

**DOCTORAL SCHOOL OF WROCLAW UNIVERSITY OF SCIENCE AND
TECHNOLOGY**

SUPERVISOR DECLARING/CONDUCTING COURSE: Andrzej Szczurek, PhD, DSc
DEPARTMENT: Faculty of Environmental Engineering
SCIENTIFIC DISCIPLINE: environmental engineering, mining, and energy

COURSE CARD

Course name in Polish: Miernictwo
Course name in English: Metrology
Course language: polish / ~~english~~
The course is intended for all PhD students: YES / ~~NO~~

- 1) ~~BASIC COURSE~~
- 2) ~~SPECIALIST COURSE~~
- 3) ~~SEMINAR~~
- 4) ~~HUMANISTIC COURSE~~
- 5) ~~LANGUAGE~~
- 6) ~~RESEARCH SKILLS~~

Subject code: IGQ100221W

* delete as applicable

	Lecture	Foreign language course	Seminar	Mixed forms
Number of hours of organized classes in university (ZZU)	15			
Grading	Exam	Exam	Oral presentation	Exam, inspection, evaluation classes

PREREQUISITES RELATING TO KNOWLEDGE, SKILLS AND OTHER COMPETENCES

1. Basic knowledge concerning measurement of physical and chemical properties of the matter.

COURSE OBJECTIVES

- C1. The course provides the knowledge about the principles of the metrology of physical and chemical quantities

PROGRAM CONTENTS

Form of classes		Number of hours
Lec 1	Introduction	1
Lec 2	Definition of a measurement, measurement error, uncertainty	2
Lec 3	Measurement principle, measurement procedure, measurement method	2

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Lec 4	Validation of measurement method	2
Lec 5	Definition of measuring instruments and their classification	2
Lec 6	Control of the measurement instruments	2
Lec 7	Calibration	2
Lec 8	Calibration	2
	Total hours	15

TEACHING TOOLS USED

N1. Inform lecture
N2. Problem lecture

ACHIEVED SUBJECT LEARNING OUTCOMES

Type of learning outcome	Code of learning outcome	Assessment of learning outcome
knowledge	P8S_WG	Exam
knowledge	P8S_WK	Exam

PRIMARY AND SECONDARY LITERATURE

PRIMARY LITERATURE:

[1] Jan Cieplucha: Podstawy metrologii, Wydawnictwo Politechniki Łódzkiej, 2008

SUBJECT SUPERVISOR (NAME AND SURNAME, E-MAIL ADDRESS)

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