



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Transport infrastructure [S1Trans1>IT]

### Course

Field of study

Transport

Year/Semester

1/2

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

2,00

### Coordinators

dr hab. inż. Marek Waligórski prof. PP  
marek.waligorski@put.poznan.pl

### Lecturers

dr hab. inż. Marek Waligórski prof. PP  
marek.waligorski@put.poznan.pl

### Prerequisites

Knowledge: the student has a basic knowledge of the design, construction and operation of transport infrastructure, taking into account its various forms, depending on the type of transport. One has knowledge in the area of transport system-infrastructure-national economy, socio-economic, technical and communication links between the considered elements of the system structure, design and modeling of transport and infrastructure, using PTV Visum tools. Skills: the student is able to integrate the obtained information, interpret it, draw conclusions, formulate and justify opinions, use the acquired knowledge in practice and pass it on to other people. He can also combine the acquired knowledge with the knowledge gained in other subjects related to the field of Transport knowledge, use it to create his own models (e.g. with the use of PTV Visum) and during research work. Social competences: the student is aware of the importance of the transferred technical knowledge and understands the non-technical aspects and effects of transport activities in terms of transport infrastructure.

### Course objective

equipping students with knowledge and skills in the field of transport technical infrastructure, including various types of transport activities.

### Course-related learning outcomes

#### Knowledge:

Student has a structured and theoretically founded general knowledge in the field of key issues of technology and detailed knowledge of selected issues in this discipline of transport engineering

One has a basic knowledge of the life cycle of means of transport, both hardware and software, and in particular about the key processes taking place in them

Student knows the basic concepts of economics, relating in particular to transport investments

#### Skills:

Student can assess - at least in a basic scope - various aspects of the risk associated with a transport project

One can design elements in the field of transport engineering and construct simple machines

#### Social competences:

Student can think and act in an entrepreneurial way, incl. finding commercial applications for the created system, taking into account not only business benefits, but also social benefits of the conducted activity

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

Final test

Ongoing verification of the assimilation of knowledge proving the understanding of subsequent subject areas within the lecture subject.

### Programme content

Introduction to the issues of transport infrastructure

Road transport infrastructure

Railway transport infrastructure

Water transport infrastructure

Air transport infrastructure

Application of PTV Visum for transport and infrastructure modeling

### Teaching methods

1. Lecture with multimedia presentation
2. Solving problem issues with the participation of students (problem, case and simulation method)
3. Elements of discussion and exercise-practical methods
4. Elements of transport and infrastructure modeling (PTV Visum)
5. Including communication methods and tools (also in a multicultural environment) in the transmission of program content and dialogue with students (POWR.03.03.00-IP.08-00-P14/18)

### Bibliography

Basic

1. Wojewódzka-Król K., Rolbiecki R., Transport infrastructure, Polish Scientific Publishers PWN, 2018.
2. Rydzkowski W., Wojewódzka-Król K., Transport, PWN, Warsaw 2017.
3. Basiewicz T., Gołaszewski A., Rudziński L., Transport infrastructure, Publishing House of the Warsaw University of Technology, Warsaw 2007.
4. Towpik K., Gołaszewski A., Kukulski J., Infrastructure of car transport, Publishing House of the Warsaw University of Technology, Warsaw 2013.
5. Towpik K., Infrastructure of rail transport, Oficyna Wydawnicza Politechniki Warszawskiej, Warsaw 2017.
6. Wojewódzka-Król K., Development of transport infrastructure, UG, Gdańsk 2002.
7. Rydzkowski W., Contemporary transport policy, Polskie Wydawnictwo Ekonomiczne, Warsaw 2017.
8. Pawłowska B., Transport infrastructure and the competitiveness of regions in the European Union, Publishing House of the University of Gdańsk, Gdańsk 2015.

Additional

1. Koźlak A., Ekonomika transportu. Teoria i praktyka gospodarcza, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2010

2. Tomanek R., Funkcjonowanie transportu, AE, Katowice 2004.
3. Mendyk E., Ekonomia transportu, WSL, Poznań 2009.
4. Szymonik A., Ekonomia transportu dla potrzeb logistyka. Teoria i praktyka, Difin, 2013.
5. Rydzikowski W., Przewozy intermodalne, Instytut Logistyki, 2015.
6. Ruciński A., Planowanie i lokalizacja sieci regionalnych portów lotniczych, Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 1986.
7. Misztal K. Organizacja i funkcjonowanie portów morskich. Wydawnictwo Uniwersytetu Gdańskiego, 2010.

### Breakdown of average student's workload

	Hours	ECTS
Total workload	55	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	25	1,00