

Title Electromagnetic Field Theory	Code 1010321231010320141
Field Electrical Engineering	Year / Semester 2 / 3
Specialty -	Course core
Hours Lectures: 2 Classes: 1 Laboratory: 1 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: Electrical Engineering, Extramural Professional Studies.

Assumptions and objectives of the course:

Student should obtain knowledge and deep understanding of electromagnetic fields laws, both in integral and differential formulation. He/She should be able to calculate fields analytically and have an idea of a computer-aided approach.

Contents of the course (course description):

Electromagnetic field (physical definition). Lorentz force. Electrostatic fields. Steady current fields. Magnetostatic fields. Energy and forces in systems of charged bodies. Energy and forces in systems of current circuits. Quasi-static electromagnetic fields. Law of electromagnetic induction. Maxwell equations. Electrodynamical potentials. Electromagnetic waves. Harmonic fields in conductors, dielectrics and dissipative media. Energy, power and Poynting theorem. Transmission lines.

Introductory courses and the required pre-knowledge:

Calculus, differential equations, vector analysis (mathematics), fundamentals of electrodynamics (physics), electric circuit theory.

Courses form and teaching methods:

Lectures supported by transparencies. Laboratory experiments.

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

Examination at the end of the semester.

Basic Bibliography:

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Additional Bibliography:

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