



Subject card

Subject name and code	Mechanics for engineers, PG_00061898						
Field of study	Materials Engineering						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2023/2024		
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		
Semester of study	2	ECTS credits			5.0		
Learning profile	general academic profile	Assessment form			exam		
Conducting unit	Instytut Nanotechnologii i Inżynierii Materiałowej -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Jakub Karczewski				
	Teachers		dr hab. inż. Jakub Karczewski				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	0.0	0.0	0.0	60
	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	60	5.0		60.0		125
Subject objectives	Getting to know the basic laws of classical physics. Acquiring the ability to analyze physical phenomena and technical issues based on the laws of physics.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_U01] Can properly use selected analytical, simulation and experimental methods, as well as devices for measuring the fundamental properties of materials and technological processes.	The student is able to solve tasks related to the basics of classical physics. Knows basic research methods and ways of defining and determining basic physical quantities			[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools		
	[K6_U05] can learn independently	The student is able to use both traditional and modern methods of acquiring knowledge in the field of classical physics.			[SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools		
	[K6_W02] has knowledge of physics and chemistry, useful for formulating and solving simple problems within the scope of materials science	The student has basic knowledge of classical mechanics, basic optics and thermodynamics			[SW1] Assessment of factual knowledge		
	[K6_K01] Understands the need to improve professional and personal competencies; is conscious of own limitations and knows when to turn to experts, properly establishes priorities helping to accomplish tasks defined by oneself or others.	The student has knowledge of the basics of classical physics. Understands the need to understand them in the context of solving professional problems. Is able to independently deepen knowledge in this area.			[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice		

Subject contents	Algebra wektorów Kinematyka Dynamika Zasady zachowania Bryła sztywna Drgania Fale		
Prerequisites and co-requisites	knowledge of the basics of physics at high school level		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	oral exam	50.0%	30.0%
	exam	40.0%	20.0%
	colloquium on accounts	50.0%	50.0%
Recommended reading	Basic literature	M.Herman, A.Kalestyński, L.Widomski, Podstawy Fizyki dla kandydatów na wyższe uczelnie i studentów, WN PWN, Warszawa J. Massalski, M. Massalska Fizyka dla Inżynierów, WNT Warszawa	
	Supplementary literature	D.Halliday, R.Resnick, J.Walker, Podstawy Fizyki, PWN, Warszawa	
	eResources addresses	Adresy na platformie eNauczanie: mechanika dla inżynierów - Moodle ID: 38486 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=38486	
Example issues/ example questions/ tasks being completed	-		
Work placement	Not applicable		