POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Environment protection in power engineering

Course

Field of study	Year/Semester
Power Engineering	1/2
Area of study (specialization)	Profile of study
-	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)
10	-0	-0
Tutorials	Projects/seminars	
0	-0	

Number of credit points

1

Lecturers

Responsible for the course/lecturer:	Responsible for the course/lecturer:
dr inż. Artur Bugała	-
email: artur.bugala@put.poznan.pl	
tel. 61 6652382	
Faculty of Control, Robotics and Electrical Engineering	
Piotrowo 3A, 60-965 Poznań	

Prerequisites

Basic knowledge in the field of electricity generation, knowledge of energy objects included in the power system, their construction and purpose. Ability to analyze the course of electricity generation processes.

Course objective

The aim of the course is to familiarize students with:

- rules for organizing electricity generation processes and the use of technologically adapted devices for environmental protection,

- the impact of individual electricity generation technologies on the natural environment,

- methods to reduce the impact of generation on the state of the environment.

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Course-related learning outcomes

Knowledge

1. Student is able to determine the impact of processing various types of solid, liquid and gaseous energy fuels on the natural environment.

2. Student is able to characterize waste treatment technologies and methods of waste management.

3. Student knows and understands selected issues of energy law.

Skills

1. The student has the ability to design and analyze the work of selected installations and technological lines using appropriate software, either proprietary or commercial.

2.The student is able to assess the energy efficiency of technical solutions and propose modifications leading to their improvement.

Social competences

1. The student understands that knowledge and skills in the field of environmental protection require continuous improvement and updating with new technologies. The student understands the need to provide information to a wide audience about modern solutions in the field of environmental protection.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired during the lecture is verified at the colloquium carried out at the last lecture. The test consists of 10 test questions and 5 open questions, scored differently. The pass mark is 50% of the total number of points.

Programme content

Lecture:

- selected electricity generation technologies,

-waste management,

- measurements of environmental pollution,

- unconventional methods of generating electricity.

Teaching methods

Lecture: multimedia presentation (including drawings, photos, animations, sound, films) supported by examples given on the board.

Bibliography

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Basic

1. Kucowski J., Laudyn D., Przekwas M.: Energetyka a ochrona środowiska, WNT, 1994.

2. Krystek J.: Ochrona środowiska dla inżynierów, Wydawnictwo Naukowe PWN, 2018.

3. Lewandowski M., Ryms M.: Biopaliwa, Proekologiczne odnawialne źródła energii, WNT, 2013.

Additional

1. Paska J.: Wytwarzanie energii elektrycznej, Oficyna Wydawnicza PW, Warszawa 2005.

2. Laws, regulations and norms

Breakdown of average student's workload

	Hours	ECTS
Total workload	26	1,0
Classes requiring direct contact with the teacher	16	1,0
Student's own work (literature studies, preparation for test) [1]	10	0,0

[1] delete or add other activities as appropriate