University of Gdańsk

Subject card

Subject name and code	Analysis of Experimental Data , PG_00204790		
Field of study	Nuclear safety and radiological protection		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	1	Language of instruction	Polish
Semester of study	1	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Faculty of Mathematics, Physics and Informatics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Marek Józefowicz, prof. UG	
	Teachers	dr hab. Marek Józefowicz, prof. UG dr Justyna Barzowska	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						

Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
	Number of study hours	30	0.0	30.0	60

Subject objectives	not applicable

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BJORL3_U02] Has the ability to perform measurements of basic quantities used in physics and chemistry; can develop, describe and present the results of simple experiments and computer simulations; can perform quantitative analyses and formulate qualitative conclusions on this basis; can estimate measurement uncertainties.	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[BJORL3_W12] Has an advanced knowledge and understanding of the mathematical and statistical methods used in data analysis.	not applicable	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
[BJORL3_W03] Has advanced knowledge and understanding of the principles of planning and conducting simple physical and chemical experiments and analyzing obtained results; has knowledge and understanding of the fundamentals of measurement uncertainty as applied to experiments, the base SI units and the most important derived units, as well as other systems of units.	not applicable	[SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[BJORL3_U06] Is able to use basic application software packages for presentation of results and data analysis.	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work
[BJORL3_U04] Can use mathematical and computer apparatus to analyze and solve problems in radiological protection and nuclear safety.	not applicable	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work

Subject contents

1. Basic concepts concept of measurement, direct and indirect measurements, representation of measurement uncertainties, and rounding of results.
2. Mean value and standard (statistical) uncertainty (deviation) of a series of direct measurements.
3. Mean value of a series of independent and dependent indirect measurements.
4. Evaluation of the maximum uncertainty in indirect measurements using the total differential method.
5. Combined standard uncertainty of a series of independent and dependent indirect measurements.
6. Evaluation of uncertainty in cases where random and systematic uncertainties are comparable.
7. Graphical representation of experimental data, selection of scale and units, presentation of measurement errors on graphs, and interpretation of relationships between physical quantities.
8. Linear regression method fitting a linear function to experimental results.

Prerequisites and co-requisites

not applicable

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
not applicable	0.0%	10.0%
not applicable	51.0%	30.0%
not applicable	51.0%	60.0%

Recommended reading

Basic literature	not applicable
Supplementary literature	not applicable
eResources addresses	

Example issues/ example questions/ tasks being completed

not applicable

Work placement

Not applicable

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