



Module Specification

Transport Infrastructure Design

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Part 1: Information

Module title: Transport Infrastructure Design

Module code: UBGMFX-15-M

Level: Level 7

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: 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: 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 transport modes.

Scheduled classes will include a mix of lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops and external visits.

Self-study in between scheduled classes will be driven by the coursework project(s) which require students to apply the principles examined in class to real world design problems. Students will be engaged with essential reading, calculation exercises,

and design study preparation, all of which culminate in the preparation of outputs required for the assessments.

Module Learning outcomes: On successful completion of this module students will achieve the following 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: Group presentation - requires students to apply and evaluate design standards, develop and analyse alternative design options subject to constraints and make recommendations, communicated in the form of a group presentation. This assessment is designed to develop and assess students' understanding of the design processes. The class brings together students from different disciplinary backgrounds (e.g. civil engineering, geography, planning, mathematics) and students will have the opportunity to work in multi-disciplinary

groups.

Report (2000 words) - involves a feasibility study requiring students to evaluate a wider range of issues leading to a design solution for a transport problem.

Resit Presentation - a similar brief to that described above, also undertaken as a group assessment (subject to the number of resitting students).

Resit Report - a similar brief to that described above, which may include some topic changes.

Assessment tasks:

Presentation (First Sit)

Description: Group presentation (20 minutes)

Weighting: 50 %

Final assessment: No

Group work: Yes

Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio (First Sit)

Description: Design portfolio (2000 words plus appendices)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Presentation (Resit)

Description: Group Presentation (20 minutes)

Weighting: 50 %

Final assessment: No

Group work: Yes

Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio (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 [Frenchay] MSc 2023-24

Civil Engineering [Frenchay] MSc 2022-23

Civil Engineering [Jan][FT][Northshore][4yrs] - Not Running MEng 2020-21

Transport Engineering and Planning [Frenchay] MSc 2023-24

Transport Engineering and Planning [Frenchay] MSc 2023-24

Civil and Environmental Engineering [Sep][FT][Frenchay][4yrs] - Not Running MEng 2020-21

Civil Engineering [Sep][FT][Frenchay][4yrs] MEng 2020-21

Civil and Environmental Engineering [Sep][SW][Frenchay][5yrs] MEng 2019-20