

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Analog and digital electronic systems		Code 1010311261010321814
Field of study Electrical engineering	Profile of study (general academic, practical) (brak)	Year /Semester 3 / 6
Elective path/specialty -	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: 2 Classes: - Laboratory: 1 Project/seminars: 1		No. of credits 5
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 %) 5 100% 5 100%
Responsible for subject / lecturer: Michał Gwóźdź email: michal.gwozdz@put.poznan.pl tel. 61 665 2646 Elektryczny ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	He knows the rules and parameters of the basic elements of electronic and microelectronic
2	Skills	He can use the knowledge of the electronics for the analysis of analog and digital electronic circuits in the primary
3	Social competencies	He can think and act in an entrepreneurial manner in the area of ??electronic design
Assumptions and objectives of the course: Getting to know the principles of operation of complex analog and analog-to-digital electronic circuits. Acquisition of the ability to design analog-to-digital electronic systems at a basic level.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. It is able to describe the principles of operation and performance of specialized microelectronic systems, characterized by the construction and use of electronic analog-digital systems at a basic level - [K_W02 +, K_W07 ++, K_W14 +++] 2. It is able to describe the basic criteria for the design of electronic systems, analog-to-digital - [K_W04 +, K_W014+++]		
Skills: 1. Is able to apply his knowledge of electronics to design electronic systems analog-to-digital - [K_U03 ++, K_U17 ++] 2. It can specify the criteria necessary for the proper design of electronic analog-to-digital basic level - [K_U03 ++, K_U07 ++]		
Social competencies: 1. He can think and act in an entrepreneurial manner in the design of electronic systems - [K_K02 ++]		
Assessment methods of study outcomes		

<p>lecture</p> <ul style="list-style-type: none"> - Assess the knowledge and skills listed on the written exam with a test and problematic, <p>Design classes and laboratory exercises:</p> <ul style="list-style-type: none"> - Test and favoring knowledge necessary to realize the set of problems in the area of tasks in the laboratory, - Continuous evaluation, rewarding gain skills they met the principles and methods - Assessment of knowledge and skills related to the implementation of laboratory exercises, the evaluation report made ??exercise. <p>Get extra points for the activity in the classroom, and in particular for:</p> <ul style="list-style-type: none"> - Propose to discuss further aspects of the subject; - The effectiveness of the application of the knowledge gained during solving the given problem; - Comments related to the improvement of teaching materials; - Developed aesthetic diligence reports and jobs - in the self-study. 		
Course description		
<p>Features specialized microelectronic circuits for analog signal processing. Introduction to the analog-to-digital signals. Construction and performance analog-to-digital and digital-to-analog. Construction and design principles recognized signal path from the transmitter physical quantity into an electrical signal. Analog-to-digital and digital-to-analog microprocessor system. Design rules for analog-to-digital electronic systems.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Z. Kulka Z., M. Nadachowski, Analogowe układy scalone, WKŁ, W-wa 1980 2. A. Borkowski, Układy scalone w stabilizatorach napięcia stałego, WNT, Warszawa, 1985 3. Z. Kulka Z., A. Libura A., M. Nadachowski, Przetworniki analogowo-cyfrowe i cyfrowo-analogowe, WKiŁ, Warszawa, 1987 4. W. Borodziejewicz, K. Jaszczak, Cyfrowe przetwarzanie sygnałów, WNT, Warszawa, 1987 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. J.W. Cofron, W.E. Long, Technika sprzęgania układów w systemach mikroprocesorowych, WNT, Warszawa, 1988 2. D.F. Hoeschele ? Analog-to-digital and digital-to-analog conversion techniques, John Wiley & Sons, New York, 1994 		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lecture classes	30	
2. Participation in project activities	15	
3. Participation in laboratory activities	15	
4. Preparation for classes, the implementation of projects and prepare reports	30	
5. Exam Preparation	15	
6. Participation in the exam	4	
Student's workload		
Source of workload	hours	ECTS
Total workload	109	5
Contact hours	68	3
Practical activities	40	3