



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Vehicle maintenance technical facilities

### Course

Field of study

Mechanical and Automotive Engineering

Area of study (specialization)

Mass transport vehicles

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

3/6

Profile of study

general academic

Course offered in

polish

Requirements

elective

### Number of hours

Lecture

18

Laboratory classes

9

Other (e.g. online)

Tutorials

Projects/seminars

### Number of credit points

3

### Lecturers

Responsible for the course/lecturer:

mgr inż. Bartosz Kopec

Responsible for the course/lecturer:

mgr inż. Przemysław Filipowicz

### Prerequisites

The student has a basic knowledge of the technical infrastructure for vehicle maintenance and knows how to maintain them.

The student knows the regulations governing the maintenance process of rail and road vehicles, as well as facilities and equipment in the maintenance process and maintenance planning for rail and road vehicles.

### Course objective

The aim of the course is to familiarize the student with the organization of technical facilities for the maintenance of rail and road vehicles and the methods of servicing these vehicles.

### Course-related learning outcomes

Knowledge

Has basic knowledge of the basics of machine design and the theory of machines and mechanisms, including mechanical vibrations. -M1\_W05



Is aware of the latest trends in machine construction, i.e. automation and mechatronization, automation of machine design and construction processes, increased safety and comfort of operation, the use of modern construction materials. -M1\_W18

Has elementary knowledge of the life cycle of machinery, recycling of machine elements and construction and consumables. -M1\_W20

#### Skills

Can obtain information from literature, the Internet, databases and other sources. Can integrate the obtained information, interpret and draw conclusions from it, and create and justify opinions. -M1\_U01

Can use computer office packages for editing technical texts, including formulas and tables, technical and economic calculations using a spreadsheet and running a simple relational database. -M1\_U03

Can properly use modern equipment for measuring major physical quantities, used in machine research and production control. -M1\_U04

#### Social competences

Is ready to critically assess his knowledge and received content. -M1\_K01

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. -M1\_K02

Is willing to think and act in an entrepreneurial manner. -M1\_K05

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

Learning outcomes presented above are verified as follows:

Written or oral test.

#### Programme content

Organizational structure of rail freight transport of PKP CARGO S.A. and rolling stock resources, regulations governing the maintenance process of rail and road vehicles, the maintenance process of rail vehicles at PKP CARGO S.A. and in bus depots of MPK Poznań Sp. z o. o., infrastructure and equipment in the maintenance process, planning of rail and road vehicle maintenance, logistics.

#### Teaching methods

1. Lecture with multimedia presentation

#### Bibliography

Basic

1. Krawczyński F., Nielwodzki J.: Zaplecze techniczne służby trakcji PKP. WKŁ, Warszawa.

2. Gruszyński J.: Eksploatacja taboru kolejowego. WKŁ, Warszawa 1984.



Additional

1. Gronowicz J, Kasprzak B.: Lokomotywy spalinowe. WKŁ, Warszawa 1989.
2. Podwozia i nadwozia pojazdów samochodowych. WKŁ Warszawa 2010
3. Silniki pojazdów samochodowych. WKŁ Warszawa 2009

**Breakdown of average student's workload**

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	27	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	48	2,0

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