



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Economics and organization of transport

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### Course

Field of study

Logistics

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

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### Number of hours

Lecture

30

Tutorials

15

Laboratory classes

Projects/seminars

Other (e.g. online)

### Number of credit points

5

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### Lecturers

Responsible for the course/lecturer:

Ph.D., Eng. Mirosław Kruszyński

Mail to: [miroslaw.kruszynski@put.poznan.pl](mailto:miroslaw.kruszynski@put.poznan.pl)

Phone: 61 665 33 99

Faculty of Engineering Management

ul. J. Rychlewskiego 2, 60-965 Poznań,

Responsible for the course/lecturer:

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### Prerequisites

The student she/he is starting this subject should have basic knowledge in the field of economics and



transport as well as the functioning of the economy and its management. The student she/he should also be able to obtain information from the sources indicated and be willing to cooperate as part of a team. The student she/he demonstrates awareness and understands the importance / role of non-technical aspects and effects of engineering activities, including its impact on the environment, and the associated responsibility for the decisions taken. The student she/he is able to interact and work in a group, assuming different roles in it. She/he can think and act in an entrepreneurial manner.

### Course objective

Providing The students she/he with basic knowledge in the field of economics and organization of transportation, indicating the basic problems in the transportation economy and the ability to analyze and evaluate (optimize) selected processes in the field of transportation work

### Course-related learning outcomes

#### Knowledge

1. The student she/he knows the basic management issues specific to logistics and supply chain management [P6S\_WG\_08]
2. The student she/he knows the basic relations between the technical and economic sphere characteristic for logistics and supply chain management [P6S\_WK\_01]

#### Skills

1. The student she/he is able to apply the proper experimental and measurement techniques to solve the problem within the studied subject, including computer simulation within logistics and its detailed issues, and supply chain management [P6S\_UW\_03]
2. The student she/he is able to assess and make a critical economic analysis of the selected problem, which falls within the framework of logistics and its specific issues and supply chain management [P6S\_UW\_06]
3. The student she/he is able to choose the right tools and methods to solve the problem within the logistics and supply chain management, and to use them effectively [P6S\_UO\_02]
4. The student she/he is able to identify changes in requirements, standards, regulations, technical progress and the reality of the labor market, and based on them determine the needs to supplement knowledge [P6S\_UU\_01]

#### Social competences

1. The student she/he is able to plan and manage in an entrepreneurial manner [P6S\_KO\_01]
2. The student she/he is aware of initiating activities related to the formulation and transfer of information and cooperation in society in the field of logistics [P6S\_KO\_02]
3. The student she/he is aware of cooperation and group work on solving problems within logistics and supply chain management [P6S\_KR\_02]



## Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: the acquired knowledge is verified on the basis of answers to the questions concerning the material discussed in the lectures and credit based on two tests (from 20 to 30 questions each) - answers to closed multiple-choice questions; passing is possible after obtaining a minimum of 60% of points from each test in the first and second attempt.

Classes: on the basis of the assessment of the current progress in the implementation of tasks (work independently and in groups, expressing one's own views and opinions) and passing a short test with a few closed questions, multiple choice and solving several tasks in writing passing is possible after obtaining a minimum of 60% of points in the first and second attempt.

## Programme content

The course program includes the following issues: 1) The essence of transport and transport economics; place of transport economics in the system of sciences; 2) The role and importance of transport in the national economy; 3) Production factors, 4) Classification and organization of transport; characteristics of the transport branch; 5) Transport infrastructure and suprastructure; 5) Transport needs and services; 6) Management in transport branches; 7) Urban transport; 8) Intermodal transport; Service areas and location of transport centers; 9) The role of transport in the supply chain; 10) transport process and its elements; Analysis and methods of evaluation of transport processes; 11) transport company and its operational characteristics; 12) Prices, tariffs, taxes and charges in transport activities; 13) Costs of transport activities; 13) Technical speed, operational speed, vehicle operation time, driving time of the driver; 14) Load capacity utilization, vehicle duty cycle, mileage utilization, transport performance; 15) Transport resource planning, transport fleet, intermodal transport, driver's working time; 16) Maximum flow / maximum capacity in the transport network, shortest route, optimal allocation; 17) Pallet loading units, pallet load capacity, load stacking on a pallet, load height; 18) SWOT analysis of selected transport branches.

## Teaching methods

In the scope of lectures: multimedia presentation illustrated with examples.

In terms of independent work: work with a book.

In terms of exercises: multimedia presentation illustrated with examples, solving tasks / examples on the blackboard, performing tasks given by the teacher - practical exercises.

## Bibliography

Basic

1. Economics of transportation, Edward Mendyk, Wyższa Szkoła Logistyki, Poznań, 2009
2. Transportation in the economy, Anita Fajczak-Kowalska, Akademicka Oficyna Wydawnicza EXIT, Warsaw, 2018
3. Intermodal transportation in supply chains - organizational, technical and economic conditions, Tomasz Rokicki, SGGW Publishing House, Warsaw, 2018



4. Economics of transportation for logistics (i). Theory and Practice, Adam Szymonik, Difin, Warsaw, 2013
5. Economic and organizational aspects of transportation, Ilona Urbanyi-Popiołek, Piotr Lewandowski, Violetta Jendryczka, Krystian Pietrzak, Oliwia Pietrzak, Dariusz Bernacki, University Publishing House of the University of Economy in Bydgoszcz, Bydgoszcz, 2013
6. Transportation and forwarding, Tomasz Wierzejski, Małgorzata Kędziora-Laskowska, EXPOL, P. Rybiński, J. Dąbek, sp.j., University of Warmia and Mazury in Olsztyn, Olsztyn, 2014
7. Transportation, Włodzimierz Rydzkowski, Krystyna Wojewódzka-Król, PWN Scientific Publishing House, Warsaw, 2009

#### Additional

1. Urban transportation. Economics and organization, Olgierd Wyszomirski, University of Gdańsk Publishing House, Gdańsk, 2008
2. Determinants of the development of the Polish transportation system, Bogusław Liberacki, Leszek Mindura, Publisher of the Institute of Exploitation Technology - National Research Institute, Warsaw - Radom, 2007
3. Multi-criteria decision support in road transport, Jacek Żak, Poznań University of Technology Publishing House, Poznań, 2005
4. Economics of Logistics, Teresa Truś, Wydawnictwo Difin, 2010.
5. Methodology of multi-criteria decision support in the issues of urban transport management, Mirosław Kruszyński, doctoral dissertation, Poznan, 2014

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for tutorials, preparation for tests) <sup>1</sup>	80	3,0

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