

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Exploitation of electric power equipment		Code 1010311371010316895
Field of study Electrical Engineering	Profile of study (general academic, practical) general academic	Year /Semester 4 / 7
Elective path/specialty High Voltage Engineering	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 30 Classes: - Laboratory: - Project/seminars: 30		No. of credits 7
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art		ECTS distribution (number and %)
Responsible for subject / lecturer: dr hab. inż. Krzysztof Siodła, prof. PP email: krzysztof.siodla@put.poznan.pl tel. 61-665 2272 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student has the knowledge in construction of electric power equipment, as well as transmission and distribution network
2	Skills	Student has the ability to effective self-learning in the scope of chosen field of study
3	Social competencies	Student is aware of expanding his knowledge, ability, competences, can work and cooperate in group
Assumptions and objectives of the course: Knowledge of exploitation activity and procedures of equipment working in generation, transmission and distribution of electric power (transformers, cables, capacitors, insulators, switching devices, GIS/GIL)		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student has extended knowledge in the scope of electric power equipment exploitation - [K_W08+++]		
2. Student has systematic and theoretical knowledge in the scope of power grid exploitation - [K_W13++]		
Skills:		
1. Student is able to prepare the documentation of electric power equipment exploitation - [K_U07++]		
2. Student is able to exploit properly the power equipment according to general demands and technical documentation - [K_U23+++]		
Social competencies:		
1. Student is conscious of importance and results of electrical engineer activity, including the influence on environment as well as proper exploitation of power equipment - [K_K02++]		
Assessment methods of study outcomes		
Lecture ? evaluation of knowledge and skills proved with exam		
Project classes ? evaluation of individually prepared instruction of chosen equipment exploitation, or power grid sector		
Course description		

The principles of electric equipment and installation exploitation of low, medium and high voltage. Technical-exploitation documentation, taking equipment for work. Exploitation of power generators, transformers, substations, overhead and cable lines, power factor correction capacitors, electric machines, lighting equipment, rectifiers, batteries, diesel generators. Electric shock protection rules. Principles of rational and safe operation of power equipment and installations.

Basic bibliography:

1. Strojny J., Strzałka J., Elektroenergetyka. Obsługa i eksploatacja urządzeń, instalacji i sieci, Europex Kraków, 2003
2. Lenartowicz R., Zdunek W., Egzamin kwalifikacyjny. Urządzenia instalacje i sieci elektroenergetyczne, Medium Warszawa, 2010
3. Inżynieria wysokich napięć w elektroenergetyce, pod red. H.Mościckiej-Grzesiak, Wydawnictwo Politechniki Poznańskiej, tom 1 1996, tom 2 1999.
4. Flisowski Z., Technika wysokich napięć, WNT, Warszawa, 2008.
5. Gacek Z., Technika wysokich napięć, Wydawnictwo Politechniki Śląskiej, Gliwice, 1999.

Additional bibliography:

1. Gacek Z., Kształtowanie wysokonapięciowych układów izolacyjnych stosowanych w elektroenergetyce, Wydawnictwo Politechniki Śląskiej, Gliwice, 2002.
2. Gacek Z., Wysokonapięciowa technika izolacyjna, Wydawnictwo Politechniki Śląskiej, Gliwice, 2006.

Result of average student's workload

Activity	Time (working hours)
1. Participation in lectures	30
2. Participation in project classes	30
3. Participation in exam	5
4. Preparation for exam	30
5. Consultations	30
6. Preparation of project	30
7. Preparation for project classes	30

Student's workload

Source of workload	hours	ECTS
Total workload	185	7
Contact hours	95	4
Practical activities	90	3