



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

1/2

Profile of study

general academic

Course offered in

Polish

Requirements

compulsory

Number of hours

Lecture

24

Laboratory classes

Tutorials

26

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 the first semester.

The ability to think logically.

The ability to describe simple mathematical problems.

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 the need of developing mathematical knowledge.

Is aware of the need for lifelong learning.

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: surface and straight line in space.

Integral calculus of functions of one variable:

- indefinite integral,
- definite integral,
- applications of definite integral,
- improper integral and numerical series.

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, Szafranski, Ratajczak, Matematyka cz I, cz II, Wydawnictwo Politechniki Poznańskiej, Poznań 2004.

Additional

W. Krywicki, L. Włodarski, Analiza matematyczna w zadaniach 1, Wydawnictwo Naukowe PWN, Warszawa, 2013.

F. Leja, Rachunek różniczkowy i całkowy. Państwowe Wydawnictwo Naukowe, Warszawa 1978.

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