



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Sustainable transport planning

### Course

Field of study

Year/Semester

Transport

2/3

Area of study (specialization)

Profile of study

Sustainable transport

general academic

Level of study

Course offered in

Second-cycle studies

English

Form of study

Requirements

full-time

elective

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

15

15

Tutorials

Projects/seminars

### Number of credit points

2

### Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

dr inż. Szymon Fierek

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### Prerequisites

Students have elementary knowledge about transport systems, principles of planning, operating and management.

Student can solve particular problems occurring in transport systems using optimization and simulation methods.

Student can cooperate in a group and define priorities important for solving appointed problems.

### Course objective

Providing students with knowledge in the field of planning transport systems with an emphasis on



sustainable development, relations between subsystems, connections and interdependencies with spatial development.

### Course-related learning outcomes

#### Knowledge

Student has advanced and detailed knowledge of the processes taking place in the life cycle of transport systems

Student knows advanced methods, techniques and tools used in solving complex engineering tasks and conducting research in a selected area of transport

#### Skills

Student is able to plan and carry out experiments, including measurements and simulations, interpret the obtained results and draw conclusions, as well as formulate and verify hypotheses related to complex engineering problems and simple research problems

Student is able to assess the utility of methods and tools for solving an engineering task consisting in the construction or assessment of the transport system or its components, including the limitations of these methods and tools.

#### Social competences

Student understands that in the field of transport engineering, knowledge and skills quickly become obsolete.

Student understands the importance of popularizing the latest achievements in the field of transport engineering

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written test

Assessment of assignments

### Programme content

1. The essence of the problems of planning transport networks and road traffic forecasting. Basic concepts. Basic planning documents.
2. Land-use and transport planning:
  - o The processes of land-use planning and design of the transport system
  - o Transport systems at various spatial scales
  - o Interaction between transport system planning and land-use planning
  - o Urban road network and street classification



o Basics of planning a public transport network

3. Spatial and transport policy at various spatial scales

4. Planning of the urban road network - functional, structural, ecological and economic-implementation principles

5. Planning transport services in city centers and restricted areas.

6. Mass transit services in the city

7. Planning transport services in housing estates.

8. Planning parking systems.

### Teaching methods

Lecturing, Classroom discussion, Project-Organized Problem-Based Learning, Case studies.

### Bibliography

Basic

1. Button, K.J. and Hensher, D.A.: Handbook of Transport Systems and Traffic Control (, Vol. 3), Emerald Group Publishing Limited, 2001.

2. O'flaherty C.A.: Transport Planning and Traffic Engineering. CRC Press LLC, 2018.

Additional

1.Richardson, Anthony J, Elizabeth S. Ampt, and Arnim H. Meyburg. Survey Methods for Transport Planning. Melbourne, Vic., Australia: Eucalyptus Press, 1995.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for tests) <sup>1</sup>	30	1,0

<sup>1</sup> delete or add other activities as appropriate