GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Experimental methods in physics, PG_00059251		
Field of study	Civil Engineering		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2025/2026
Education level	first-cycle 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	2	ECTS credits	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Institute Of Nanotechnology And Materials Engineering -> Faculty Of Applied Physics And Mathematics -> Wydziały Politechniki Gdańskiej		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tadeusz Miruszewski	
	Teachers		

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	0.0	15.0	0.0	0.0	15

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	15	2.0	8.0	25

Subject objectives

Students realize five laboratory experiments:1. Measurement of the center of gravity2. Young's modulus measurement3. Measurement of the modulus of elasticity4. Measurement of the coefficient of linear expansion5. Resistance measurement using a Wheatstone bridgeStudents are to perform measurements, process the results and discuss the obtained results.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W01] Demonstrate knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering at a level necessary to achieve the other programme outcomes.	Students gets with the measuring apparatus, independently realizes measurments, discusses the results of measurments.	[SW3] Assessment of knowledge contained in written work and projects
[K6_U01] Apply knowledge and understanding of mathematics as well as sciences and engineering disciplines underlying civil engineering to solve engineering problems and issues.	The student will learn to use measuring equipment, learn about the linear regression method, learn to estimate measurement uncertainties.	[SU5] Assessment of ability to present the results of task [SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment

Subject contents

Measurement of Young's modulus, measurement of the spring constant, measurement of the linear expansion coefficient, measurement of the center of mass of a system of bodies and measurement of the resistance of individual resistances

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
taking measurements and reports	50.0%	100.0%

Recommended reading	Basic literature	Exercise instructions: https://ftims.pg.edu.pl/wydzial/laboratoria-wydzialowe/laboratorium-z-fizyki-czesc-1
	Supplementary literature	Fundamentals of Physics D. Halliday, R Resnick, J. Walker
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	Graph linearizationLinear regression methodCorrect record of the final result	
Work placement	Not applicable	

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