approved

**Contents**

## Part 1: Information

**Module title:** Soil Mechanics

**Module code:** UBGMUQ-15-2

**Level:** Level 5

**For implementation from:** 2025-26

**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:** Engineering Principles for Civil Engineering 2024-25

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

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

## Part 2: Description

**Overview:** In this module you will be introduced to the fundamentals of soil mechanics including the properties and behaviour of soils.

**Features:** Not applicable

**Educational aims:** See Learning Outcomes.

**Outline syllabus:** You will cover:
Soil as a three-phase material.

Soil description, classification and properties.
Laboratory and in situ tests to determine the properties of soils.
The principle of horizontal and vertical effective stress.
Strength of soils (Tresca and Mohr-Coulomb failure criteria).
Compaction, compression and consolidation.
Permeability of soils.
Seepage and flow nets

## Part 3: Teaching and learning methods

**Teaching and learning methods:** This module is taught through a combination of lectures, laboratory practicals and tutorials. The tutorial will involve the discussion of solutions to problems set as part of directed independent learning.

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

**MO1** Interpret and analyse data from soil tests to derive appropriate parameters for geotechnical design.

**MO2** Compute and interpret various soil stresses and determine the shear strength of cohesive and cohesionless soils.

**MO3** Use principles of soil mechanics to solve practical problems related to soil permeability, consolidation, and compaction in geotechnical engineering 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 via the following link https://uwe.rl.talis.com/modules/ubgmuq-15-2.html

## Part 4: Assessment

**Assessment strategy:** The learning outcomes require application of theory in the analysis of soil mechanics problems, this is assessed through an unseen written examination. More involved work of interpretation and analysis of test data will be assessed during the laboratory sessions.

Assessment Task 1 – Face to Face Examination (3 hours). Learning outcomes 2 and 3. A written examination.

Assessment Task 2 – Practical Skills Report. Learning outcomes 1.
A laboratory report documenting and interpreting individual laboratory practical work completed after each laboratory session.

Formative feedback will be provided in the laboratory sessions and through discussion of solutions to problems in the tutorial sessions.

**Assessment tasks:**

**Practical Skills Assessment** (First Sit)
Description: In Lab sessions - Practical Skills Assessment (During Laboratory Sessions)
Weighting: 0 %
Final assessment: No
Group work: No
Learning outcomes tested:

**Examination** (First Sit)
Description: Face to Face Exam (3 hours)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested:

**Practical Skills Assessment** (Resit)
Description: In Lab sessions - Practical Skills Assessment (During Laboratory Sessions)
Weighting: 0 %
Final assessment: No
Group work: No
Learning outcomes tested:

**Examination** (Resit)
Description: Face to Face Exam (3 hours)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested:

## Part 5: Contributes towards

This module contributes towards the following programmes of study:

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

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

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

Civil Engineering [Frenchay] MEng 2023-24

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

Civil Engineering [Frenchay] MEng 2024-25

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

Civil Engineering [Frenchay] - WITHDRAWN MEng 2024-25

Civil Engineering [Frenchay] MEng 2023-24

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

Civil Engineering [Frenchay] MEng 2024-25

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