



## **Module Specification**

# **Transport Modelling and Scenario Planning**

Version: 2024-25, v2.0, 04 Jul 2024

### **Contents**

<b>Module Specification .....</b>	<b>1</b>
<b>Part 1: Information .....</b>	<b>2</b>
<b>Part 2: Description .....</b>	<b>2</b>
<b>Part 3: Teaching and learning methods .....</b>	<b>3</b>
<b>Part 4: Assessment.....</b>	<b>4</b>
<b>Part 5: Contributes towards .....</b>	<b>5</b>

## Part 1: Information

**Module title:** Transport Modelling and Scenario Planning

**Module code:** UBG8N-15-M

**Level:** Level 7

**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 Architecture and Environment

**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:** Transport professionals have an important role to play in helping agencies like national and local governments make informed decisions to meet policy goals. This module introduces students to transport models as tools to explain travel patterns and forecast the impact of proposed interventions.

It has become clear in recent years that predictions from transport models can diverge greatly from outcomes. The module also critically compares transport

models to decision support approaches which recognise uncertainty like vision-led scenario planning.

**Features:** Not applicable

**Educational aims:** The aims of the module are for students to:

Learn how to develop and apply transport models as tools for understanding: (i) present travel patterns and (ii) how travel patterns may change in response to different policy scenarios.

Think critically about the limitations of models as decision support tools; and

Evaluate alternative decision support approaches, like vision-led scenario planning.

**Outline syllabus:** The module will include consideration of:

The role of transport models and visioning methods in transport planning

Data sources and forms of travel survey

Factors underlying travel choices and travel demand

Mainstream transport modelling (four-stage, elasticity-based)

Disaggregate choice modelling

Traffic network models

Alternative transport modelling approaches (activity-based, land use-transport interaction, dynamic)

Application of transport models to explain travel patterns and forecast the impact of interventions

Alternative approaches to modelling like vision-led scenario planning

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

**Teaching and learning methods:** The module is delivered through a series of lectures, tutorials and workshops. During and between lectures students are expected to participate in solving example problems and discussing analysis approaches. Module tutors provide assistance and guidance on core mathematical

skills as appropriate.

The workshops are linked to the project coursework (discussed under assessment strategy).

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

**MO1** Explain the need for transport models and forecasting methods to support decision making in transport planning

**MO2** Explain the principles underlying different types of modelling, forecasting and visioning methods, evaluating: (i) their suitability for different applications and (ii) how to deal with uncertainty

**MO3** Develop and apply transport models to explain travel patterns and forecast the impact of proposed interventions

**MO4** Explain the principal sources of data used in transport planning and be able to design effective travel surveys

**Hours to be allocated:** 150

**Contact hours:**

Independent study/self-guided study = 113 hours

Face-to-face learning = 37 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/ubgm8n-15-m.html) via the following link <https://uwe.rl.talis.com/modules/ubgm8n-15-m.html>

## **Part 4: Assessment**

**Assessment strategy:** The Assessment:

Portfolio (3000 words or equivalent plus appendices) - Over the course of the

module, students will be engaged in learning about and applying different decision support methods including quantitative modelling methods using spreadsheet calculations and modelling software, and visioning methods. The portfolio will demonstrate engagement with these tasks and require students to critique the strengths and weaknesses of the different approaches.

Resit Portfolio (3000 words or equivalent plus appendices) - a similar brief to that described above, which may include some topic changes.

### **Assessment tasks:**

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

Description: Decision Support Portfolio (3000 words or equivalent plus appendices).

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

#### **Portfolio (Resit)**

Description: Decision Support Portfolio (3000 words or equivalent plus appendices).

Weighting: 100 %

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:

Transport Engineering and Planning [Frenchay] MSc 2023-24

Transport [Frenchay] MSc 2023-24

Transport Engineering and Planning [Frenchay] MSc 2024-25

Transport [Frenchay] MSc 2024-25

Transport Engineering and Planning [Frenchay] MSc 2024-25

Transport Engineering and Planning [Frenchay] MSc 2024-25