

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Seminar		Code 1010315441010324073
Field of study Power Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 2 / 4
Elective path/specialty Sustainable Development of Power	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: - Classes: - Laboratory: - Project/seminars: 18		No. of credits 15
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 %) 15 100% 15 100%
Responsible for subject / lecturer: dr hab. inż. Andrzej Tomczewski email: Andrzej.Tomczewski@put.poznan.pl tel. 61 665 2788 Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic information of subjects taught for first degree of full-time studies, majoring in power engineering and specialty of ecological source of electrical energy.
2	Skills	Measurements and calculations of basic electrical and non-electrical quantities, writing simple computer programs, designing and construction of simple circuits or electrical installations and effective self-study in chosen specialty and academic field.
3	Social competencies	Verbal communication and team work, awareness of the need to expand their knowledge and skills.
Assumptions and objectives of the course: Presentation of the results of research and analysis conducted for thesis, formulating conclusions.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. He has well organized and theoretically supported knowledge in the area of information management, structure of operational control, telemechanics and data acquisition. - [K_W17++] 2. He has knowledge in the field of power generation in power system, including dissipated generation. - [K_W18++]		
Skills: 1. He is able to identify directions of further learning and pursue the process of self-education. - [K_U11++] 2. He is able to prepare detailed documentation of results of realized experiment, project or science exercise. He can prepare a study that discusses these results. - [K_U15++]		
Social competencies: 1. understand the need for training and constant improving his professional competence - [K_K01++]		
Assessment methods of study outcomes		
- assess the knowledge and skills needed to carry out the Engineer's thesis topic, - an assessment based on the presentation of the results of realized works, - evaluate the effectiveness of the application of knowledge in problem solving, - continuous evaluation for each class: student activities, increase their knowledge and skills.		

Course description		
<p>Choosing a specific topic for a thesis. Describing and setting out the purpose of the research area essential master thesis, including its analysis. The presentation of results of research as well as the analysis of selected issues. The formulation of conclusions, the preparation of the list of specialist literature used in the thesis. Presentation of research results related to Master's thesis.</p> <p>Update 2107: A preparation of paper related with study of renewable energy sources.</p> <p>Applied methods of education: The project - multimedia presentation; analysis / discussion of various methods (including nonconventional) solving problem; analysis / discussion of various aspects (including: economic, environmental, legal and social) of solving problems.</p>		
<p>Basic bibliography: 1. Bibliography of Master thesis range recommended by the promoter.</p>		
<p>Additional bibliography: 1. Bibliography of Mster thesis searched by student.</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. participation in seminar classes	18	
2. participation in the consultation	45	
3. preparation for seminar classes	12	
4. determine the tasks within the scope of Master	50	
5. prepare a presentation on the progress made in the implementation of Master	10	
6. perform research for Master	100	
7. Master	110	
Student's workload		
Source of workload	hours	ECTS
Total workload	345	15
Contact hours	122	4
Practical activities	177	6