



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Refrigeration and air conditioning equipment

Course

Field of study

Construction and Exploitation of Means of Transport

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/4

Profile of study

general academic

Course offered in

polish

Requirements

compulsory

Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

0

Tutorials

0

Projects/seminars

0

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

prof. dr hab. inż. Krzysztof Bieńczak

Responsible for the course/lecturer:

Faculty of Civil and Transport Engineering

Prerequisites

Knowledge: Has a general knowledge of the impact of technical facilities and technologies on the environment

Skills: Is able to define categories of threats to the environment that are a specific technological process implemented in the field of production and operation of food machinery and refrigeration equipment and indicate ways of counteracting these threats.

Social competences: Work in an interdisciplinary team. Ability to lead a team and expand team knowledge

Course objective

Learning the basic principles of building refrigeration, air conditioning and heating devices

Course-related learning outcomes

Knowledge

1. Has extended basic knowledge necessary to understand specialist subjects and specialist knowledge



of the construction, construction methods, manufacturing and operation of a selected group of working, transport, thermal and flow machines covered by the WILiT specialization profile

2. Has elementary knowledge of the life cycle of machinery, recycling machine components and construction and consumables

Skills

1. Can obtain information from literature, the Internet, databases and other sources. Is able to integrate the obtained information, interpret and draw conclusions from it, as well as create and justify opinions

2. Has the ability to self-educate with the use of modern didactic tools, such as remote lectures, Internet websites and databases, teaching programs, e-books

Social competences

He is ready to critically assess his knowledge and received content

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Final tests

Programme content

Principles of construction of cooling, air-conditioning and heating devices used in means of transport in order to ensure appropriate temperature conditions. Characteristics of the basic components of refrigeration, air conditioning and heating devices (compressors, heat exchangers, valves, safety elements). Refrigerants. Environmental aspects of using refrigerants.

Teaching methods

lecture with presentation, experimental classes

Bibliography

Basic

1. B. Gaziński Klimatyzacja pojazdów samochodowych, Systherm Serwis, Poznań 2016
2. B. Gaziński, Chłodnictwo dla praktyków, Systherm Serwis, Poznań 2013
3. S. Kwaśniewski, Pojazdy chłodnicze i izotermiczne, Nawigator, Wrocław 1997

Additional

1. K. Kalinowski, Amoniakalne urządzenia chłodnicze tom.1 i 2, Masta, Gdansk 2005



Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	30	1,0
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) ¹	30	1,0

¹ delete or add other activities as appropriate