

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Computerization of the designing in the electronics</b>		Code <b>1010324361010324792</b>
Field of study <b>Electrical Engineering</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>3 / 6</b>
Elective path/specialty <b>-</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time,part-time) <b>part-time</b>	
No. of hours Lecture: <b>12</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>2</b>
Status of the course in the study program (Basic, major, other) <b>(brak)</b>		(university-wide, from another field) <b>(brak)</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>2 100%</b> <b>2 10%</b>
<b>Responsible for subject / lecturer:</b>  dr inż. Leszek Kasprzyk email: Leszek.Kasprzyk@put.poznan.pl tel. 616652659 Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań		
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Information in field of Mathematics, Numerical Analysis, Informatics, Theory of circuits, Electrical engineering, Electrical Power Engineering.
2	<b>Skills</b>	Skills in understanding and interpretation of information and effective self-education in field of science related with chosen academic discipline.
3	<b>Social competencies</b>	Student should have consciousness of necessity of improving his competences, readiness to work individual and cooperate within groups.
<b>Assumptions and objectives of the course:</b> Presentation of basics of design, rules for creating project documentation, selected numerical analysis methods used to solve issues in field of theory of circuits and electrical power engineering, parts of codes in c#.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b> 1. describe range of project, designed object, implement numerical analysis methods, such as: numerical integration, solving equations and systems of linear, nonlinear and differential equations, basic methods of optimization - [K_W02+++, K_W04+++, K_W11++] 2. recognize and select tools for information technology implementation - [K_W02+++, K_W04+++, K_W11++]		
<b>Skills:</b> 1. use knowledge of the Numeric analysis for selected issues in field of theory of circuits, electrical power engineering, necessary to implement design tasks - [K_U04+++, K_U10++, K_U13++] 2. get information from literature and web, work individual, solve exercises in the field of the computerization of designing - [K_U04+++, K_U10++]		
<b>Social competencies:</b> 1. think and operate in enterprising way in the field of software creation for designing in electrical engineering - [K_K01++, K_K02++, K_K03++]		
<b>Assessment methods of study outcomes</b>		

<p>Lecture:</p> <ul style="list-style-type: none"> <li>- assess the knowledge and skills listed on the written exam of the computerization of designing in electrical engineering.</li> </ul> <p>Obtaining additional points for activity during exercises, in particular way for:</p> <ul style="list-style-type: none"> <li>- proposing to discuss additional aspects of the subject,</li> <li>- effective use of knowledge obtained during solving of given problem,</li> <li>- comments related to improve teaching material.</li> </ul>		
<b>Course description</b>		
<p>Presentation of: rules of designing and creating projects documentation, convergence and stability of numerical solutions, calculations errors, issues of numerical integration of electrical quantities, numerical solutions of equations and systems of equations: linear, nonlinear, differential and partial differential used in electrical engineering and methods of determined and not determined optimization.</p>		
<b>Basic bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Kącki E.: Metody numeryczne dla inżynierów, WPL, Łódź 2003.</li> <li>2. Bolkowski S.: Teoria obwodów elektrycznych, WNT, Warszawa 1998.</li> <li>3. Fortuna Z.: Metody numeryczne, WNT, Warszawa 1998.</li> </ol>		
<b>Additional bibliography:</b>		
<ol style="list-style-type: none"> <li>1. Baron B.: Metody numeryczne w Turbo Pascalu, Helion, Gliwice 1996.</li> <li>2. Normy i katalogi do danego projektu.</li> </ol>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. participation in the lectures	12	
2. participate in the consultations on of the lecture	8	
3. preparation for the exam	20	
4. participation in the exam	5	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	45	2
Contact hours	25	1
Practical activities	0	0