



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Engineering of refurbishment of food and cooling devices [S2Trans1-TrCh>IOTŚTC]

### Course

Field of study

Transport

Year/Semester

1/2

Area of study (specialization)

Refrigerated Transport

Profile of study

general academic

Level of study

second-cycle

Course offered in

Polish

Form of study

full-time

Requirements

compulsory

### Number of hours

Lecture

15

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

15

### Number of credit points

3,00

### Coordinators

dr inż. Aleksandra Rewolińska

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### Lecturers

### Prerequisites

Knowledge: Basic knowledge of the design, technology and operation of machines. Skills: Logical thinking, using information obtained from the library and the Internet Social competences: Understands the needs of learning and acquiring new knowledge

### Course objective

Acquainting with methods of restoring the fitness of machines

### Course-related learning outcomes

Knowledge:

The student has advanced detailed knowledge of selected issues in the field of transport engineering

The student has advanced and detailed knowledge of the processes occurring in the life cycle of transport systems

Skills:

The student is able to correctly use the selected method of estimating the labor consumption of manufacturing technical objects

The student is able to make a critical analysis of existing technical solutions and propose their improvements (improvements)

The student is able to assess the usefulness of methods and tools for solving an engineering task consisting in the construction or evaluation of the transport system or its components, including the limitations of these methods and tools

Social competences:

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

### 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 test of the lecture and completion of the project

### Programme content

General characteristics of the truck fleet.

Characteristics of vehicle maintenance and repair systems.

Stages of the technological process of vehicle repair.

Washing vehicles, assemblies and parts.

Verification - assessment of the technical condition of vehicles.

Rules for dismantling vehicle assemblies and parts.

Methods of repairing vehicle assemblies and parts.

### Course topics

1. The lecture covers the following topics:

General characteristics of the truck fleet with particular emphasis on refrigerated trucks. This issue includes current knowledge about the truck fleet in the country, truck repair plants, and the labor market.

Characteristics of maintenance and repair systems and methods of repairing motor vehicles.

Stages of the technological process of vehicle repair. The issue includes discussion of individual stages of the process, such as: disassembly, verification, cleaning, repair, and assembly. Examples of technological repair processes.

Presentation of repair methods - replacement of parts, repair using mechanical processing, repair of parts using gluing, regeneration using spray metalization, repair of parts using welding methods, regeneration of parts using electroplating.

2. As part of the exercises, students develop detailed documentation of a selected technological process for repairing or servicing a selected element of an assembly or part.

### Teaching methods

1. Lecture with multimedia presentation

2. Exercise method (subject exercises, practice exercises) - in the form of auditorium exercises

### Bibliography

Basic

1. Nosal S., Inżynieria odnowy maszyn : wybrane zagadnienia – Wydanie I. – Poznań, 2017

2. Jósko M., Kowalczyk J., Mańczak R., Nosal S., Ulbrich D., Inżynieria odnowy pojazdów samochodowych, Tom 1 Inżynieria obsługi Poznań, 2019

3. Jósko M., kowalczyk J., Mańczak R., nosal S., Ulbrich D., Inżynieria odnowy pojazdów samochodowych, Tom 2 Inżynieria naprawy Poznań, 2019

4. Cypko J., Cypko E. Podstawy technologii i organizacji napraw pojazdów mechanicznych. WKiŁ, Warszawa 1989

5. Kostrzewa S., Nowak B. Podstawy regeneracji części pojazdów mechanicznych. WKiŁ, Warszawa, 1986

Additional

1. Klimpel A., Napawanie i natryskiwanie cieplne. Technologie, WNT, Warszawa, 2000

2. Adamiec P., Dziubiński P., Regeneracja i wytwarzanie warstw wierzchnich elementów maszyn

### Breakdown of average student's workload

|                                                                                                                                            | Hours | ECTS |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------|------|
| Total workload                                                                                                                             | 70    | 3,00 |
| Classes requiring direct contact with the teacher                                                                                          | 40    | 2,00 |
| Student's own work (literature studies, preparation for laboratory classes/<br>tutorials, preparation for tests/exam, project preparation) | 30    | 1,00 |