



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Technical equipment for environmental protection

Course

Field of study

Year/Semester

Construction and Exploitation of Means of Transport

2/3

Area of study (specialization)

Profile of study

Food Industry Machines and Refrigeration

general academic

Level of study

Course offered in

Second-cycle studies

Polish

Form of study

Requirements

part-time

compulsory

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

9

0

0

Tutorials

Projects/seminars

0

0

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

dr Zuzanna Sydow

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Faculty of Civil and Transport Engineering

ul. Piotrowo 3, 60-695 Poznań

Prerequisites

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

Skills: Can define the categories of threats to the environment of a specific technological process implemented in the area of production and operation of food machines and refrigeration devices and indicate ways to counteract these threats.

Social competences: Is aware of the importance and understands the non-technical aspects and effects of an engineer's activity..

Course objective

Acquainting with basic devices used in environmental protection as well as control and measurement apparatus.



Course-related learning outcomes

Knowledge

1. Has general knowledge of standardization, EU recommendations and directives, national, international and industrial standards systems.
2. Has in-depth knowledge of the construction and principles of operation as well as classification of machines from a selected group.

Skills

1. Can advise on the selection of machines for the technological line within the group of machines covered by the specialization..

Social competences

1. Is ready to critically assess the knowledge and content received.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Current control of the mastery of the lecture content. Written test at the end of the semester.

Programme content

Critical review and discussion of technical devices in the protection of atmospheric air, devices for water protection, including sea protection, installations for water and sewage treatment, and technologies for soil protection against pollution. Analysis and reduction of industrial and traffic noise. Machines and devices in waste management. Devices used in rational energy management, possibilities of using renewable energy sources. Regeneration and utilization processes and the corresponding machines. Devices and apparatus for monitoring the state of the environment.

Teaching methods

Lecture with multimedia presentation

Bibliography

Basic

1. Kłós Z., Feder S. Ochrona środowiska w budowie maszyn i transporcie. Wyd. PP, Poznań 2002
2. Wielgosiński G., Zarzycki R., Technologie i procesy ochrony powietrza, Wydawnictwo Naukowe PWN 2018
3. Chełmicki W., Woda. Zasoby, degradacja, ochrona, Wydawnictwo Naukowe PWN, 2019
4. Bilitewski B., Hardtle G., Marek K., Podręcznik gospodarki odpadami - teoria i praktyka, Wyd. Seidel Przywecki, 2003

Additional



Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for tests/exam) ¹	15	0,5

¹ delete or add other activities as appropriate