



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Mathematics

Course

Field of study

Management and production engineering

Area of study (specialization)

Level of study

First-cycle studies

Form of study

part-time

Year/Semester

1/1

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

Number of hours

Lecture

26

Laboratory classes

Tutorials

24

Projects/seminars

Other (e.g. online)

Number of credit points

7

Lecturers

Responsible for the course/lecturer:

PhD Grzegorz Grzegorzczak

Responsible for the course/lecturer:

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Faculty of Control, Robotics and Electrical

Engineering

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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.



Course-related learning outcomes

Knowledge

Has knowledge of selected problems of higher mathematics.

Knows the application of higher mathematics to solve technical problems.

Skills

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

Can use mathematical apparatus in studies.

Social competences

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: knowledge is verified on the basis of written exam. The exam consists of 6 calculation tasks.

Passing threshold: 50%

Tutorials: knowledge is verified on the basis of one 75-minute test at the end of the semester. The written test consists of 5 tasks. Passing threshold: 50%

Programme content

The following content is realized both on lectures and tutorials

Elements of linear algebra:

- matrices and determinants,
- systems of linear equations,
- vectors, scalar and vector product,

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.



Bibliography

Basic

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

Additional

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

Breakdown of average student's workload

	Hours	ECTS
Total workload	175	7,0
Classes requiring direct contact with the teacher	50	2,0
Student's own work (literature studies, preparation for tutorials, preparation for tests/exam) ¹	125	5,0

¹ delete or add other activities as appropriate