

DESCRIPTION OF THE COURSE OF STUDY

Course code	0719-2ID-C17-PPF	
Name of the course in	Polish	Pracownia podstaw fizyki
	English	Basic Physics Laboratory

1. LOCATION OF THE COURSE OF STUDY within the system of studies

1.1. Field of study	Data Engineering
1.2. Mode of study	Full-time
1.3. Level of study	First-cycle engineering studies
1.4. Profile of study*	General academic
1.5. Person/s preparing the course description	dr inż. Milena Piotrowska
1.6. Contact	milena.piotrowska@ujk.edu.pl

2. GENERAL CHARACTERISTICS OF THE course of study

2.1. Language of instruction	English
2.2. Prerequisites*	Basic knowledge of physics and mathematics at the secondary-school level.

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes		Laboratory
3.2. Place of classes		Classes held in UJK teaching rooms (on campus)
3.3. Form of assessment		Pass with a grade
3.4. Teaching methods		demonstration; demonstration with explanation; measurement; hands-on exercises; laboratory work
3.5. Bibliography	Required reading	1. D. Halliday, R. Resnick, J. Walker, <i>Fundamentals of Physics</i> , 12th Edition, Wiley, 2021. 2. P. G. Hewitt, <i>Conceptual Physics</i> , 13th Edition, Pearson, 2022. 3. D. C. Giancoli, <i>Physics: Principles with Applications</i> , 7th Edition, Pearson, 2016.
	Further reading	1. J. S. Trefil, <i>Physics Matters: An Introduction to Conceptual Physics</i> , Wiley, 2017. 2. D. Loyd, <i>Physics Laboratory Manual</i> , 5th Edition, Brooks/Cole, 2013.

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1. Course objectives (including form of classes)
Laboratory: C1. Ability to correctly use measuring instruments in the study of physical phenomena. C2. Ability to plan and carry out experiments based on the laws of physics. C3. Understanding selected physical phenomena and processes through practical investigation. C4. Ability to process measurement results, present findings and draw conclusions. C5. Ability to estimate and interpret measurement uncertainties.
4.2. Detailed syllabus (including form of classes)
Laboratory: Experiments demonstrating fundamental laws and physical phenomena in the areas of kinematics, dynamics, mechanical waves, thermodynamics, structure of matter, electricity and magnetism, and electromagnetic waves.

4.3 Intended learning outcomes

Code	A student, who passed the course	Relation to learning outcomes
within the scope of KNOWLEDGE:		
W01	Knows and understands selected physical laws and phenomena and their application in measurements and data analysis.	ID1A_W03
W02	Understands the principles of operation and use of simple measuring instruments and laboratory health and safety rules.	ID1A_W04
within the scope of ABILITIES:		
U01	Can plan and conduct a basic physics experiment and correctly record data.	ID1A_U03
U02	Can analyse and interpret measurement results, including uncertainties.	ID1A_U02
within the scope of SOCIAL COMPETENCE:		
K01	Can collaborate in a team, organise work and use reliable sources.	ID1A_K01

4.4. Methods of assessment of the intended learning outcomes

17. 17. Methods of assessment of the intended learning outcomes																					
Teaching outcomes (code)	Method of assessment (+/-)																				
	Exam oral/written*			Test*			Report*			Effort in class*			Self-study*			Group work*			Others* e.g. standardized test used in e-learning		
	Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes		
	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...
W01							+			+											
W02							+			+											
U01							+			+						+					
U02							+			+						+					
K01							+			+						+					

*delete as appropriate

4.5. Criteria of assessment of the intended learning outcomes

Form of classes	Grade	Criterion of assessment
Laboratory (L)	3	achievement of <50 - 60) % of the assessment requirements
	3,5	achievement of <60 -70) % of the assessment requirements
	4	achievement of <70 - 80) % of the assessment requirements
	4,5	achievement of <80 - 90) % of the assessment requirements
	5	achievement of <90 -100> % of the assessment requirements

5. BALANCE OF ECTS CREDITS - STUDENT'S WORK INPUT

Category	Student's workload	
	Full-time studies	Extramural studies
NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/	30	
Participation in laboratories	30	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	20	
Preparation for laboratory	5	
Preparation of reports	15	
TOTAL NUMBER OF HOURS	50	
ECTS credits for the course of study	2	

*delete as appropriate

Accepted for execution (date and legible signatures of the teachers running the course in the given academic year)

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