POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name

Mathematics

Course

Field of study	Year/Semester
Engineering Management	1/1
Area of study (specialization)	Profile of study
	general academic
Level of study	Course offered in
First-cycle studies	Polish
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
30		
Tutorials	Projects/seminars	
15		

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

Grzegorz Grzegorczyk

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Tel.: 61 665 26 87

Faculty of Control, Robotics and Electrical Engineering

Piotrowo 3A, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

The basic knowledge obtained in high school.

The ability to think logically. The ability to mathematical description of simple problems.

The ability to work in groups.

Course objective

The acquisition and consolidation of examples of basic mathematical concepts and acquire the ability to use the mathematical apparatus.

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Course-related learning outcomes

Knowledge

P6S_WG_11 Has knowledge of selected problems of higher mathematics.

P6S_WG_16 Knows the application of higher mathematics to solve technical problems.

Skills

P6S_UW_10 Can use the basic knowledge of higher mathematics as a tool in management.

P6S_UW_14 Can use mathematical apparatus in studies.

Social competences

P6S_KO_03 Understands and uses a formalized mathematical apparatus in management.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lectures: passing the semester is based on the grade of the exercises. The exam takes place at the end of the second semester - includes material from both semesters.

Tutorials: knowledge is verified on the basis of a 75-minutes test, which are realized at the end of the semester.

Programme content

Elements of linear algebra:

- matrices and determinants,

- systems of linear equations,

- vectors, scalar and vector product,

- surface and straight line in space.

Functions of one variable:

- graphs of elementary and rational functions,

- function limits,

- inverse functions.

Differential calculus of one-variable functions.

Teaching methods

Lecture: oral presentation with examples and formulas, which are presented using a visualizer.

Tutorials: presentation of sample tasks on the board followed by independent solving of similar examples by students.

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Bibliography

Basic

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

Additional

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

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	45	2,0
Student's own work (literature studies, preparation for tutorials, preparation for tests/exam) [1]	55	2,0

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[1] delete or add other activities as appropriate