COURSE DESCRIPTION CARD - SYLLABUS

Course name
Vehicles and systems of urban rail transport [N2MiBP1-PSz>PiSSTM]

Course

Field of study
Mechanical and Automotive Engineering

Year/Semester
2/3

Area of study (specialization)
Railway Vehicles

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
9

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

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

Acquainting with the existing in Poland and in the world systems of public transport, as well as the structure (construction) and operation of public transport vehicles (trams, underground and buses).

Course-related learning outcomes

Knowledge:
Has basic knowledge about selected technologies of machine works in agriculture, construction, transport, food industry, etc.
He knows the main development trends in the field of mechanical engineering.
Is aware of the civilization effects of technology.

Skills:
He can design the technology of exploitation of a selected machine with a high degree of complexity.
Can communicate on specialist topics with a diverse audience.
Can lead the team"s work.

Social competences:
Is ready to recognize the importance of knowledge in solving cognitive and practical problems and to consult experts in case of difficulties in solving the problem on its own.
Is willing to think and act in an entrepreneurial manner.
Is ready to fulfill professional roles responsibly, taking into account changing social needs, including:
- developing the professional achievements,
- maintaining the ethos of the profession,
- observing and developing the rules of professional ethics and acting towards the observance of these rules.

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

Development of urban transport in the world and in Poland. Transport tasks and needs of urban transport. Producers, research centers and characteristic structures of Polish and foreign rail and road rolling stock. Classification of rail and road vehicles. Principles of operation and general information on the construction of traction vehicles and other vehicles. Construction requirements? consumables for vehicles. Advantages and disadvantages of individual urban transport systems. Presentation of loads acting on the vehicle and its components. Presentation of the basics of design and operation of modern rail and road vehicles. Presentation of urban transport systems developed in Poland and in the world. Introducing the policy of the European Union and local governments towards urban transport. Highlighting the main problems of urban transport in European cities.

Course topics

none

Teaching methods

Lecture with multimedia presentation

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
1. Zielona Księga - W kierunku nowej kultury mobilności w mieście (Bruksela, wrzesień 2007 r., COM (2007) 551
2. Zaborowski Ł.: Tramwaj dla polskich miast. Instytut Sobieskiego 2018

Breakdown of average student's workload

	Hours	ECTS
Total workload	15	1,00
Classes requiring direct contact with the teacher	9	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	6	0,50