

CIVIL-355

Introduction to transportation systems

Bierlaire Michel

Cursus	Sem.	Type
Civil Engineering	BA4	Obl.

Language of teaching	English
Credits	3
Session	Summer
Semester	Spring
Exam	During the semester
Workload	90h
Weeks	14
Hours	3 weekly
Courses	2 weekly
Exercises	1 weekly
Number of positions	

Summary

The course provides an introduction to the design and analysis of transportation systems for the mobility of people and goods.

Content

- Introduction
- Fundamentals
- Value of time
- Mathematical modeling
- Travel demand & Networks
- Assignment
- Congestion pricing
- Logistics
- Cost benefit analysis

Keywords

Transportation & Mathematical models

Learning Prerequisites**Required courses****Important concepts to start the course**

Regression, Optimization

Learning Outcomes

By the end of the course, the student must be able to:

- Assess / Evaluate ability to assess transportation systems through advanced modeling techniques.

- Formalize the course aims to develop skills in formalizing complex transportation networks and policies to enhance operational efficiency and strategic planning.
- Interpret Students will learn to interpret data from transportation models to make informed decisions on infrastructure investments and policy development.

Transversal skills

- Plan and carry out activities in a way which makes optimal use of available time and other resources.
- Use a work methodology appropriate to the task.
- Take account of the social and human dimensions of the engineering profession.
- Access and evaluate appropriate sources of information.

Teaching methods

The course will consist in ex-cathedra lectures and exercises.

Assessment methods

Written exam at the end of the semester.

Supervision

Office hours	No
Assistants	Yes
Forum	Yes

Resources

Virtual desktop infrastructure (VDI)

No

Moodle Link

- <https://go.epfl.ch/CIVIL-355>