



Module Specification

Civil Engineering Design and Technology

Version: 2024-25, v1.0, 20 Jul 2023

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Part 1: Information

Module title: Civil Engineering Design and Technology

Module code: UBGMKD-15-1

Level: Level 4

For implementation from: 2024-25

UWE credit rating: 15

ECTS credit rating: 7.5

College: Faculty of Environment & Technology

School: FET Dept of Geography & Environmental Mgmt

Partner institutions: None

Field: Geography and Environmental Management

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 explores the design of and technologies associated with some of the key civil engineering structures and infrastructures.

Features: Not applicable

Educational aims: The educational aims of this module are:

- To provide an overview of the design of and technologies associated with some of the key civil engineering structures and infrastructures.

- To develop students' ability to adopt an holistic approach to conceptual designs.
- To provide opportunities to develop students' ability to work in groups and to communicate design information in the form of drawings, presentations, and physical models.

Outline syllabus: Hard Systems:

- Geotechnical – eg. earthworks; retaining walls; foundations and sub-structures, including basements and ground stabilisation.
- Infrastructure – eg. drainage; water supply; gas and electricity.
- Building structure – eg. multi-storey and single storey; stability and disproportionate collapse.
- Civil Structures – eg. bridges; tunnels; dams; flood defences.
- Transport Systems – eg. road; rail; cycle.

Soft Systems:

- Design process.
- Project and risk management.
- Ethics.
- Sustainability.
- Health & safety.

Part 3: Teaching and learning methods

Teaching and learning methods: Students will receive – on average – 3 hours contact time per week. This will be in a range of formats, including weekly lectures, tutorial or group work sessions, guided practicals, and case-studies.

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

MO1 Describe the materials, elements and processes that make up a variety of civil engineering systems in both the built and natural environments

MO2 Analyse data to determine design solutions and quantify elements of civil engineering systems

MO3 Select appropriate standards and procedures for the design of common civil engineering systems

MO4 Apply a holistic engineering approach to the design of a civil engineering system, including consideration of health and safety, risk management, sustainability and ethical frameworks

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/80E8D669-2DFE-27D0-FDAF-8D9E3FC41DC8.html?lang=en&login=1) via the following link <https://rl.talis.com/3/uwe/lists/80E8D669-2DFE-27D0-FDAF-8D9E3FC41DC8.html?lang=en&login=1>

Part 4: Assessment

Assessment strategy: Summative Assessment:

The module will be assessed by a combination of online assessment and a portfolio of case studies.

Online assignment. Learning outcomes 1 - 2.

A series of online tests will require students to demonstrate their knowledge of some of the key civil engineering structures and infrastructures and their ability to select appropriate design solutions.

Case study portfolio. Learning outcomes 2 - 4.

The coursework will require each student to develop a portfolio reflecting on key components of the module syllabus and their application to a case study. Students will be encouraged to work in groups and share some of their reflections with the

cohort including a group presentation for peer review.

Formative work:

Students will be encouraged to document their portfolios throughout the module, and these will be discussed in groups and verbal formative feedback will be provided by tutors.

Resit:

The resit strategy is the same as the first sit and will involve online tests and a case-study portfolio.

Assessment tasks:

Portfolio (First Sit)

Description: Case-study portfolio (equivalent to 2000 words)

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Online Assignment (First Sit)

Description: Online tests (2 hours overall)

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2

Portfolio (Resit)

Description: Case-study portfolio (equivalent to 2000 words)

Weighting: 60 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO2, MO3, MO4

Online Assignment (Resit)

Description: Online test (2 hours)

Weighting: 40 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2

Part 5: Contributes towards

This module contributes towards the following programmes of study:

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

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

Civil Engineering {Apprenticeship-UWE} [Frenchay] BEng (Hons) 2024-25

Civil Engineering [Frenchay] MEng 2024-25

Civil Engineering [Frenchay] MEng 2024-25

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