

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Diploma seminar		Code 1010321371010320081
Field of study Electrical Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 7
Elective path/specialty Electrical Systems in Mechatronics	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: - Classes: - Laboratory: - Project/seminars: 30		No. of credits 12
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 %) 12 100% 12 100%
Responsible for subject / lecturer: Ph. D. Wiesław Łyskawiński email: Wieslaw.Lyskawinski@put.poznan.pl tel. 61 665 2781 Faculty of Electrical Engineering ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Elementary knowledge of the design and the analysis and synthesis of electromechanical converters and measurement methods used in mechatronics
2	Skills	Support programs for the numerical analysis of electromechanical converters at a basic level, skills in perform basic measurements of electrical and electromechanical, ability to effectively self-education in a field related to the chosen field of study
3	Social competencies	Ability to teamwork and verbal communication, the awareness of the need to broaden their skills and knowledge
Assumptions and objectives of the course: Harnessing modern testing methods, design and analysis of actuators for automatic control and mechatronics, and electromagnetic and electromechanical devices.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Zna podstawy stosowania - [K_W21 +++]		
Skills:		
1. Potrafi przygotować i - [K_U08 +++] 2. Potrafi dokonać porównania różnych rozwiązań projektowych, w zakresie podstawowych zagadnień w obszarze elektrotechniki, ze względu na wybrane kryteria użytkowe i ekonomiczne - [K_U12 +++]		
Social competencies:		
1. . Ma świadomość ważności za pracę własną oraz gotowość podporządkowania się zasadom pracy w zespole i ponoszenia odpowiedzialności za wspólnie realizowane zadania - [K_K03 +] 2. . Ma świadomość roli społecznej absolwenta uczelni technicznej, a zwłaszcza rozumie potrzebę formułowania i przekazywania społeczeństwu informacji i opinii dotyczących osiągnięć techniki i innych aspektów inżynierii elektrycznej; przekazuje takie informacje i opinie w sposób powszechnie zrozumiały - [K_K05 +++]		
Assessment methods of study outcomes		

seminar: ? evaluation based on the presentation and the results of the work carried out, ? assess the knowledge and skills needed to carry out engineering work item, ? the effectiveness of the application of knowledge in problem solving, ? continuous evaluation for each course: student activities, increase their knowledge and skills.		
Course description		
Computer-aided design of electromagnetic and electromechanical converters. Unconventional electromechanical converters. Simulation of operating modes of selected machines. Analysis of the electromagnetic field in selected electromagnetic devices. Measurement stand to study phenomena in transformers and mechatronic systems.		
Basic bibliography:		
1. 1. AC micro-machinery, Simst J., Clarendon Press, New York, 1994 2. 2. Mikromaszyny elektryczne, Sochocki R., Ofic. Wyd. PW, Warszawa, 1996 (polish) 3. 3. Silniki krokowe, Wróbel T., WNT, Warszawa, 1993 (polish) 4. 4. Projektowanie maszyn elektrycznych prądu przemiennego, Dąbrowski M., WNT, Warszawa, 1994 (polish)		
Additional bibliography:		
1. 1. Handbook of small electric motors, Yeadon W.H., Yeadon A.W., Mc Graw Hill, 2001		
Result of average student's workload		
Activity	Time (working hours)	
1. participation in seminar classes	30	
2. participate in the consultations on the seminar	65	
3. preparing presentations	45	
4. implementation of theses	160	
Student's workload		
Source of workload	hours	ECTS
Total workload	300	12
Contact hours	95	4
Practical activities	160	6