

Cracow University of Technology

**Course syllabus**

binding for the doctoral students of the CUT Doctoral School commencing their studies  
in the academic year 2022/2023

**Information on the course**

Name of the course in Polish	Teoria Eksperymentu
Name of the course in English	Experiment Theory
Number of the ECTS points	2
Language of instruction	Polish
Category of the course	Choosable
Field of education	Engineering and Technology
Discipline of education	Civil Engineering and Transport
Person responsible for the course Contact	CUT Prof. Alicja Kowalska-Koczwara PhD Eng. akowalska@pk.edu.pl

**Type of course, number of hours in the study programme curriculum**

Semester	Credit type (G / NG)*	Lecture	Practical classes	Laboratory	Computer Lab	Project Class	Seminar
2, 3, 4, 5	G	30	0	0	0	0	0

\*G – graded credit, NG – non-graded credit

**Course objectives**

Code	Objective description
Objective 1	To acquaint students with the meaning of experiment in technical sciences and with the basic concepts of the theory of experiment
Objective 2	To acquaint students with the methodology of the experiment, types, division of experimental research and measurement technique
Objective 3	To familiarize students with the planning of experiments on building structures and the preparation of the results of these experiments.

**Learning Outcomes**

Code	Description of the learning outcome adjusted to the specific characteristics of the discipline	Learning outcome symbol in the CUT SD	Methods of verification
<b>OUTCOMES RELATED TO KNOWLEDGE</b>			
EUW1	The graduate knows and understands to the extent that it is possible to revise the existing paradigms - world achievements, including theoretical foundations and general issues and selected specific issues - appropriate for a given scientific discipline	E_W01	Involvement in class activities

EUW2	The graduate knows and understands the methodology of scientific research	E_W03	Involvement in class activities
<b>OUTCOMES RELATED TO SKILLS</b>			
EUU1	A graduate is able to use knowledge from various fields of science or art to identify creatively and innovatively solve complex problems or perform research tasks, in particular:  - define the purpose and subject of research,  - formulate a research hypothesis,  - develop methods, techniques and research tools and use them creatively,  - make conclusions on the basis of scientific research.	E_U01	Involvement in class activities, a written assignment assessment
EUU2	A graduate is able to make a critical analysis and evaluation of the results of scientific research, expert activity and other creative works and their contribution to the development of knowledge	E_U02	Involvement in class activities, a written assignment assessment
EUU3	A graduate is able to independently plan and act for his own development as well as inspire and organize the development of other people.	E_U010	Involvement in class activities, a written assignment assessment
<b>OUTCOMES RELATED TO SOCIAL COMPETENCES</b>			
EUK1	A graduate is ready to critically evaluate the achievements of a given scientific discipline	E_K01	Involvement in class activities, a written assignment assessment

### Course outline

No.	Contents	Learning outcomes for the course	No. of hours
<b>LECTURE</b>			
W1	The importance of experiment in technical sciences, basic concepts of experiment theory with application examples	EUW1, EUU1, EUK1,	8
W2	Methodology of the experiment, types and division of experimental research and measurement techniques	EUW1, EUU1, EUU2, EUK1,	8
W3	Planning of experiments on building structures, development of the results of these experiments, computer-aided experiment	EUW1, EUW2, EUU1, EUU2, EUK1,	7
W4	Quasi experiment and some more statistics	EUW2, EUU2, EUU3, EUK1,	7

### The ECTS points statement

<b>WORKING HOURS SETTLEMENT</b>	
Type of activity	Average number of hours (45 min.) dedicated to the completion of an activity type

SCHEDULED CONTACT HOURS WITH AN ACADEMIC TEACHER	
Hours allotted in the syllabus	30
Consultations	2
Examination / course credit assignment	2
HOURS WITHOUT THE PARTICIPATION OF AN ACADEMIC TEACHER	
Independent study of the course contents	16
Preparation of a paper, a report, a project, a presentation, a discussion	10
ECTS POINTS STATEMENT	
Total number of hours	60
The ECTS points number	2

#### Preliminary requirements

No.	Requirements
1	Not specified

#### Course credit assignment conditions / method of the final grade calculation

No.	Description
COURSE CREDIT ASSIGNMENT CONDITIONS	
1	75% attendance in class.
2	Written credit - competency test.
METHOD OF THE FINAL GRADE CALCULATION	
Test grade including attendance	

#### Additional information

Not specified
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#### The course reading list

1	Polanski Z. — Planowanie doswiadczen w technice, Warszawa, 1984, PWN
2	Górecka R. — <i>Teoria i technika eksperymentu</i> , Kraków, 1996, Politechnika Krakowska
3	Conference materials and contemporary literature