COURSE DESCRIPTION CARD - SYLLABUS

Course name
Urban Rail Transit [N2Trans1-TrSz>STM]

Course

Field of study
Transport

Year/Semester
1/2

Area of study (specialization)
Railway Transport

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
18

Laboratory classes
0

Other
0

Tutorials
9

Projects/seminars
0

Number of credit points

3,00

Coordinators

dr hab. inż. Bartosz Firlik prof. PP
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Lecturers

Prerequisites

Knowledge: The student has basic knowledge of the construction of rail vehicles and the organization of transport Skills: The student is able to solve specific problems appearing in technical systems Social competences: in technical systems: The student is able to cooperate in a group, assuming various roles in it. The student is able to determine the priorities important in solving the tasks set before him.

Course objective

Getting knowledge about urban transport systems existing in Poland and worldwide, as well as about the construction, design and operation of urban rail transport vehicles (tramway, metro, train)

Course-related learning outcomes

Knowledge:
1. Has a structured and theoretically founded general knowledge related to key issues in the field of transport engineering
2. Has knowledge of development trends and the most important new achievements of means of transport and other selected, related scientific disciplines

Skills:
1. Can obtain information from literature, databases and other sources (in Polish and English), integrate them, interpret and critically evaluate them, draw conclusions and formulate and exhaustively justify opinions
2. Can use information and communication techniques used in the implementation of projects in the field of transport
3. Can - using, among others conceptually new methods - solve complex tasks in the field of transport engineering, including atypical tasks and tasks with a research component

Social competences:
1. Understands the importance of using the latest knowledge in the field of transport engineering in solving research and practical problems

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
The final grade takes into account both the grade from the written exam as well as the student"s activity during the classes and preparation for them.

Programme content

The development of urban transport in Poland and abroad. Main tasks and needs of urban rail transit. Manufacturers, research institutes and specific rail rolling stock construction and design. Classification of light rail vehicles. Principles of operation and general information about the design and construction of light rail vehicles. Structural and operating requirements of light rail vehicles. Advantages and disadvantages of various transport systems and vehicles. Presentation of the loads acting on the vehicle and its components. Presentation of the principles of design and operation of modern light rail vehicles. Presentation of transport systems developed in Poland and worldwide. European Union and local transport authorities policies toward urban rail transport. Major problems of urban transport in European cities.

Course topics

Development, classification and comparison of urban rail transport systems in Poland and worldwide. Design, construction, operation and maintenance of trams, light rail vehicles, metro trains and urban railways. Vehicle loads and structural and operational requirements. Manufacturers and research institutions. EU and local transport policies, current challenges and development trends in European cities.

Teaching methods

1. Lecture with multimedia presentation
2. Exercises - solving problems

Bibliography

Basic
1. Wesołowski J.: Miasto w ruchu. Dobre praktyki w organizowaniu transportu miejskiego, Instytut Spraw Obywatelskich, Łódź 2008.
2. Wesołowski J.: Transport miejski. Instytut Spraw Obywatelskich, Łódź 2008.
3. Swolkień O.: Polityka transportowa. Instytut Spraw Obywatelskich, Łódź 2008.
Additional
Zielona Księga - W kierunku nowej kultury mobilności w mieście (Bruksela, wrzesień 2007 r., COM (2007) 551
Zaborowski Ł.: Tramwaj dla polskich miast. Instytut Sobieskiego 2018

Breakdown of average student's workload

	Hours	ECTS
Total workload	57	3,00
Classes requiring direct contact with the teacher	27	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,50