GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Classical mechanics, PG_00037296		
Field of study	Technical Physics		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2024/2025
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		

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

Students become acquainted with fundamentals of classical mechanics.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W02] Has systematized knowledge of the basics of physics, including mechanics, thermodynamics, electricity and magnetism, optics, atomic and particle physics, solid-state physics, nuclear and elementary particle physics.	Student possesses knowledge in fundamentals of classical mechanics.	[SW1] Assessment of factual knowledge
[K6_U02] Can analyze and solve simple scientific and technical problems, based on possessed knowledge, using analytical, numerical, simulation and experimental methods.	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
Oral exam (theory)	50.0%	50.0%
Written exam (problems)	50.0%	50.0%

Recommended reading	Basic literature	1. H. C. Corben, P. Stehle, Classical mechanics, 2nd ed., Dover, New York, 1994 2. H. Goldstein, Classical mechanics, Addison-Wesley, Cambridge, MA, 1950 3. I. V. Savelyev, Fundamentals of theoretical physics. Vol. 1: Mechanics, electrodynamics, Mir, Moscow, 1982
	Supplementary literature	1. M. G. Calkin, Lagrangian and Hamiltonian mechanics, World Scientic, Singapore, 1996 2. C. Lanczos, The variational principles of mechanics, 4th ed., Dover, New York, 1986 4. D. ter Haar, Elements of Hamiltonian mechanics, 2nd ed., Pergamon, Oxford, 1971
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	1. Particle in a central field. 2. Lagrange equations of the first and second kinds. 3. Hamilton equations.	
Work placement	Not applicable	