

Title <b>Calculus and linear algebra</b>	Code <b>1010331411010340612</b>
Field <b>Computer Science</b>	Year / Semester <b>1 / 1</b>
Specialty -	Course <b>core</b>
Hours Lectures: <b>2</b> Classes: <b>1</b> Laboratory: -    Projects / seminars: -	Number of credits <b>6</b>
	Language <b>polish</b>

**Lecturer:**

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**Faculty:**

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**Status of the course in the study program:**

Basic course for Science on Faculty of Electrical Engineering.

**Assumptions and objectives of the course:**

A thorough familiarity with differential and integral calculus and using it to description of practical problems. Getting the competence in tools of abstract algebra and modular arithmetic. Applications of matrices to solving of practical problems. Solving of systems of linear equations.

**Contents of the course (course description):**

Sequences and series. Function sequences and series. Differential calculus of functions of one and several variables. Integral calculus: indefinite and definite integral. Geometrical and technical application of the definite integrals. A contribution to differential equations. Applications of differential equations. Groups, polynomial rings, modular arithmetic. Matrices, determinants, systems of linear equations and method of Gaussian elimination. Elements of analytic geometry.

**Introductory courses and the required pre-knowledge:**

Basic knowledge of mathematics from secondary school.

**Courses form and teaching methods:**

Lectures illustrated by examples and counterexamples. Practical exercises on seminars.

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

Two tests and final exam.

**Basic Bibliography:**

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**Additional Bibliography:**

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