COURSE DESCRIPTION CARD - SYLLABUS

Course name
Mathematics

Course

Field of study
Engineering Management

Year/Semester
1/2

Area of study (specialization)

Profile of study
general academic

Level of study
First-cycle studies

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes

Other (e.g. online)

Tutorials
30

Projects/seminars

Number of credit points

4

Lecturers

Responsible for the course/lecturer:
Grzegorz Grzegorczyk

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Faculty of Control, Robotics and Electrical Engineering

Piotrowo 3A, 60-965 Poznań

Responsible for the course/lecturer:

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

P6S_WG_16 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, P6S_UW_14 Can use the basic knowledge of higher mathematics as a tool in management.

P6S_UW_15 Can use mathematical apparatus in studies.

Social competences

P6S_KO_02 Understands the need of developing mathematical knowledge.

P6S_KO_03 Is aware of the need for lifelong learning.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Knowledge acquired as part of the lecture is verified on the basis of a 90-minute "zero exam" on the 15th lecture. Students can also proceed to the exam during the exam session. Exam includes material from both semesters.

Skills acquired on tutorials are verified on the basis of two 75-minutes tests, which are realized on 7th and 14th meetings.

Programme content

Integral calculus of functions of one variable:

- indefinite integral,

- definite integral,

- applications of definite integral,

- improper integral and numerical series.

Ordinary differential equations - introduction.

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

Additional

W. Krysicki, 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	125	5
Classes requiring direct contact with the teacher	45	2
Student's own work (literature studies, preparation for tutorials, preparation for tests/exam) [1]	80	3

[1] delete or add other activities as appropriate