Title **Fundamentals of electricity and electronics**	Code **1010311321010320906**
Field **Power Engineering**	Year / Semester **1 / 2**
Specialty **-**	Course **core**
Hours Lectures: **2** Classes: **1** Laboratory: **1** Projects / seminars: **-**	Number of credits **5**
	Language **polish**

Lecturer:

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Status of the course in the study program:

Obligatory course at the Faculty of Electrical Engineering, majoring in electrical engineering, full time first degree studies.

Assumptions and objectives of the course:

Knowledge of physical quantities of electricity. Understanding the laws and methods of analysis of circuits: DC and AC sinusoidal phase 1 and 3

Contents of the course (course description):

History and basic concepts of Electrotechnical Standardization.Electrical signals and their classification. Introduction to electrical circuits with concentrated parameters and distributed.

Mathematical models of elements, principles the determination of voltages and currents. Transforming structures connection. The connection star-delta, and vice versa. Methods of analysis of linear circuits in terms of the matrix - the method of Kirchhoff's laws, loop currents, node potentials. Peripheral theorems: Thevenin, Norton, Tellegen, reciprocity and compensation. Power and energy. Adjusting the receiver to the source at maximum power. Single and three phase circuits. Resonance voltages and currents. Decline and loss of line voltage. Magnetic coupling. Elements of the topology of circuits. Structural Matrices.

Introductory courses and the required pre-knowledge:

Mathematics - among other things. algebra, trigonometry, complex numbers, calculus.

Courses form and teaching methods:

Lecture illustrated slides and simulation, accounting

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

Tests written for exercises

Basic Bibliography:

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Additional Bibliography:

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