



Subject card

Subject name and code	Classical mechanics, PG_00037296							
Field of study	Technical Physics							
Date of commencement of studies	October 2020	Academic year of realisation of subject			2021/2022			
Education level	first-cycle studies	Subject group			Optional subject group 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	2	Language of instruction			Polish			
Semester of study	3	ECTS credits			5.0			
Learning profile	general academic profile	Assessment form			exam			
Conducting unit	Department of Atomic, Molecular and Optical Physics -> Faculty of Applied Physics and Mathematics							
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Radosław Szmytkowski					
	Teachers		prof. dr hab. Radosław Szmytkowski					
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							
Adresy na platformie eNauczanie: Mechanika klasyczna (semestr zimowy 2021/22) - Moodle ID: 18648 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18648								
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	Students become acquainted with fundamentals of classical mechanics.							
Learning outcomes	Course outcome		Subject outcome			Method of verification		
	K6_W02		Student possesses knowledge in fundamentals of classical mechanics.			[SW1] Assessment of factual knowledge		
	K6_U02		Student is able to solve simple problems in classical mechanics.			[SU4] Assessment of ability to use methods and tools		
Subject contents	1. Kinematics of a particle. 2. Dynamics of a particle and of systems of particles. 3. Elements of Lagrangian and Hamiltonian mechanics.							
Prerequisites and co-requisites								
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade		
	Written exam (problems)		50.0%			50.0%		
	Oral exam (theory)		50.0%			50.0%		

Recommended reading	Basic literature	<p>1. H. C. Corben, P. Stehle, Classical mechanics, 2nd ed., Dover, New York, 1994</p> <p>2. H. Goldstein, Classical mechanics, Addison-Wesley, Cambridge, MA, 1950</p> <p>3. I. V. Savelyev, Fundamentals of theoretical physics. Vol. 1: Mechanics, electrodynamics, Mir, Moscow, 1982</p>
	Supplementary literature	<p>1. M. G. Calkin, Lagrangian and Hamiltonian mechanics, World Scientific, Singapore, 1996</p> <p>2. C. Lanczos, The variational principles of mechanics, 4th ed., Dover, New York, 1986</p> <p>4. D. ter Haar, Elements of Hamiltonian mechanics, 2nd ed., Pergamon, Oxford, 1971</p>
	eResources addresses	Mechanika klasyczna (semestr zimowy 2021/22) - Moodle ID: 18648 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=18648
Example issues/ example questions/ tasks being completed	<p>1. Particle in a central field.</p> <p>2. Lagrange equations of the first and second kinds.</p> <p>3. Hamilton equations.</p>	
Work placement	Not applicable	