## POZNAN UNIVERSITY OF TECHNOLOGY



EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS) pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

# **COURSE DESCRIPTION CARD - SYLLABUS**

Course name				
Standards and regulations for rail vehicles				
Course				
Field of study		Year/Semester		
Construction and Exploit	tation of Means of Transport	1/1 Profile of study general academic		
Area of study (specializa	tion)			
Railway Vehicles				
Level of study		Course offered in		
Second-cycle studies		Polish		
Form of study		Requirements		
full-time		compulsory		
Number of hours				
Lecture	Laboratory classes	Other (e.g. online)		
15	0	0		
Tutorials	Projects/seminars			
0	0			
Number of credit points	5			
1				
Lecturers				
Responsible for the cour mgr inż. Mateusz Motyl		sible for the course/lecturer:		
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Faculty of Civil Engineer	ing and Transport			

ul. Piotrowo 3, 60-965 Poznań

#### Prerequisites

The student has a basic knowledge of the construction and operation of rail vehicles. The student is able to solve specific problems in technical systems. The student shows independence in solving technical problems, gaining and improving the acquired knowledge and skills.

#### **Course objective**

The aim of the course is to get acquainted with the basic standards of technology and legal acts concerning rail vehicles.

#### **Course-related learning outcomes**

Knowledge



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1. Has general knowledge of standardization, EU recommendations and directives, national, industry and international standards systems, and industrial standards

2. Has an orderly, theoretically founded knowledge of technical and operational parameters of means of transport, knows the basic units and parts. He knows the life cycle of means of transport

3. Has knowledge in the field of technical operation, knows the technical and economic aspects of vehicle operation, selection of operating parameters, factors forcing changes in condition and types of damage

#### Skills

1. Can obtain information from literature, the Internet, databases and other sources, both in Polish and in foreign languages

2. Can communicate using various techniques in the professional environment, using the formal notation of a construction, technical drawing, concepts and definitions from the field of study

3. Can analyze objects and technical solutions, can search in catalogs and on manufacturers' websites ready components of machines and devices, assess their suitability for use

4. Can design the technology of making a simple handling system and the technology of assembly and disassembly of this system

#### Social competences

1. Understands the need and knows the possibilities of continuous training, knows the need to acquire new knowledge for professional development

2. Is aware of responsibility for their own work and is ready to submit to the principles of teamwork and responsibility for jointly performed tasks

3. Is aware of transferring the acquired knowledge to the public, makes efforts to make the information understandable

#### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows: Final test

#### **Programme content**

EU legislation.

Railway regulations.

Standards for the construction of wagons.

Standards for the approval and operation of wagons.

Construction and operation standards.



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Symbols on the wagons.

#### **Teaching methods**

Lecture: multimedia presentation, illustrated with examples given on the board.

#### Bibliography

Basic

- 1. Directives and EU regulations
- 2. The act on rail transport
- 3. Technical Specifications for Interoperability
- 4. PN-EN standards

Additional

#### Breakdown of average student's workload

	Hours	ECTS
Total workload	26	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	11	0,5

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