

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject (-)		Code 1010311371010316933
Field of study Electrical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 7
Elective path/specialty Electric Power Systems	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: 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: dr inż. Justyna Michalak email: justyna.michalak@put.poznan.pl tel. 616652030 Wydział Elektryczny ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student has a knowledge in the scope of basic definitions concerning power companies and in the scope of basic methods of evaluation of economic effectiveness of power companies
2	Skills	Student is able to evaluate economic effectiveness of power companies and is able to collect data essential to carry out such analysis
3	Social competencies	Student is ready to teamwork and to make a decision
Assumptions and objectives of the course: To acquaint methods of evaluation of economic effectiveness of power investments on the basis of criterion of minimum wastes (criterion of power limit). To acquaint basis of financial management of power companies		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has a knowledge in the scope of the basis of financial management of power companies - [K_W20 +K_W22++K_W23 +++++K_W25 +++++, K_W27+++]		
2. Has a knowledge in the scope of basic methods of evaluation of economic effectiveness of power companies on the basis of criterion of minimum wastes (criterion of power limit) - [K_W20++K_W24++ K_W27+++ K_W27+]		
Skills:		
1. Is able to evaluate economic effectiveness of power companies limiting environment pollution - [K_U07+K_U08++K_U16+++K_U16++]		
2. Is able to collect data essential to carry out analysis of economic effectiveness of power companies - [K_U01++, K_U03+, K_U14++, K_U20+++, K_U20++]		
3. Is able to calculate losses of power and energy - [K_U01++, K_U08+,]		
Social competencies:		
1. Has a consciousness of economy aspects power company conducting on market. - [K_K02+K_K05+++++]		
Assessment methods of study outcomes		

Classes evaluation of knowledge and competitions by written tests connected with calculation exercises permanent evaluation during every classes (rewarding for activity) evaluation of competence to use acquainted methods and rules		
Course description		
Financial economy of power companies. New power investments, modernization and overhauls in power engineering, evaluation of economic effectiveness. losses of power and energy. Criterion of power limit (criterion of minimum of losses)		
Basic bibliography:		
1. Laudyn D., Pawlik M., Strzelczyk F.: Elektrownie, WNT W-wa 2000.		
2. Kujszczyk Sz. (pod red.): Elektroenergetyczne sieci rozdzielcze, tom 1 i 2, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2004 r. Warszawa, 2004 r.		
3. Kujszczyk Sz. (pod red.): Elektroenergetyczne układy przesyłowe, WNT, Warszawa, 1997		
4. Sierpińska M., Jachna T., Ocena przedsiębiorstwa według standardów światowych, Wydawnictwo Naukowe PWN, Warszawa, 1997.		
5. Paska J., Ekonomika w elektroenergetyce, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2007.		
6. Laudyn D., Rachunek ekonomiczny w elektroenergetyce, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa, 2007.		
7. Bartnik R.: Rachunek efektywności techniczno-ekonomicznej w energetyce zawodowej, Oficyna Wydawnicza Politechniki Opolskiej, Opole 2008.		
8. Soliński I.: Ekonomika i organizacja sektorów systemu paliwowo-energetycznego, Uczelniane Wydawnictwa Naukowo-Dydaktyczne AGH, Kraków 2000.		
9. Góra S., Gospodarka elektroenergetyczna w przemyśle, Państwowe Wydawnictwo Naukowe, Warszawa, 1975.		
Additional bibliography:		
1. Szargut J., Ziębk A.: Podstawy energetyki cieplnej, PWN W-wa 1998		
2. Marecki J.: Podstawy przemian energetycznych, WNT W-wa 1995		
3. Lewandowski W. M.: Proekologiczne źródła energii odnawialnej, WNT, W-wa 2001		
4. Kacejko P., Machowski J.: Zwarcia w systemach elektroenergetycznych. WNT, Warszawa 2002		
5. Janasz W, Podstawy ekonomii przemysłu, Wydawnictwo Naukowe PWN, Warszawa, 1997.		
6. Drury C., Rachunek kosztów Wydawnictwo Naukowe PWN, Warszawa, 1996.		
7. Ustawa z dnia 10 kwietnia 1997 r. PRAWO ENERGETYCZNE z Rozporządzeniami Ministra Gospodarki w sprawie szczegółowych zasad kształtowania i kalkulacji taryf oraz zasad rozliczeń w obrocie energią elektryczną.		
Result of average student's workload		
Activity	Time (working hours)	
1. participation in lectures	15	
2. execution of calculation exercises	15	
3. tutorials related to lectures	10	
4. tutorials related to classes	10	
5. preparation to exam	30	
Student's workload		
Source of workload	hours	ECTS
Total workload	80	3
Contact hours	50	2
Practical activities	0	0