

## MODULE DESCRIPTION FORM



### DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING CL436 TRANSPORT PLANNING

<b>Module Registrar:</b> Neil Ferguson	<b>Taught To (Course):</b> Cohorts for whom class is compulsory / optional / elective		
<b>Other Lecturers Involved:</b>	<b>Credit Weighting:</b> 10	<b>Semester:</b> 2	
<b>Assumed Prerequisites:</b> MM215 or equivalent CL329 Engineering Maths or equivalent course in statistics CL330 Transport Engineering	optional/	<b>Academic Level:</b> 4	<b>Suitable for Exchange:</b> Y/

#### Module Format and Delivery (HOURS i.e. 1 credit = 10hrs of study):

Lecture	Tutorial	Laboratory	Groupwork	External	Online	Project	Assignments	Private Study	Total
20	5	5					20	50	100

#### Educational Aim

The transport system enables the movement of people and goods and provides a fundamental service to society. Planning the transport system presents major challenges given its complexity, relationship with other systems and the need to anticipate/shape future conditions. This class aims to introduce students to the principles and techniques used in the planning of transport systems which includes the development and assessment of options to address problems or take advantage of opportunities. This class will give students the opportunity to learn how to use Geographical Information Systems to support transport planning. Academic learning will be complemented by an industry-led workshop on transport planning in practice.

#### Learning Outcomes

On completion of the class the student is expected to be able to

LO1 Understand the key challenges facing transport systems from the present day to 2050

LO2 Represent the transport system as an abstract network of nodes and links

LO3 Develop models which estimate travel demand in existing and future transport systems

LO4 Identify specific problems with transport system performance

LO5 Develop potential solutions to address existing and future problems

LO6 Assess the operational, economic, social and environmental performance of the transport system

#### Syllabus

The module will include the following:

Topic 1: The transport planning process

Topic 2: Network modelling

Topic 3: Modelling the demand for transport

### Assessment of Learning Outcomes

#### Criteria

For each of the Module Learning Outcomes the following criteria will be used to make judgements on student learning:

- LO1 Understand the key challenges facing transport systems from the present day to 2050
  - C1 Describe the role of transport in supporting existing economic and social systems
  - C2 Describe the contribution of transport to climate change and other environmental problems
  - C3 Discuss alternative strategies to meet key challenges
- LO2 Represent the transport system as an abstract network of nodes and links
  - C1 Characterise a network (graph) on paper and by GIS
  - C2 Assess travel deterrence between nodes in a network
- LO3 Develop models which estimate travel demand in existing and future transport systems
  - C1 Describe the role and limitations of travel demand modelling within the transport planning process
  - C2 Use travel demand models to describe behaviour, estimate aggregate demand and forecast the impact of changes to the transport system
  - C3 Identify the key limitations of established travel demand modelling methods
- LO4 Identify specific problems with transport system performance
  - C1 Use data from multiple sources to identify transport system problems
  - C2 Construct objectives to address transport system problems
- LO5 Develop potential solutions to address existing and future problems
  - C1 Create a range of appropriate solutions to problems
- LO6 Assess the operational, economic, social and environmental performance of the transport system
  - C1 Define and compute commonly-used system performance metrics and interpret the outcomes

The standards set for each criterion per Module Learning Outcome to achieve a pass grade are indicated on the assessment sheet for all assessment.

#### Principles of Assessment and Feedback

(within Assessment and Feedback Policy at: <https://www.strath.ac.uk/staff/policies/academic/> )

Please state briefly how these are incorporated in this module.

1. Numerical solutions provided for selected tutorial questions and a mock exam papers with breakdown of marks. Marking criteria are clearly documented in coursework. Clear guidance given in class as to what constitutes excellent performance in coursework.
2. Formative feedback is given on problem sets. Formative feedback on preparation of coursework.
3. Opportunities for dialogue are provided in all tutorials and most lectures.
4. Tutorial problems are structured in order of increasing difficulty.
5. Tutorials and mid-term feedback and interaction with students provide information to teaching

**Assessment Method(s) Including Percentage Breakdown and Duration of Exams**

	Examinations			Courseworks		Projects		
	Number	Month(s)	Duration	Weighting	Number	Weighting	Number	Weighting
	1	April/May	2	60%	1	15%		
					2	25%		
L/Outcomes	LO1-6			LO1-4				

Indicate which learning outcomes (L01, L02 etc) are to be assessed by exam/coursework/project as required.

**Coursework / Submissions deadlines (academic weeks):**

Coursework 1 – week 6  
 Coursework 2 – week 10

**Resit Assessment Procedures:**

2 hr examination in August diet

**PLEASE NOTE:**

Students must gain a summative mark of 40% to pass the module. Students who fail the module at the first attempt will be re-examined during the August diet. This re-examination will consist entirely of exam. No marks from any previous attempts will be transferred to a new resit attempt.

**Recommended Reading**

\*\*\*Purchase recommended    \*\*Highly recommended reading    \*For reference

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\*Banister, D. (2001) Transport Planning, Spon  
 \*\*Boyce, D.E and Williams, H.C.W.L (2015) Forecasting Urban Travel – Past, Present and Future, Edward Elgar. (ebook)  
 \*\*Geurs, K.T., Krizek, K.J., Reggiani, A (2012) Accessibility Analysis and Transport Planning: Challenges for Europe and North America, Dawsonera. (ebook)  
 \*\*Levinson, D., Marshall, W. and Axhausen, K. (2017) Elements of Access, Network Design Lab (ebook)  
 \*\*Levinson, D., King, D.A. (2019) A Political Economy of Access, Network Design Lab (<https://ses.library.usyd.edu.au/handle/2123/21629>)  
 \*\*O’Flaherty, C. A. et al (1997) Transport Planning and Traffic Engineering, Arnold. (ebook)  
 \*\*Silva, C., Bertolini, L. and Pinto, N. (eds) (2019) Designing accessibility instruments : lessons on their usability for integrated land use and transport planning practices /., New York, NY :, Routledge,, 9781315463612, EISBN (ebook)

**Additional Student Feedback**

(Please specify details of when additional feedback will be provided)

Date	Time	Room No

Session:

**Approved:**

Course Director Signature:

**Date of Last Modifications:**

(Updated May 2018)

## MODULE TIMETABLE

Module Code:

CL436

Module Title:

Transport Planning

**Brief Description of Assessment:**

### Assessment Timing:-

Indicate on the table below the start/submission dates for each assignment/project and the timing of each exam/assessment using the dropdowns provided. Dropdowns can be left blank. Add extra notes below the dropdowns.

**Please note: Timings can and will change, this should only be used as a guide.**

Semester One	W&D Wk	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period

  

Semester Two	C&D Wk	WK1	WK2	WK3	WK4	WK5	WK6	WK7	WK8	WK9	WK10	WK11	Exam Period
					Course work Set			Course work Submit Course work Set				Course work Submit	