GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Classical mechanics and optical geometry, PG_00030016		
Field of study	Mathematics		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2022/2023
Education level	second-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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	5.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Theoretical Physics and Quantum Information -> Faculty of Applied Physics and Mathematics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Ewa Erdmann	
	Teachers	dr inż. Ewa Erdmann	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	0.0	30.0	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

Teaching geometrical optics and classical mechanics.

Learning outcomes

Course outcome	Subject outcome	Method of verification
K7_U07	Knows how to apply methods of linear algebra.	[SU2] Assessment of ability to analyse information
K7_K03	Knows how to arrange a team work.	[SK1] Assessment of group work skills [SK3] Assessment of ability to organize work
K7_W07	Draws connetion with the other areas of science.	[SW1] Assessment of factual knowledge
K7_U12	Identifies mathematical structures of physical theories.	[SU2] Assessment of ability to analyse information
K7_W10	Knows basic numerical methods.	[SW1] Assessment of factual knowledge

Subject contents

1. Basic geometrical optics.

2. Classical mechanics.

Prerequisites and co-requisites

Completed all other subjects of the study.

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
exam	50.0%	50.0%
presentation	50.0%	50.0%

Recommended reading

Basic literature

1. Cz. Bobrowski, Fizyka
2. W. Rubinowicz, W. Królikowski, Mechanika teoretyczna

	Supplementary literature	• A. Wojtowicz, http://www.phys.uni.torun.pl/~andywojt • D. Halliday, R. Resnick, J. Walker, Podstawy fizyki • G. Białkowski, Mechanika klasyczna
	eResources addresses	Adresy na platformie eNauczanie: Mechanika klasyczna i optyka geometryczna - Moodle ID: 22907 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=22907
Example issues/ example questions/ tasks being completed	1. Derive the principle of conservation of energy of the point particle. Describe the conditions of its application. 2. Derive Lagrange's equations of the second kind from D'Alembert's principle.	
Work placement	Not applicable	