



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Sustainable mobility [S2TIIZM1E>ZM]

Course

Field of study

Information Technology for Smart and Sustainable Mobility

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

second-cycle

Course offered in

English

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

32

Laboratory classes

0

Other

0

Tutorials

16

Projects/seminars

0

Number of credit points

4,00

Coordinators

dr inż. Paweł Zmuda-Trzebiatowski

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Lecturers

Prerequisites

Basic knowledge of sustainability concepts is recommended but not required

Course objective

In a sustainable mobility course, students consider a broad spectrum of topics revolving around transportation and its impacts on the environment, society, and economy.

Course-related learning outcomes

Knowledge:

The student has well-structured and theoretically grounded general knowledge related to key issues in the field of multimodal mobility, including micromobility, sustainable urban freight transport, and is familiar with the principles of urban planning and the design of city development strategies and transport networks that support pedestrians, cyclists, and public transport infrastructure

The student has knowledge of development trends and the most significant recent achievements in mobility, with particular emphasis on urban mobility

Skills:

The student is able to critically analyze existing technical solutions and propose improvements in the field of urban mobility and sustainable freight logistics

The student is able-when formulating and solving engineering tasks-to integrate knowledge from various fields of transport and social sciences and apply a systems approach that also considers non-technical aspects

Social competences:

The student understands the importance of dissemination activities related to the latest achievements in transport systems, and is ready to initiate actions for the benefit of the local community and the public interest

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written exam and group project.

Programme content

Definition of sustainable mobility, understanding its principles, and recognizing its importance in contemporary contexts. Diverse transportation systems including multimodal mobility solutions, micromobility, sustainable movement of freight within urban areas. Principles of urban planning and design of strategies for urban development and transportation networks conducive to walking, cycling, and public transit infrastructure. Transport policies, land use policies as well as incentives affecting user behavior. Basic methods of assessment of the sustainability level of transport systems, e.g. based on CO2 emission calculations, as well as problems and limitations related to these methods.

Course topics

- 1.Introduction to Sustainable Mobility
- 2.Sustainable mobility planning
- 3.Green Public Procurement & Mobility
- 4.Rational car use
- 5.Public transport
- 6.Micromobility and pedestrian commuting
- 7.Multimodal mobility
- 8.Other mobility best practices
- 9.Sustainable urban logistics

Teaching methods

The course is conducted remotely (online) in a synchronous format. Classes may also be held in person.

Interactive lectures with multimedia presentations

Case studies and practical examples. Individual work and group work.

Bibliography

Basic:

Rodrigue J.-P.: The Geography of Transport Systems, FIFTH EDITION, 2020, New York: Routledge
U-MOB Training Course. Sustainable Mobility Management at Universities

Additional:

Gonzalez-Feliu J., Semet F., Routhier J. (eds.) (2014) Sustainable urban logistics: concepts, methods and information systems. Springer Science+Business Media. Springer-Verlag.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	48	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	52	2,00