

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Diploma seminar		Code 1010324391010320081
Field of study Electrical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 5 / 9
Elective path/specialty Measurement Systems in Industry and	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: - Classes: - Laboratory: - Project/seminars: 18		No. of credits 13
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 %) 13 100% 13 100%
Responsible for subject / lecturer: prof. dr hab. inż. Anna Cysewska-Sobusiak email: anna.cysewska@put.poznan.pl tel. 61 665 2633 Wydział Elektryczny ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge within the scope of subjects included in the programme of the speciality
2	Skills	Ability to realize measurements of basic electrical and nonelectrical quantities and realize the efficient self-education in the area related to the chosen field and speciality of studies
3	Social competencies	Ability to cooperate in a team and awareness of the necessity of broadening of the knowledge and skills in the field of electrical engineering
Assumptions and objectives of the course: Knowledge of selected problems related to gathering of the indispensable materials and knowledge of principles concerned diploma thesis preparation		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Knowledge of the bases of applying copyright and the protection of the intellectual property, students know how to use the supplies of patents information - [K_W21 +]		
Skills: 1. Ability to prepare a short presentation on a given task concerned with electrical engineering - [K_U08 +++] 2. Ability to compare the different project solutions in the area of basic electrical engineering problems from the point of view the selected applications criteria - [K_U12+++]		
Social competencies: 1. Students awareness of the value of their work, and also ability to show the readiness of submitting to the principles of the work in the team - [K_K03 +] 2. Awareness of the social part of a technical university graduate, with special focus on needs to formulate and propagate information and opinion relating the achievements in the area of electrical, measuring and biomedical engineering - [K_K05 +++]		
Assessment methods of study outcomes		

<ul style="list-style-type: none"> - Continuous estimation of students activity and the increase of their knowledge, and the skills necessary to realize the diploma theses - Evaluation based on the obtained results and ability of their regular presentation - Evaluation of efficient application of the knowledge acquired to solve the given tasks 		
Course description		
<ul style="list-style-type: none"> - The selected problems related to the area of diploma theses - Arrangement of the tasks included in the subject of a diploma thesis - Principles of preparing the bibliography - Editing and formatting of diploma theses 		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Biocybernetyka i inżynieria biomedyczna, red. M. Nałęcz, Akademicka Oficyna Wyd. EXIT, Warszawa 2001-2002 S. Bolkowski Elektrotechnika, Wyd. Szkolne i Pedagogiczne, Warszawa 2009 2. A. Cysewska-Sobusiak, Podstawy metrologii i inżynierii pomiarowej, Wyd. Politechniki Poznańskiej, Poznań 2010 3. R. Józwicki, Technika laserowa i jej zastosowania, Oficyna Wyd. Politechniki Warszawskiej, Warszawa 2009 4. Z. Kaczmarek, Światłowodowe czujniki i przetworniki pomiarowe, Agenda Wydawnicza PAK, Warszawa 2006 5. M. Rząsa, B. Kiczma, Elektryczne i elektroniczne czujniki temperatury, WKŁ, Warszawa, 2005 6. J. Zakrzewski, Czujniki i przetworniki pomiarowe, Wyd. Politechniki Śląskiej, Gliwice 2004 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. H. Madura, Pomiary termowizyjne w praktyce, Agenda Wyd. PAK, Warszawa, 2004 2. W. Malina, S. Ablameyko, W. Pawlak, Podstawy cyfrowego przetwarzania obrazów, Akademicka Oficyna Wyd. EXIT, Warszawa 2002 3. A. Michalski, S. Tumański, B. Żyła, Laboratorium miernictwa wielkości nieelektrycznych, Oficyna Wyd. Politechniki Warszawskiej, Warszawa 1996 4. J. Moczko, L. Kramer, Cyfrowe metody przetwarzania sygnałów biomedycznych, Wyd. UAM, Poznań 2001 		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in seminars	18	
2. Participation in consulting with supervisors	72	
3. Preparation to seminars	30	
4. Arrangement of the detailed tasks included in the area of a diploma thesis	25	
5. Realization of the work	160	
6. Preparation of presentations realting the the progress in the realization of the work	30	
7. Preparation of the final multimedia presentation and preparation to the diploma exam	23	
Student's workload		
Source of workload	hours	ECTS
Total workload	313	13
Contact hours	110	4
Practical activities	160	6