CIVIL-455  Transportation economics  de Palma André Jean-Louis Julien, Geroliminis Nikolaos

Summary
The scope of the lecture is to provide the basic concepts in transport economics and introduce new ones for private and public transport and environmental issues. Demand, supply, welfare analysis and regulation will be illustrated.

Content
- Foundation of microeconomics: consumer behaviour, firm behaviour, cost functions, equilibrium, optimum, perfect and imperfect competition, and regulation, in classical economics and in the new economic world.
- Transport in Europe and in the world, passenger and freight. Urban development.
- Externalities: environmental externalities, accidents. Local and global pollution. Instruments and regulation.
- LUTI Models. Modeling interactions between residential location, job and firm location, real estate prices, urban development, and transportation. Partial and general equilibrium.

Keywords
transport economics, equilibrium, Rational behaviour, competition, pricing, externalities

Learning Prerequisites
Required courses
Transportation Systems Engineering (GC-351) or Consent of the Instructor

Learning Outcomes
By the end of the course, the student must be able to:
- Design multimodal systems
- Analyze equilibrium models
- Assess / Evaluate consumer behaviour
• Demonstrate knowledge in transport economics
• Develop discrete choice models
• Illustrate environmental externalities
• Investigate cost benefit analysis

Transversal skills
• Plan and carry out activities in a way which makes optimal use of available time and other resources.
• Evaluate one's own performance in the team, receive and respond appropriately to feedback.
• Access and evaluate appropriate sources of information.
• Collect data.
• Demonstrate a capacity for creativity.

Assessment methods
30% Midterm
40% Final exam
30% Laboratory/group projects

Resources
Bibliography
Lecture notes and book chapters will be distributed during the semester