

Title <b>Metrology</b>	Code <b>1010321231010320140</b>
Field <b>Electrical engineering</b>	Year / Semester <b>2 / 3</b>
Specialty -	Course <b>core</b>
Hours Lectures: <b>3</b> Classes: -    Laboratory: <b>1</b> Projects / seminars: -	Number of credits <b>5</b>
Language <b>polish</b>	

**Lecturer:**

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**Faculty:**

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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 measurement methodology, attributes of modern measuring instrumentation and equipment, principles of using analog and digital measuring devices, and evaluation of measurement results.

**Contents of the course (course description):**

Methodology of measurements: definitions, terms, units of measurement. The current standards and recommendations. Kinds of experiments. Planning and accomplishment of measuring tasks. Modeling of measurement objects and signals. Analysis of errors and uncertainty of measurement results. Static and dynamic properties of measuring devices and instruments. Methods of measurement. Measuring transducers and sensors. Detectors of alternating voltage. Properties and application of measuring amplifiers. A/C and C/A converters. Electromechanical and electronic measuring devices. Analog and digital measurements of electrical quantities. Recording of measurement data. Measurements with oscilloscopes. Introduction to measuring systems. Examples of measurements of electrical and nonelectrical quantities and evaluation of their results.

**Introductory courses and the required pre-knowledge:**

Fundamentals of mathematics, physics, electrotechnics and electronics.

**Courses form and teaching methods:**

Lectures, laboratory exercises.

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

Tests and reports on laboratory exercises, an exam.

**Basic Bibliography:**

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**Additional Bibliography:**

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