| Title | Code |
|---|---|
| **Mathematics (Matematyka)** | **1010401211010340162** |
| Field: **Technical Physics** | Year / Semester: **1 / 1** |
| Specialty: **-** | Course: **core** |
| Hours: Lectures: **4** Classes: **2** Laboratory: **-** Projects / seminars: **-** | Number of credits: **8** |
| | Language: **polish** |

## Lecturer:

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## Faculty:

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## Status of the course in the study program:

Core course of the study for Technical Physics, Faculty of Technical Physics.

## Assumptions and objectives of the course:

Knowledge improvement in basic math concepts and making use of some math results in solving problems.

## Contents of the course (course description):

Complex numbers. Matrix algebra, determinants. Systems of linear equations. Vectors in (dot and cross vector products). Lines and planes in . Sequences (e number). The derivative. The de L?Hospital Rule. Limits of the functions. Asymptotes. Monotonicity and concavity. Antiderivatives. The definite integral, area. Properties of definite integral. The Fundamental Theorem of Calculus. Infinite integrals. Parabolas, ellipses and hyperbolas. Spheres, cones, cylinders. Functions of several variables. Partial derivatives. Extrema of functions of several variables.

## Introductory courses and the required pre-knowledge:

Basic math knowledge on high school level.

## Courses form and teaching methods:

Lectures, exercises.

## Form and terms of complete the course - requirements and assessment methods:

Tests, oral examination.

## Basic Bibliography:

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## Additional Bibliography:

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