



Module Specification

Transport Infrastructure Design

Version: 2021-22, v2.0, 05 Jul 2021

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Part 1: Information

Module title: Transport Infrastructure Design

Module code: UBGMFX-15-M

Level: Level 7

For implementation from: 2021-22

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Geography & Environmental Mgmt

Partner institutions: None

Delivery locations: Frenchay Campus, Northshore College of Business and Technology

Field: Geography and Environmental Management

Module type: Standard

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: See Learning Outcomes

Outline syllabus: The syllabus includes:

Identification of sources of information for design including specifications and standards, and site specific parameters

Feasibility studies and route alignment

Principles of geometric design and interactions between vehicles and the infrastructure

Geometric design of highways and railways

Highway pavement design

Permanent way design

Geotechnical engineering relating to transport infrastructure

Dealing with water in relation to transport infrastructure

Materials characteristics and selection for transport infrastructure

Maintenance of transport infrastructure assets

Part 3: Teaching and learning methods

Teaching and learning methods: Students will be required to investigate and develop proposals for the design of problems in transport infrastructure engineering relating to a number of modes.

This will require individual working, but with the opportunities for peer support and review and for formative feedback on their proposals via the tutor.

Scheduled learning includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops and external visits.

Independent learning includes hours engaged with essential reading, design study preparation, assignment preparation and completion etc.

The learning will be made up of the following number of hours:

Directed contact learning: 36 hours

Independent Study: 36 hours

Assessment, including preparation: 78 hours

Total: 150 hours

Module Learning outcomes:

MO1 Apply design principles and standards to transport infrastructure geometric design problems

MO2 Apply design principles and standards to transport infrastructure construction problems

MO3 Generate a number of design options to solve an open ended problem

MO4 Synthesise specifications, standards and site conditions to develop final detailed solutions.

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://uwe.rl.talis.com/modules/ubgmfx-15-m.html) via the following link <https://uwe.rl.talis.com/modules/ubgmfx-15-m.html>

Part 4: Assessment

Assessment strategy: The assessment develops and assesses students' skills in the analysis and design of transport infrastructure, through two coursework projects, one in the form of a portfolio (50%), the other a report (50%).

One project (portfolio) is based on two transport infrastructure design problems, one of which is closed ended and the second is more open ended. Both designs require students to apply and evaluate design standards, develop and analyse alternative design options subject to constraints and make recommendations. This assessment is designed to help students understand design processes.

The second project (report assessment) involves a feasibility study requiring students to evaluate a wider range of issues leading to a design solution for a transport problem.

The resits will follow the same framework and involve a resubmission against the same or slightly modified brief (where modifications are deemed necessary to ensure that students have worked independently for example).

Assessment components:

Report - Component A (First Sit)

Description: Design feasibility report (2,000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio - Component B (First Sit)

Description: Design portfolio (2000 words plus appendices)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Report - Component A (Resit)

Description: Design feasibility study report (2,000 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio - Component B (Resit)

Description: Design portfolio (2000 words plus appendices)

Weighting: 50 %

Final assessment: Yes

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 [Sep][FT][Frenchay][1yr] MSc 2021-22

Civil Engineering [Sep][PT][Frenchay][2yrs] MSc 2020-21

Civil Engineering [Jan][FT][Northshore][4yrs] MEng 2018-19

Transport [Sep][FT][Frenchay][1yr] MSc 2021-22

Transport Engineering and Planning [Sep][FT][Frenchay][1yr] MSc 2021-22

Transport Engineering and Planning [Sep][PT][Frenchay][2yrs] MSc 2021-22

Civil and Environmental Engineering [Sep][FT][Frenchay][4yrs] MEng 2018-19