



## **Module Specification**

### **Transport Engineering Design**

Version: 2024-25, v3.0, 30 Jul 2024

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## Part 1: Information

**Module title:** Transport Engineering Design

**Module code:** UBGLX8-15-2

**Level:** Level 5

**For implementation from:** 2024-25

**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 Graphics and Communication 2024-25, Engineering Principles for Civil Engineering 2024-25, Mathematics for Civil and Environmental Engineering 2024-25, Surveying 2024-25

**Excluded combinations:** None

**Co-requisites:** None

**Continuing professional development:** No

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

## Part 2: Description

**Overview:** Not applicable

**Features:** Module Entry Requirements:

For those not already on the BEng, or for others, A level mathematics or equivalent.

**Educational aims:** See Learning Outcomes

**Outline syllabus:** Sources of information for design including specifications and standards, and site specific parameters

The principles of geometric design for transport infrastructure

Horizontal and vertical curve design for highways and railways

Highway pavement and permanent way construction

Strength and characteristics of sub-grade

Infrastructure for preventing water ingress

Materials characteristics and selection for transport infrastructure

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

**Teaching and learning methods:** The module guide will provide a programme of activities for students on a week by week basis. This will include, viewing pre-recorded teaching materials, and engaging with set problems. Sessions with students will include further illumination of challenging issues, design sessions, and design critiques.

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

**MO1** Design highway and railway geometry according to a defined design speed, and for all types of highway user

**MO2** Assess the strength and suitability of sub-grade for transport infrastructure

**MO3** Specify appropriate materials for use in transport infrastructure

**MO4** Understand the importance of controlling water in the vicinity of transport infrastructure

**MO5** Conceive of transport design solutions and develop transport designs for open ended problems

**Hours to be allocated:** 150

**Contact hours:**

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 0

**Reading list:** The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ubglx8-15-2.html) via the following link <https://uwe.rl.talis.com/modules/ubglx8-15-2.html>

## **Part 4: Assessment**

**Assessment strategy:** The strategy is to develop skills in doing design calculations, and dealing with complex issues, with a series of online tests.

These skills will then build the capability to tackle an open ended transport design problem involving planning, feasibility, option development and selection (Portfolio).

**Assessment tasks:**

### **Portfolio (First Sit)**

Description: Open ended transport design problem involving planning, feasibility, option development and selection requiring the submission of a portfolio including a design statements, tabulations of data, drawings and explanations of solutions.

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

### **Online Assignment (First Sit)**

Description: A series of online tests on transport engineering design requiring calculations and reference to relevant design guidance as well as demonstrating understanding of engineering principles with clarity and accuracy.

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

### **Portfolio (Resit)**

Description: Open ended transport design problem involving planning, feasibility, option development and selection requiring the submission of a portfolio including a design statements, tabulations of data, drawings and explanations of solutions.

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5

### **Online Assignment (Resit)**

Description: A series of online tests on transport engineering design requiring calculations and reference to relevant design guidance as well as demonstrating understanding of engineering principles with clarity and accuracy.

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

## **Part 5: Contributes towards**

This module contributes towards the following programmes of study:

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

Civil Engineering [Frenchay] MEng 2023-24

Civil Engineering [Frenchay] MEng 2023-24

Civil Engineering {Apprenticeship-UWE} [Sep][FT][Frenchay][5yrs] BEng (Hons)  
2021-22

Civil Engineering [Sep][PT][Frenchay][7yrs] MEng 2021-22

Civil and Environmental Engineering [Sep][PT][Frenchay][5yrs] - Not Running BEng  
(Hons) 2021-22

Civil Engineering [Sep][PT][Frenchay][5yrs] BEng (Hons) 2021-22

Civil and Environmental Engineering {Foundation} [Sep][FT][Frenchay][4yrs] - Not  
Running BEng (Hons) 2022-23

Civil and Environmental Engineering {Foundation} [Sep][SW][Frenchay][5yrs] - Not  
Running BEng (Hons) 2022-23

Civil Engineering {Foundation} [Frenchay] BEng (Hons) 2022-23