

HUM-124(b)

**Global issues: mobility B**

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Cursus	Sem.	Type
Humanities and Social Sciences	BA2	Obl.

Language of teaching	English
Coefficient	2
Session	Summer
Semester	Spring
Exam	During the semester
Workload	60h
Weeks	14
<b>Hours</b>	<b>2 weekly</b>
Lecture	2 weekly
<b>Number of positions</b>	<b>159</b>

**Remark**

Une seule inscription à un cours Enjeux mondiaux. En cas d'inscriptions multiples elles seront toutes supprimées sans notification.

**Summary**

Human and freight mobility in large cities is a complex process with dense population and many transport modes to compete for limited space. New emerging modes of transport, such as on-demand services, and new technologies, such as autonomous vehicles, create additional opportunities and challenges.

**Content**

- Introduction to the global issue of mobility
- Logistics Systems
- Public Transportation
- On demand transportation
- Artificial Intelligence (AI) in transportation
- Car-sharing systems
- Traffic management
- Monitoring of congestion
- Traffic data
- Motility and transport behavior
- Modal choice
- Land use planning and mobility

This course presents the global issue of Mobility. Human and freight mobility in large cities is a complex process with high density of population, many transport modes to compete for limited available space and many operators that try to efficiently manage flows of products and passengers. New emerging modes of transportation, such as on-demand services, and new technologies, such as autonomous vehicles, create additional opportunities and challenges. The interdisciplinary approach integrates SHS with engineering sciences and introduces students to working in teams and to scientific methodologies.

The ability to work as part of an interdisciplinary team on a shared project is an essential skill for engineers, architects and scientists. The course will focus more on introducing the challenges associated with the mobility of passengers and products in large cities and will give less emphasis in the methodologies. Students will be introduced to the process of team formation and development, and to how to use differences within the team to good effect. Students will also be introduced to project management, and to basic skills in making verbal and visual presentations. Searching for, accessing, and managing information is also a fundamental competence. Students will be introduced to how to source and access literature and data, and to how to appropriately reference source material.

**Learning Prerequisites**

**Required courses**

None

**Recommended courses**

None

**Important concepts to start the course**

None

**Learning Outcomes**

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

- Define the concept of « global issues » and describe it with reference to a number of examples
- Describe the challenges, opportunities and ethical issues related to science and technologies approaches of global issues
- Take into consideration the inter-relationships between social and human sciences and engineering sciences in global issues
- Sketch and generate potential solutions to a problem related to a global issue, taking into account natural, social, cultural, political or economic dimensions of the problem, as appropriate
- Identify potential consequences of their solution
- Respond to questions

**Transversal skills**

- Set objectives and design an action plan to reach those objectives.
- Communicate effectively with professionals from other disciplines.
- Identify the different roles that are involved in well-functioning teams and assume different roles, including leadership roles.
- Keep appropriate documentation for group meetings.
- Negotiate effectively within the group.
- Resolve conflicts in ways that are productive for the task and the people concerned.
- Access and evaluate appropriate sources of information.
- Design and present a poster.

**Teaching methods**

Lecture and teamwork

Videos and activities in moodle

**Expected student activities**

Progress report and poster

**Assessment methods**

Continuous assessment

Written exam of the question/essay type

Design and present the poster in a group.

**Supervision**

Office hours

No

Assistants

Yes

Forum Yes

## **Resources**

### **Références suggérées par la bibliothèque**

- [Enjeux mondiaux : ressources documentaires / Bibliothèque EPFL](#)

### **Moodle Link**

- [https://go.epfl.ch/HUM-124\\_b](https://go.epfl.ch/HUM-124_b)