

Title Optoelectronics	Code 1010324281010320374
Field Electrical engineering	Year / Semester 4 / 8
Specialty -	Course core
Hours Lectures: 8 Classes: - Laboratory: 8 Projects / seminars: -	Number of credits 2
Language polish	

Lecturer:

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Status of the course in the study program:

Obligatory course, Faculty of Electrical Engineering, field Electrotechnics.

Assumptions and objectives of the course:

Knowledge of modern optoelectronic instruments, interdisciplinary applications of optoelectronic methods, devices and elements.

Contents of the course (course description):

Optical radiation, photometry, optoelectronics: basic terms, quantities and units of measurement. Obligatory rules and standards. Electro-optical analogies. Kinds of interaction between optical radiation and objects. Sources, receivers and transducers of optical quantities. Optical fiber cables, elements and sensors. Acquisition, transmission and conditioning of measurement optical signals in measuring systems. Industrial optoelectronic links. Metrological and operation attributes of modern optoelectronic instrumentation. Accuracy of optoelectronic measurements. Selected applications of optoelectronic elements and equipment. Examples of measurements of non-electrical quantities with optoelectronic methods.

Introductory courses and the required pre-knowledge:

Fundamentals of physics, electronics and metrology, properties of electromagnetic radiation, structure and parameters of semiconductor elements.

Courses form and teaching methods:

Lectures, laboratory exercises.

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

Reports on laboratory, a written test after the lectures.

Basic Bibliography:

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Additional Bibliography:

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