

DESCRIPTION OF THE COURSE OF STUDY

Course code	0719-2ID-C12-IDwF	
Name of the course in	Polish	<i>Inżynieria danych w fizyce</i>
	English	<i>Data Engineering in Physics</i>

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 profile
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	Polish
2.2. Prerequisites*	Knowledge of the basics of physics and mathematics at the high school level.

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes	Lecture (15 h), project (15 h)	
3.2. Place of classes	Classes in UJK teaching rooms	
3.3. Form of assessment	Lecture – ZO; project - ZO	
3.4. Teaching methods	Informative lecture, case analysis, project work, presentation of results.	
3.5. Bibliography	Required reading	1. P.R. Bevington <i>analiza danych w naukach ścisłych i technice</i> , PWN 2. G. L. Squires, <i>Praktyczna fizyka</i> , PWN, Warszawa 1992 3. P.R. Bevington and D.K. Robinson, <i>Data Reduction and error analysis for the physical sciences</i> , McGraw-Hill, Inc., ISBN0-07-911243-9
	Further reading	

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1 Course objectives (including form of classes)

Lecture:

- C1. To introduce students to the system of physical units and the principles of applying physical quantities in data engineering.
C2. To explain methods of acquiring and recording measurement data, as well as the principles of their analysis and interpretation in the context of physical applications.
C3. To present the possibilities of using experimental data in the analysis of physical phenomena, taking into account their engineering applications.

Project:

- C1. To develop the ability to plan and carry out simple physical experiments and analyze the collected data.
C2. To build competence in using tools for processing and visualizing measurement data.
C3. To improve teamwork skills and the ability to present experimental results.

4.2 Detailed syllabus (including form of classes)

ChatGPT powiedział:

Lecture / Project:

Physical quantities, units, and the SI system. Fundamentals of physical measurements. Data collection and recording. Introduction to data analysis. Basics of data processing and visualization. Applications of physics and data in the context of engineering.

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 the system of measurement units, basic physical quantities, and the principles of their application in data analysis.	ID1A_W03
W02	understands the course and significance of physical experiments in the process of acquiring measurement data used in an engineering context. world.	ID1A_W03 ID1A_W04

within the scope of ABILITIES:		
U01	is able to analyze the course of a physical phenomenon and present its interpretation based on the collected data.	ID1A_U02
U02	is able to plan a simple physical experiment, take measurements, perform an analysis, and present the results using data processing tools.	ID1A_U02 ID1A_U03
within the scope of SOCIAL COMPETENCE:		
K01	is able to plan project activities, define objectives, and use reliable sources of information in the implementation of both team and individual tasks.	ID1A_K01

4.4. Methods of assessment of the intended learning outcomes

Teaching outcomes (code)	Method of assessment (+/-)																		Others* e.g. standardized test used in e-learning
	Exam oral/written*			Test*			Effort in class*			Report*			Self-study*			Group work*			
	Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			
	L	P	..	L	P	..	L	P	..	L	P	..	L	P	..	L	P	..	
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
lecture (L) (including e-learning)	3	Achievement of <50-60)% of the requirements specified in the assessment methods
	3,5	Achievement of <60-70)% of the requirements specified in the assessment methods
	4	Achievement of <70-80)% of the requirements specified in the assessment methods
	4,5	Achievement of <80-90)% of the requirements specified in the assessment methods
	5	Achievement of <90-100)% of the requirements specified in the assessment methods
cProject (P)* (including e-learning)	3	Achievement of <50-60)% of the requirements specified in the assessment methods
	3,5	Achievement of <60-70)% of the requirements specified in the assessment methods
	4	Achievement of <70-80)% of the requirements specified in the assessment methods
	4,5	Achievement of <80-90)% of the requirements specified in the assessment methods
	5	Achievement of <90-100)% of the requirements specified in the assessment methods

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 lectures*	15	
Project	15	
INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/	20	
Preparation for the exam/test*	5	
Preparation of project documentation - report*	10	
Project	5	
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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