

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Mathematics</b>		Code <b>1011101211011100063</b>
Field of study <b>Engineering Management - Full-time studies -</b>	Profile of study (general academic, practical) <b>(brak)</b>	Year /Semester <b>1 / 1</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>full-time</b>	
No. of hours Lecture: <b>30</b> Classes: <b>15</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>4</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		ECTS distribution (number and %)
<b>Responsible for subject / lecturer:</b> Grzegorz Grzegorzczyk email: grzegorz.grzegorzczyk@put.poznan.pl tel. 61 665 26 87 Wydział Elektryczny ul. Piotrowo 3a, 60-965 Poznań		<b>Responsible for subject / lecturer:</b> Małgorzata Zbąszyniak email: malgorzata.zbaszyniak@put.poznan.pl tel. 61 665 27 12 Wydział Elektryczny ul. Piotrowo 3a, 60-965 Poznań
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	Basic knowledge mathematics with range of secondary school.
2	<b>Skills</b>	The ability to think logically. Ability to describe simple problems in mathematical language.
3	<b>Social competencies</b>	Working in a group.
<b>Assumptions and objectives of the course:</b> Acquiring and consolidating of basic mathematical concepts on examples and skills in mathematical apparatus.		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b>		
1. Has knowledge of selected aspects of higher mathematics - [T1A_WO1]		
2. Application of mathematics to solve technical problems - [T1A_WO1]		
<b>Skills:</b>		
1. Can use basic knowledge of mathematics as a tool in management - [T1A_UO9]		
2. Can perform studies using mathematical apparatus - [T1A_UO9]		
<b>Social competencies:</b>		
1. Understand and apply formal mathematical apparatus in management - [T1A_KO4]		
<b>Assessment methods of study outcomes</b>		
Forming mark: a) from exercises: on a basis of curent results of work in form of test, work and presence at classes; b) at lectures: on a basis of questions about worked over problemes, Summary mark: a) Exercises pass on a basis of positive mark from ending test b) Written or oral exam from lectures.		
<b>Course description</b>		

<p>Elements of linear algebra.                  Sequences and their limits.                  The functions of single variable.                  Continuity and limit of functions of single variable.                  Elements of the differential calculus of functions of single variable.</p>		
<p><b>Basic bibliography:</b></p> <ol style="list-style-type: none"> <li>1. Foltińska, Z. Ratajczak, Z. Szafranski, Matematyka dla studentów uczelni technicznych, WPP Poznań 2000</li> <li>2. M. Gewert, Z. Skoczylas, Analiza matematyczna 1, Definicja, twierdzenia, wzory</li> <li>3. M. Gewert, Z. Skoczylas, Analiza matematyczna 1, Przykłady i zadania</li> <li>4. T. Jurlewicz, Z. Skoczylas, ALgebra liniowa 1, Definicja, twierdzenia, wzory</li> <li>5. T. Jurlewicz, Z. Skoczylas, ALgebra liniowa 1, Przykłady i zadania</li> </ol>		
<p><b>Additional bibliography:</b></p> <ol style="list-style-type: none"> <li>1. W. Krywicki, L. Włodarski, Analiza matematyczna w zadaniach, t. I-II, PWN Warszawa 1999</li> <li>2. W. Stankiewicz, Zadania z matematyki dla wyższych uczelni technicznych, t. I-II</li> <li>3. M. Lassak, Matematyka dla studentów technicznych</li> </ol>		
<p><b>Result of average student's workload</b></p>		
<p><b>Activity</b></p>		<p><b>Time (working hours)</b></p>
1. Lectures		30
2. Classes		15
3. Consultation		15
4. Preparing to classes		15
5. Preparing to pass the lectures		15
6. Preparing to pass the classes		16
7. Pass classes		2
8. Pass lectures		2
<p><b>Student's workload</b></p>		
<p><b>Source of workload</b></p>	<p><b>hours</b></p>	<p><b>ECTS</b></p>
Total workload	110	4
Contact hours	64	2
Practical activities	15	1