Title	Code
Waves and antennas	**1018011410108400068**
Field: **Electronics and Telecommunications**	Year / Semester: **2 / 4**
Specialty: **-**	Course: **core**
Hours: Lectures: **1** Classes: **-** Laboratory: **2** Projects / seminars: **-**	Number of credits: **0**
	Language: **polish**

Lecturer:

- dr inż. J. Szóstka
dr hab. inż. Wojciech Bandurski prof.PP
Wydział Elektroniki i Telekomunikacji
ul. Polanka 3
60-965 Poznań
tel. 061 665 3848
e-mail:szostka@et.put.poznan.pl
wojciech.bandurski@put.poznan.pl

Faculty:

Faculty of Electronics and Telecommunications
ul. Piotrowo 3A
60-965 Poznań
tel. (061) 665-2293, fax. (061) 665-2572
e-mail: office_det@put.poznan.pl

Status of the course in the study program:

- Mandatory course for students of Electronics and Telecommunications.

Assumptions and objectives of the course:

- To provide a student with an introduction to electromagnetic field theory, antenna techniques and propagation of radio waves. Students acquire basic engineering skills during laboratory exercises. After the course students are prepared for antenna design, maintenance and measurements, as well as for studying other courses related to radio communications.

Contents of the course (course description):

- Basic parameters of antennas, short dipole, half-wavelength dipole, different types of antennas (wire, aperture, slot, microstrip, helical, broadband), antenna feeding, image theory, antenna applications in communication systems, antenna measurements, wave propagation in Earth's atmosphere, propagation of long, medium, short waves and microwaves, propagation measurements, RF safety standards.

Introductory courses and the required pre-knowledge:

- Mathematics: differential and integral calculus of three variables. Ordinary and partial differential equations, vector analysis, course of basic electromagnetic field theory.

Courses form and teaching methods:

- Lecture with audiovisual techniques, laboratory

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

- examintion after 5th semester, tests before laboratory excersises

Basic Bibliography:

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Additional Bibliography:

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