



Course Syllabus

Course Code	Course Title	ECTS Credits
CEE-470	Transportation Plan and Design	5
Prerequisites	Department	Semester
CEE-371	Engineering	Fall/Spring
Type of Course	Field	Language of Instruction
Elective	Civil & Environmental Engineering	English
Level of Course	Lecturer(s)	Year of Study
1 st Cycle	Dr Gialama Tatiana-Ioanna	4 th
Mode of Delivery	Work Placement	Corequisites
Face-to-face	N/A	None

Course Objectives:

The main objectives of the course are to:

- Introduce students to the basic transportation planning, concepts, terminology and policies.
- Provide students with a good background in transportation characteristics, operations, design and planning.
- Introduce to the students the concepts of urbanisation and urban mobility and provide them with knowledge in regard to the urban land use and transport.
- Introduce and apply basic concepts and methods of transportation planning.
- Provide students with the necessary skills to deal with planning issues related to public transportation, urban transportation and freight transportation.
- Present data collection and analysis techniques and introduce the concept of the “Big Data”.
- Introduce to the students the concepts of sustainable mobility, smart transportation and smart cities.
- Present the information technology and its application to the transportation sector with regard to the fundamentals of the intelligent transportation systems (ITS).
- Provide knowledge regarding the interrelation between transportation and environment.

Learning Outcomes:

After completion of the course students are expected to be able to demonstrate knowledge and understanding of:

- the transportation planning and design process;
- the urban public transport characteristics with regard to public transportation, pedestrians and bicyclists and parking;
- the freight transport characteristics with regard to the supply chain, unification and packaging, logistics, freight transport modes, intermodal and special freight transport;
- the information technology and its application to the transportation sector with regard to the fundamentals of the intelligent transportation systems (ITS);
- the transport data collection methods with regard to transport surveys, big data and transport planning and analysis techniques;
- the concept of smart transportation and its importance for the future development;
- the concept of smart cities and its functions;
- the concept of sustainable mobility and the way it affects the transformation of the transport sector;
- the significance of the environmental impacts of the transportation sector.

Course Content:

- Transportation Planning Process
- Corridor Planning and EU Transport Policy
- Travel Characteristics and Data
- Travel Demand and Modelling
- Urban Land Use and Transportation
- Planning for Public Transportation
- Planning for Pedestrians and Bicyclists
- Planning for Parking
- Planning for Freight Transport
- Transportation and Environmental Considerations
- Sustainable Mobility
- Smart Transportation and Smart Cities
- Intelligent Transportation Systems (ITS) and Big Data.

Learning Activities and Teaching Methods:

Lectures, in-class examples and exercises, homework assignments.

Assessment Methods:

Mid-term exam(s), Project assignment, Final exam (comprehensive).

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Transportation Planning Handbook	Michael M. Meyer	John Wiley & Sons,	2016	978-1118762400
The Geography of Transport Systems	Jean-Paul Rodrigue	Routledge, New York	2017	978-1138669574

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Transportation Planning and Traffic Engineering	CA O" Flaherty	Elsevier Ltd., Oxford, UK	2006	978-0340662793
Traffic and Highway Engineering	Garber Nicholas and Hoel Lester	Brooks/Cole Publishing	2002	978-0495082507