



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Urban Rail Transit

Course

Field of study

Year/Semester

Transport

1/2

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

Tutorials

Projects/seminars

15

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

dr hab. inż. Bartosz Firlik

Responsible for the course/lecturer:

mgr inż. Julian Kominowski

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Prerequisites

Knowledge: The student has basic knowledge of the construction of rail vehicles and the organization of transport

Skills: Student is able to solve specific problems appearing in technical systems

Social competences: Student is able to cooperate in a group, assuming various roles and is able to determine the priorities important in solving tasks

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

Student has a structured and theoretically founded general knowledge related to key issues in the field of transport engineering

Student has knowledge of development trends and the most important new achievements of means of transport and other selected, related scientific disciplines

Skills

Student is able to 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

Student is able to use information and communication techniques used in the implementation of projects in the field of transport

Student is able, using among others conceptually new methods - to solve complex tasks in the field of transport engineering, including atypical tasks and tasks with a research component

Social competences

Student understands the importance of using the latest knowledge in the field of transport engineering in solving research and practical problems

Student is aware of transferring the acquired knowledge to the public, makes efforts to make this information understandable, presents various solutions and points of view

Methods for verifying learning outcomes and assessment criteria

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.

Teaching methods

Lecture: multimedia presentation



Tutorials: solving problems

Bibliography

Basic

1. Green Paper - Towards a new culture for urban mobility, Brussels 2007, COM/2007/0551 final
2. Urban Rail Transit open access journal
3. Bernick M. & Cervero R., Transit villages in the 21st century, McGraw-Hill, Incorporated 1997

Additional

1. Baum-Snow N., Kahn M., & Voith R. (2005). Effects of Urban Rail Transit Expansions: Evidence from Sixteen Cities, 1970-2000. Brookings-Wharton Papers on Urban Affairs, 147-206.

<http://www.jstor.org/stable/25067419>

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for exam, preparing for tutorials) ¹	45	1,5

¹ delete or add other activities as appropriate