Module Code	CE7T04
Module Name	T4: Intelligent Transportation Systems
ECTS Weighting[1]	5 ECTS
Semester taught	Semester 2
Module Coordinator/s	Asst. Prof. Bidisha Ghosh (bghosh@tcd.ie)
Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline	On successful completion of this module, students should be able to: LO1. Develop an overview of the state-of-the-art in intelligent transportation considering traffic data, computer-based modelling, and communication technologies. LO2. Critically appraise the role of Artificial Intelligence in improving safety, efficiency and sustainability of transportation systems LO3. Analyse traffic data. LO4. Develop understanding of automated or self-driving cars LO5. Utilise microsimulation software (VISSIM) to evaluate traffic network design. **Graduate Attributes: levels of attainment** To act responsibly - Enhanced To think independently - Enhanced To develop continuously - Attained To communicate effectively - Not embedded
Module Content	This module focusses on the role of data, analysis and evaluation in transportation engineering. The objectives are: - Introduction to Intelligent Transportation Systems - Modelling traffic using software and theories - Traffic data modelling This module will include: • Introduction to intelligent transportation system • Training of VISSIM • Traffic data analysis and modelling

[1] TEP Glossary

	• Self-Driving Cars and related technologies • Incident Management Scheme Design • Traffic Forecasting
Teaching and Learning Methods	Teaching strategies • Core content via lecture (direct) • Individual Assignments • Software training session

Assessment Details[2]
Please include the following:

- **Assessment Component**
- **Assessment description**
- **Learning Outcome(s) addressed**
- **% of total**
- **Assessment due date**

Assessment Component	Assessment Description	LO Addressed	% of total	Week due
Assignment	Presentation and report	LO1, LO2 & LO5	20%	Wk10, Sem 2
Examination	Written, closed-book, examination	LO1-4	80%	Sem 2, Exam period

Reassessment Requirements	Written, closed-book, examination (weighted 100%).
Contact Hours and Indicative Student Workload[2]	**Contact hours: 24 lectures** **Directed learning: 16 hours** **Independent Study (preparation for course and review of materials): 60 hrs** **Independent Study (preparation for assessment, incl. completion of assessment):** **25 hours assignments**
Recommended Reading List	To be provided in the lectures

Module Pre-requisite	Engineering or Sciences Primary Degree
Module Co-requisite	
Module Website	
Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	No
Module Approval Date	
Approved by	
Academic Start Year	9th September 2024
Academic Year of Date	2024/2025