STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Mathematics		**1011101321010340063**

Field of study	Profile of study (general academic, practical)	Year /Semester
Management - Full-time studies - First-cycle	**(brak)**	**1 / 2**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**

Cycle of study:	Form of study (full-time,part-time)
First-cycle studies	**full-time**

No. of hours				No. of credits
Lecture: **15**	Classes: **30**	Laboratory: **-**	Project/seminars: **-**	**5**

Status of the course in the study program (Basic, major, other)	(university-wide, from another field)
(brak)	**(brak)**

Education areas and fields of science and art	ECTS distribution (number and %)
study effects leading to the acquisition of engineering qualifications	**2 40%**
social sciences	**3 60%**
Economics	**3 60%**

Responsible for subject / lecturer:

Institute of Mathematics
email: e-mail: office_@math.put.poznan.pl.
tel. (0-prefiks-61) 6652 320, fax: (061) 665 2348;
Faculty of Electrical Engineering
ul. Piotrowo 3A, 60-965 Poznań;

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has basic knowledge on mathematical analysis
2	**Skills**	Student is able to use a calculator efficiently
3	**Social competencies**	Student understands the need of lifelong learning

Assumptions and objectives of the course:

Acquiring and consolidating of basic mathematical concepts using examples and skills in mathematical tools.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. has the basic knowledge on the character of managerial science and it?s place in relations with contextual and ergological sciences - [K1A_W01]
2. knows methods and instruments for collecting data, processing and selecting it and for distributing information - [K1A_W11]
3. knows methods and instruments of descriptive statistics, as well as their application in models of processes and phenomena occurring in organizations - [K1A_W12]

Skills:

1. is able to use own knowledge of mathematics in order to make simulations and then, make a logical concluding and interpret results - [K01_InżA_U1]
2. is able to use analytical and simulation methods in forming and solving engineer tasks - [K01_InżA_U2]
3. is able to solve engineer project tasks with use of mathematical rules - [K01_InżA_U6, K01_InżA_U7]

Social competencies:

1. understands the necessity of expanding own mathematical knowledge - [K1A_K01]
2. is able to prepare and realize different engineer ventures individually and in a team - [K1A_K02, K1A_K07]

Assessment methods of study outcomes

Forming assessment:
a) exercises: on basis of the current progress of the realization of topics evaluated during written
b) lectures: on basis of responses to questions referring to topics from previous lectures,
final assessment:
a) exercises: on basis of the average from partial grades obtained for the forming assessment
b) lectures: written exam. It is possible to enter the examination after passing exercises.

Course description

Elements of the integral calculus of functions of single variable.
Series of numbers.
Ordinary Differential Equations.
Functions of several variables.

Basic bibliography:

1. Foltyńska, Z. Ratajczak, Z. Szafrański, Matematyka dla studentów uczelni technicznych, WPP, Poznań 2000

Additional bibliography:

1. Krysicki W., Włodarski L., Analiza matematyczna w zadaniach, PWN,Warszawa 1999

Result of average student's workload

Activity	Time (working hours)
1. lecture	15
2. classes	30
3. consultations	30
4. student's own work	20
5. exam	5

Student's workload

Source of workload	hours	ECTS
Total workload	110	5
Contact hours	75	3
Practical activities	80	3