

Title Electrotechnics	Code 1010331121010320269
Field Control Engineering and Robotics	Year / Semester 1 / 2
Specialty -	Course core
Hours Lectures: 3 Classes: 2 Laboratory: - Projects / seminars: -	Number of credits 6
	Language polish

Lecturer:

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Status of the course in the study program:

Obligatory subject, Electrical Engineering Faculty, Field: Control and Robotics, Full time undergraduate studies / Extramural undergraduate Studies.

Assumptions and objectives of the course:

The students should theoretical and practical problems electrical engineering. She should be able to calculate for constant and sinusoidal currents circuits.

Contents of the course (course description):

Basic elements and signals of electric circuit. The direct current steady state circuits analyze formulation of circuit equations ? Kirchhoff?s laws. Basic circuit theorems as follows: Thevenin?s, Norton?s theorems. Substitution and Reciprocity theorems. Branch-Current and Nodal methods. Power and energy in steady state. Maximum power transfer.
The sinusoidal steady state basis: R.M.S. value, phasor formulation of circuit equations and circuit theorems, phasor diagrams, concept of impedance and admittance. Power and energy in steady state. Series and parallel resonance circuit. Three phase circuits. Steady state behavior of periodic signal linear circuits ? Fourier series approach. Circuit response to a nonsinusoidal input. Transient analysis. Laplace transforms, stability. Two-port models of circuit.

Introductory courses and the required pre-knowledge:

The basic knowledge of electrical science (theory), equation Cramer?a, complex numbers theory, elements of ordinary differential equations.

Courses form and teaching methods:

Lectures, supported by transparencies and slides, computational classes.

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

Written examination.

Basic Bibliography:

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Additional Bibliography:

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