Module Descriptor Form

Civil and Environmental Engineering

CL436   - Transport Planning

Module Code	CL436	Module Title	Transport Planning				
Module Registrar	Ferguson, Dr Neil S						
Other Staff Involved	Dr James J H Dixon (Lecturer)						
Credit Weighting	10	Semester	2	Elective	No	Academic Level	4
Pre-requisites							
Required for							

Module Format and Delivery (hours):

Lectures	Tutorials	Assignments	Labs	Private Study	Total
20	4	25	6	45	100

Educational Aim

This module aims to:

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.

Syllabus

This module will teach the following:

1. Introduction to Transport Planning (week1/JD)
2. Network Performance and Equilibrium (week 2/NF)
3. Accessibility (week 3/NF)
4. Transport Demand Modelling (weeks 4-6/NF)
5. Critical appraisal of TDM (week 7/JD)
6. Transport and Land Use (week 8/JD)
7. Project Appraisal (week 9/JD)
8. Scenario-based planning and transoport sector pathways (week 10/JD)

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Learning Outcomes

On Completion of the module, the student is expected to be able to:

LO: 1	Understand the key challenges facing transport systems from the present day to 2050
LO: 2	Represent the transport system as an abstract network of nodes and links
LO: 3	Develop models which estimate travel demand in existing and future transport systems
LO: 4	Identify specific problems with transport system performance
LO: 5	Develop potential solutions to address existing and future problems
LO: 6	Assess the operational, economic, social and environmental performance of the transport system

(UK SPEC suggests no more than 4 learning outcomes per module. Statements must be broad and be syllabus free and link in with the intended learning outcomes on the programme specifications.)

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Assessment of Learning Outcomes - Criteria

Learning Outcome: **1**

	Criteria
1	Describe the role of transport in supporting existing economic and social systems
2	Describe the contribution of transport to climate change and other environmental problems
3	Discuss alternative strategies to meet key challenges

Learning Outcome: **2**

	Criteria
1	Characterise a network (graph) on paper and by GIS
2	Assess travel deterrence between nodes in a network

Learning Outcome: **3**

	Criteria
1	Describe the role and limitations of travel demand modelling within the transport planning process
2	Use travel demand models to describe behaviour, estimate aggregate demand and forecast the impact of changes to the transport system
3	Identify the key limitations of established travel demand modelling methods

Learning Outcome: **4**

	Criteria
1	Use data from multiple sources to identify transport system problems
2	Construct objectives to address transport system problems

Learning Outcome: **5**

	Criteria
1	Create a range of appropriate solutions to problems

Learning Outcome: **6**

	Criteria
1	Define and compute commonly-used system performance metrics and interpret the outcomes

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

To Pass the module, students need to gain a summative mark of: 40%

Description	Semester	Start Week	Duration	Weight	Submission Week	Linked Criteria
GIS-Transport Analysis	2	3		25%	8	LO 1: C1, C2, C3 LO 2: C1, C2 LO 3: C1, C2, C3 LO 4: C1, C2
Final Exam. Closed Book	2		2.00	75%	E	LO 1: C1, C2, C3 LO 2: C1, C2 LO 3: C1, C2, C3 LO 4: C1, C2 LO 5: C1 LO 6: C1

Principles of Assessment Feedback

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

Additional Information

Failure to attend the end of semester exam will result in an absence being returned.

Resit Procedure

If final mark is less than 40% and
(1) exam less than 40% then resit will be exam, or
(2) coursework mark is less than 40% will be resit

Recommended Reading

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)

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)

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Module Timetable

Week	Semester 1	Semester 2
0		
1		
2		
3		
4		
5		
6		
7		
8		Submission 25%
9		
10		
11		
E		Examination 75%

Date of Last Modification

11-09-2025