



Module Specification

Transport Engineering Design

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Part 1: Information

Module title: Transport Engineering Design

Module code: UBGJFP-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 introduces the various elements to consider in the design of the transport infrastructure.

Features: Not applicable

Educational aims: The educational aims of this module are:

- To provide an overview of the geometric design and construction of the transport

infrastructure.

- To develop students' ability to design key elements of the transport infrastructure.

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 handbook will provide a programme of activities for students on a week by week basis. Activities include lectorial, workshop and laboratory sessions. Those sessions will include 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

MO2 Assess the strength and suitability of sub-grade and specify appropriate materials for use in transport infrastructure

MO3 Generate transport design solutions and develop transport designs that accommodate the needs of all highway users for open-ended problems

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://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: Summative Assessment:

The module will be assessed by a combination of online assessment and an individual report.

Online assignment. Learning outcomes 1 - 2.

A series of online tests will require students to demonstrate their ability to design the geometry and other specific design elements of transport infrastructure.

Individual report. Learning outcome 3

The individual report will require each student to develop a design solution to an open-ended transport problem involving planning, feasibility, and option development and selection.

Formative work:

Students will be provided verbal formative feedback by tutors during the timetabled sessions. The feedback received on the tests will also help students prepare their report.

Group work will be encouraged during the timetabled sessions to support each student with the open-ended problem.

Resit:

The resit strategy is the same as the first sit and will involve online tests and a report.

Assessment tasks:**Online Assignment (First Sit)**

Description: A series of online tests. (3 hours in total)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2

Report (First Sit)

Description: Open ended transport design problem involving planning, feasibility, option development and selection (3000 words).

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO3

Online Assignment (Resit)

Description: A series of online tests (3 hours in total)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2

Report (Resit)

Description: Open ended transport design problem involving planning, feasibility, option development and selection (3000 words).

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: 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