CIVIL-351 | Transportation systems engineering I

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**Cursus**

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<th>Génie civil</th>
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<td>Mineur en Développement territorial et urbanisme</td>
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**Language** | English
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**Credits** | 4
**Session** | Winter
**Semester** | Fall
**Exam** | During the semester
**Workload** | 120h
**Weeks** | 14
**Hours** | 4 weekly
  - Lecture 3 weekly
  - Exercises 1 weekly
**Number of positions**

### Summary

- Introduce the major elements of transportation systems and create awareness of the broader context
- Develop basic skills in applying the fundamentals of the transportation field
- Understand the key concepts and physics of the transport phenomena
- Connect with real transportation problems

### Content

**Transportation Systems and Mobility:**
- Mobility - Activities - Land Use, Classification-Hierarchy - Multimodality-Urban Planning

**Demand:**
- Demand analysis, Travel Forecasting (4-step models)

**Modeling and Operations:**
- Basic assessment tools - Traffic flow modeling, Control and capacity of transport systems

**Design of multimodal systems:**
- Urban Policy, Case Studies, Intro to bus operations

### Teaching methods

Ex-cathedra with assisted exercises, course group projects

### Assessment methods

- Midterm 30%
- Final Exam 40%
- Laboratories 30%

### Resources

**Bibliography**
- Lecture notes, book chapters and handouts will be distributed throughout the semester, or posted on web.

### Prerequisite for

- Master classes in Transportation