

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Environment protection in power engineering		Code 1010314371010325647
Field of study Power Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 7
Elective path/specialty -	Subject offered in: polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 15 Classes: 15 Laboratory: - Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 3 100% 3 100%
Responsible for subject / lecturer: Prof. dr hab. inż. Zbigniew Stein email: email: zbigniew.stein@put.poznan.pl tel. 616652589 Elektryczny ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of electricity generation and the construction of facilities for the production.
2	Skills	Organizing the production of electricity and the use of facilities subject to the requirements of environmental protection.
3	Social competencies	The sensitivity of the measures to protect the environment.
Assumptions and objectives of the course: Understanding the principles of organizing the production of electricity and the use of facilities subject to the requirements of environmental protection.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. choose production technologies economically viable and environmentally friendly - [K_W09+++, K_W20++]		
2. use or annihilation propose and organize waste gas purification - [K_W09++, K_W20+]		
Skills:		
1. use knowledge of environmental investigations to determine the production limit pollution - [K_U01++, K_U02++]		
2. organize and interpret measurements of environmental pollution - [K_U01+, K_U02++, K_U10++]		
Social competencies:		
1. has a sensitivity to measures to protect of the environment - [K_K02++, K_K04++]		

Assessment methods of study outcomes

<p>Lecture:</p> <ul style="list-style-type: none"> - continuous evaluation in the classroom (rewarding activity and perception), - passing the test. <p>Classes:</p> <ul style="list-style-type: none"> - continuous evaluation in the classroom (favoring activity and perception), - tests on exercises. 		
Course description		
<p>Generation of electricity in power plants. Energy raw materials. The energy value of various types of raw materials. Protection of the environment in the process of generating electricity. Waste of energy commodities. Landfilling. Waste management capabilities. Measurements of environmental pollution. Energy Law. Laws and regulations on environmental protection.</p>		
<p>Basic bibliography:</p> <ol style="list-style-type: none"> 1. Ustawy, rozporządzenia i normy. 2. Kucowski J., Laudyn D., Przekwas M.: "Energetyka a ochrona środowiska", WNT, Warszawa 1994. 		
<p>Additional bibliography:</p> <ol style="list-style-type: none"> 1. Janiczek R.: "Eksploracja elektrowni parowych", WNT, Warszawa 1980. 		
Result of average student's workload		
Activity	Time (working hours)	
1. participation in class lectures	14	
2. participate in the consultations on of the lecture	4	
3. prepare for the completion of the lecture	10	
4. participation in the completion of of the lecture	1	
5. participation in class exercises	15	
6. part in the consultation exercises	5	
7. preparation for exercises	10	
8. homework preparation	10	
Student's workload		
Source of workload	hours	ECTS
Total workload	69	3
Contact hours	39	1
Practical activities	0	0