



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Vehicle maintenance technical facilities [S1MiBP1>ZTUP]

### Course

Field of study

Mechanical and Automotive Engineering

Year/Semester

3/6

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-cycle

Course offered in

Polish

Form of study

full-time

Requirements

elective

### Number of hours

Lecture

30

Laboratory classes

15

Other

0

Tutorials

0

Projects/seminars

0

### Number of credit points

3,00

### Coordinators

Bartosz Kopeć

### Lecturers

### 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:

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.

### Course topics

none

### 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    | 3,00 |
| Classes requiring direct contact with the teacher                                                                                       | 45    | 2,00 |
| Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation) | 30    | 1,00 |