

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Chosen issues from electrotechnology		Code 1010315311010326992
Field of study Power Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 1 / 1
Elective path/specialty -	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: 10 Classes: 10 Laboratory: - Project/seminars: -		No. of credits 3
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 %) 3 100% 3 100%
Responsible for subject / lecturer: Prof. dr hab. inż. Konrad Skowronek email: konrad.skowronek@put.poznan.pl tel. 616652388 Elektryczny ul. Piotrowo 3A, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Knowledge of mathematics, physics and circuit theory at the level of the first degree.
2	Skills	Enhanced ability to understand and interpret the messages conveyed and effective self-study in a field related to the chosen field of study.
3	Social competencies	It has an expanded awareness of the need to broaden their competence, willingness to cooperate and work independently and within a team.
Assumptions and objectives of the course: Understanding the theory of discrete circuits. Understanding the principles of Fourier and Laplace transforms. Familiar with the principles of passive two-way adapter synthesis. Knowledge of topological methods for analysis of electrical circuits. Understanding the dynamic analysis of electrical circuits. In-depth knowledge of analytical methods for calculating electrical circuits, in particular the actual (random).		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Characterized discrete circuits, circuits and real signals, describe and explain the laws and methods of analysis of the dynamics and stability of the electrical circuits and their synthesis. - [K_W01++, K_W03+++] 2. Recognize and select appropriate methods of in-depth analysis of electrical circuits. - [K_W02++]		
Skills: 1. Use in-depth knowledge of the theory of electrical circuits necessary to determine the parameters of the actual (discrete and random) circuitry, such as indicators of stability, capacity and random factors, transfer functions, etc. - [K_U03 ++] 2. Obtain specific information from the literature and the Internet, work individually and collectively, individually and collectively solve problems in the field of in-depth theory of electrical circuits. - [K_U01 ++] 3. To use methods get to know and mathematical models to the purpose of analysis and the arrangements and power systems design. - [K_U06+, K_U08+]		
Social competencies: 1. Able to think and act in an entrepreneurial manner in the extended analysis of electrical circuits. - [K_K01 +, K_K02 +]		
Assessment methods of study outcomes		

<p>Lecture: ? assess the knowledge and skills listed on the written and oral exam with in-depth theory of electrical circuits.</p> <p>Tutorials: ? to evaluate solving skills extended accounting tasks for the analysis of electrical circuits - checking skills in each class, and two colloquia during the semester.</p> <p>Get extra points for the activity in the classroom, and in particular for: ? propose to discuss additional aspects of the subject; ? the effectiveness of the application of the knowledge gained during solving the given problem; ? subsequent to the improvement of teaching materials; ? developed aesthetic care tasks - in the self-study.</p>		
Course description		
<p>The theory of discrete time circuits and what to value. Principles of Fourier transforms to choose between and Laplace. Synthesis methods and schemes passive two-way adapter. Some problems of topology of electrical circuits. Issues dynamics of electrical circuits and their evaluation. Analytical method for calculating random electrical circuits.</p>		
Basic bibliography:		
<ol style="list-style-type: none"> 1. Bolkowski S. "Teoria Obwodów elektrycznych", WNT. Warszawa 1998 2. Szabatin J., Śliwa E. "Zbiór zadań z teorii obwodów. Część 1", Wyd. Pol. Warsz. Warszawa 1997 3. Skowronek K. "Obwody elektryczne w ujęciu stochastycznym", Wyd. PP, 2011 4. Mikołajuk K., Trzaska Z. "Zbiór zadań z elektrotechniki teoretycznej", WNT, W-a, 1978 		
Additional bibliography:		
<ol style="list-style-type: none"> 1. Krakowski M. "Elektrotechnika teoretyczna", PWN, Warszawa 1978. 2. Chua L.O., Desoer C.A., Kuh E.S. " Linear and Nonlinear Circuits", McGraw-Hill Inc., 1987 3. Jastrzębska G., Nawrowski R. " Zbiór zadań z podstaw elektrotechniki", Wyd. PP, Poznań, 2000 4. Frąckowiak J., Nawrowski R., Zielińska M. "Podstawy elektrotechniki", Laboratorium, Wyd. PP, Poznań, 2011 		
Result of average student's workload		
Activity	Time (working hours)	
1. participation in lectures	10	
2. participation in tutorial classes	10	
3. participation in consulting (lecture)	8	
4. participation in consulting (tutorial)	7	
5. preparation to test/exam	20	
6. test/exam	2	
7. preparation for exercise classes, drawing homeworks up	14	
Student's workload		
Source of workload	hours	ECTS
Total workload	71	3
Contact hours	37	1
Practical activities	0	0