

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Mathematics		Code 1011101211010340063
Field of study Engineering Management - Full-time studies -	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: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 30 Classes: 15 Laboratory: - Project/seminars: -		No. of credits 4
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 social sciences Economics technical sciences Technical sciences		ECTS distribution (number and %) 2 50% 2 50% 2 50% 2 50%
Responsible for subject / lecturer: Grzegorz Grzegorzczyk email: grzegorz.grzegorzczyk@put.poznan.pl tel. 61 665 26 87 Wydział Elektryczny ul. Piotrowo 3a, 60-965 Poznań		Responsible for subject / lecturer: Małgorzata Zbąszyniak email: malgorzata.zbaszyniak@put.poznan.pl tel. 61 665 27 12 Wydział Elektryczny ul. Piotrowo 3a, 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge mathematics with range of secondary school.
2	Skills	The ability to think logically. Ability to describe simple problems in mathematical language.
3	Social competencies	Working in a group.
Assumptions and objectives of the course: Acquiring and consolidating of basic mathematical concepts on examples and skills in mathematical apparatus.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has knowledge of selected aspects of higher mathematics - [T1A_WO1]		
2. Application of mathematics to solve technical problems - [T1A_WO1]		
Skills:		
1. Can use basic knowledge of mathematics as a tool in management - [T1A_UO9]		
2. Can perform studies using mathematical apparatus - [T1A_UO9]		
Social competencies:		
1. Understand and apply formal mathematical apparatus in management - [T1A_KO4]		
Assessment methods of study outcomes		

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.		
Course description		
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.		
Basic bibliography:		
1. Folyńska, Z. Ratajczak, Z. Szafranski, Matematyka dla studentów uczelni technicznych, WPP Poznań 2000 2. M. Gewert, Z. Skoczylas, Analiza matematyczna 1, Definicja, twierdzenia, wzory 3. M. Gewert, Z. Skoczylas, Analiza matematyczna 1, Przykłady i zadania 4. T. Jurlewicz, Z. Skoczylas, ALgebra liniowa 1, Definicja, twierdzenia, wzory 5. T. Jurlewicz, Z. Skoczylas, ALgebra liniowa 1, Przykłady i zadania		
Additional bibliography:		
1. W. Krywicki, L. Włodarski, Analiza matematyczna w zadaniach, t. I-II, PWN Warszawa 1999 2. W. Stankiewicz, Zadania z matematyki dla wyższych uczelni technicznych, t. I-II 3. M. Lassak, Matematyka dla studentów technicznych		
Result of average student's workload		
Activity	Time (working hours)	
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	
Student's workload		
Source of workload	hours	ECTS
Total workload	110	4
Contact hours	64	2
Practical activities	15	1