

Title Fundamentals of metrology (Podstawy metrologii)	Code 1010401121010220619
Field EDUCATION IN TECHNOLOGY AND INFORMATICS	Year / Semester 1 / 2
Specialty -	Course core
Hours Lectures: 2 Classes: - Laboratory: 1 Projects / seminars: -	Number of credits 3
	Language polish

Lecturer:

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Faculty:

Faculty of Technical Physics
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Status of the course in the study program:

Obligatory

Assumptions and objectives of the course (in the form of learning outcomes):

Presentation to students the fundamentals of metrology and measurement science, measuring methods, uncertainty evaluation; to bring students an opportunity to perform some practical exercises to understand the issue better and to apply gained knowledge.

Contents of the course (course description):

History of measurement sciences, units, SI units. Gauges and their characteristics and hierarchy, conformity of measurement with units system. Work with data sets, sampling and quantization, signal processing, aliasing and filtering, quantization error. Measuring methods (direct, indirect etc.). Measurement error and uncertainty. Uncertainty estimation methods (A and B). Static and dynamic characteristics of the measuring transducers.

Introductory courses and the required pre-knowledge:

Basic knowledge on mathematical statistics and theory of probability. Integral and differential calculus, partial derivative, basic trigonometry.

Courses form and teaching methods:

Lectures with multimedial presentations and board drawings. Laboratory exercises and presentation of advanced metrological equipment available in the Division of Metrology and Measurement Systems.

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

Written end test on the theoretical knowledge, continuous evaluation of the preparation and activity during laboratory works.

Basic Bibliography:

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Additional Bibliography:

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