POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Operation of refrigeration equipment in transport [N2Trans1-TrCh>EUChwT]

Course

Field of study	Year/Semester
Transport	1/2
Area of study (specialization)	Profile of study
Refrigerated Transport	general academic
Level of study	Course offered in
second-cycle	Polish
Form of study	Requirements
part-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
9	9	0
Tutorials	Projects/seminars	
0	0	

Number of credit points

3,00

Coordinators	Lecturers
dr hab. inż. Arkadiusz Stachowiak prof. PP arkadiusz.stachowiak@put.poznan.pl	

Prerequisites

KNOWLEDGE: Has a general knowledge of the structure and operation of a compressor refrigeration device. SKILLS: Can identify the basic components of a compressor refrigeration device (solutions for food transport). SOCIAL COMPETENCES: Ability to lead a team and expand team knowledge.

Course objective

Developing the ability to diagnose and repair compressor refrigeration equipment used in food transport.

Course-related learning outcomes

Knowledge:
Student has advanced and detailed knowledge of the processes occurring in the life cycle of transport systems
Student has knowledge of ethical codes related to scientific and research work in the field of transport engineering
Student knows the economic, legal and other conditions of the operations of transport companies

Skills:

Student is able - when formulating and solving engineering tasks - to integrate knowledge from various areas of transport (and, if necessary, also knowledge from other scientific disciplines) and apply a systemic approach, also taking into account non-technical aspects
Student is able to assess the usefulness and possibility of using new achievements (methods and tools) and new products of transport technology

Social competences:
Student understands that knowledge and skills become obsolete very quickly in the field of transport engineering
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:
The knowledge acquired during the lecture is verified on the basis of a written exam in the form of a test. The skills acquired during the classes are verified on the basis of a final test in the form of a written test and obligatory individual reports on laboratory classes.

Programme content

Methods and tools for controlling work parameters of cooling systems. The most common cause of performance loss in compressor refrigeration equipment. Ecological and economic effects of loss of performance in refrigeration systems. Checking the tightness of compressor refrigeration equipment (legal requirements, implementation methods). Filling, emptying refrigeration systems. Odzyck, regeneration and utilization of refrigerants. Requirements for personnel servicing refrigeration equipment.

Course topics

Teaching methods

Information and problematic lecture with a multimedia presentation. Laboratory exercises - problem solving, laboratory (experiment) method.

Bibliography

Basic
1. Bonca Z. Automatyka chłodnicza i klimatyzacyjna. Wyd. WSM Gdynia 1995.
2. Ullirch H.J., Technika chłodnicza - poradnik. IPPU MASTA, Gdańsk 1998.
3. Czapp M., Charun H., Bohdal T. Wielostopniowe urządzenia chłodnicze WSI Koszalin 1994
4. B. Gaziński, Technika chłodnicza dla praktyków, Systherm Serwis, Poznań 2005
Additional
1. B. Gaziński Klimatyzacja pojazdów samochodowych, Systherm Serwis, Poznań 2016

Breakdown of average student's workload

	Hours	ECTS
Total workload	48	3,00
Classes requiring direct contact with the teacher	18	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	30	1,50