



Subject card

Subject name and code	Physics laboratory I (mechanics and heat), PG_00034522						
Field of study	Technical Physics						
Date of commencement of studies	October 2021		Academic year of realisation of subject		2021/2022		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research 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 Classes can be held in English (e.g. for the Erasmus+ students)		
Semester of study	2		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Instytut Fizyki i Informatyki Stosowanej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Justyna Szostak				
	Teachers		dr inż. Daniel Pelczarski dr hab. inż. Grażyna Jarosz dr inż. Justyna Szostak dr inż. Damian Głowienka				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	45.0	0.0	0.0	45
	E-learning hours included: 0.0						
	Adresy na platformie eNauczanie:						
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	45		5.0		50.0	100
Subject objectives	Learn how to perform basic experiments and determine physical quantities related to mechanics and heat.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_W07		Knows the structure and operating principles of physical instruments, and measuring apparatus.		[SW3] Assessment of knowledge contained in written work and projects		
	K6_U04		Knows how to plan and conduct physical experiments. Knows how to assess experimental results properly.		[SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools		
	K6_W08		Has extended knowledge on planning and conducting experiments and critical analyses of the obtained results.		[SW3] Assessment of knowledge contained in written work and projects		
	K6_W12		Knows principles of occupational safety and hygiene.		[SW1] Assessment of factual knowledge		
	K6_W02		Has extended, detailed knowledge regarding mechanics and heat.		[SW1] Assessment of factual knowledge		

Subject contents	1. Determination of a denisty of a liquid. 2. Motion along a straight line with constant acceleration. 3. Free fall of a body - analysis of motion and determination of acceleration due to gravity. 4. Analysis of elastic collisions of two bodies. 5. Determination of a spring constant. 6. Determination of a moment of inertia. 7. Determination of a Young's modulus. 8. Determination of a shear modulus by Gauss method. 9. Investigation of a centripetal force. 10. Determination of a coefficient of linear thermal expansion. 11. Measurement of the boiling point of water as a fuction of pressure. 12. Determination of thermal conductivity coefficient of selected materials.		
Prerequisites and co-requisites	No requirements		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Laboratory	60.0%	100.0%
Recommended reading	Basic literature	1. Materiały dydaktyczne na http://www.mif.pg.gda.pl/ 2. D. Holliday, R. Resnick, J. Walker, Fundamental of Physics, 8th Edition, Wiley 2008.	
	Supplementary literature	No requirements	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Newton's law of gravity.		
Work placement	Not applicable		