

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Electronic Circuits		Code 1010804151010840029
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 3 / 5
Elective path/specialty -	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: 20 Classes: - Laboratory: 30 Project/seminars: -		No. of credits 6
Status of the course in the study program (Basic, major, other) major		(university-wide, from another field) from field
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 6 100% 6 100%
Responsible for subject / lecturer: dr inż. Krzysztof Klimaszewski email: kklima@et.put.poznan.pl tel. +48 61 665 3895 Elektroniki i Telekomunikacji ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	K_W01 K_W05
2	Skills	K_U01
3	Social competencies	K_K01
Assumptions and objectives of the course: To acquaint students with basic electronics, limits their opportunities and ways to use systems for specific applications. Provide basic knowledge of electronic design		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Understand the principles of common systems, common in these applications to the lecture. Knows the basic principles for the design of electronic circuits. - [K1_W08]		
Skills: 1. Can design and implement a simple electronic circuit - [K1_U01] 2. Able to use the documentation of electronic components in the design of simple systems - [K1_U01]		
Social competencies: 1. He knows his own limitations of knowledge and skills, understands the need for ongoing education. Able to cooperate in the implementation of more complex objectives, understands the need to bear the consequences of their decisions and their actions - [K1_K02]		
Assessment methods of study outcomes		
Assessment of laboratory on the basis of activity and running reports Written and oral examination of the scope of the content of the lecture		
Course description		

<p>-Lectures: Operational amplifiers in linear applications Operational amplifiers in non-linear applications Stabilized power supply Low-frequency power amplifiers broadband Amplifiers Selective Amplifier LC Amplifier with feedback RC sinusoidal oscillators LC and quartz generators Active filters Noise in electronic circuits</p> <p>Laboratory: Amplifier with bipolar transistor Field-effect transistors applications RC generator LC generator Active filter Voltage comparator Instrumentation Amplifier stabilized power supply</p>		
<p>Basic bibliography: 1. U. Tietze, Ch. Schenk, ?Układy Półprzewodnikowe?, WNT 2009 2. Filipkowski A., ?Układy Elektroniczne Analogowe i Cyfrowe ?, WNT 2006 3. Nosal Z., Baranowski J., ?Układy Elektroniczne cz.I Układy Analogowe Liniowe?, WNT 2003</p>		
<p>Additional bibliography: 1. Adel S. Sedra, Kenneth C. Smith, ?Microelectronic Circuits?, Oxford University Press 2. Richard C. Jaeger, ?Microelectronic Circuit Design?, McGraw-Hill 1997 3. S. Kuta ?Elementy i Układy Elektroniczne cz. I? Wydawnictwo AGH, 2000 4. P. Horowitz, W. Hill, ?Sztuka Elektroniki?, WKiŁ 2006</p>		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lectures	30	
2. participation in laboratory exercises	30	
3. preparation for classes	15	
4. literature studies, preparation for the exam	45	
Student's workload		
Source of workload	hours	ECTS
Total workload	153	6
Contact hours	53	2
Practical activities	65	3