

Title Electromagnetic field theory	Code 1018011310108400059
Field Electronics and Telecommunications	Year / Semester 2 / 3
Specialty -	Course core
Hours Lectures: 1 Classes: 2 Laboratory: - Projects / seminars: -	Number of credits 0
	Language polish

Lecturer:

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Status of the course in the study program:

- Obligatory course in the study programs of the Faculty of Electronics and Telecommunication.

Assumptions and objectives of the course:

- Deep understanding of the laws governing electromagnetic fields. Ability of calculation of the simple electromagnetic systems. Knowledge of principles of wave propagation in the free space and along guiding media as well as antenna radiation.

Contents of the course (course description):

- Transmission line equations in transient and steady state. Secondary parameters of the line: characteristic impedance propagation coefficient. Reflection coefficients, VSWR, Smith chart. Standing and traveling waves. Dispersion in transmission line, group and phase velocity. Waveguides and mode theory, TE and TM waves. Resonators. Retarded potentials, near and far fields. Hertz dipole, radiation characteristic, directivity and gain of the antenna.

Introductory courses and the required pre-knowledge:

- Mathematics: fundamentals differential and integral calculus of three variables. Elements ordinary and partial differential equations, vector analysis, course of electric circuit theory.

Courses form and teaching methods:

- Lectures supported by computer programs and video demonstrations, classes

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

- Written and oral examination.

Basic Bibliography:

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Additional Bibliography:

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