



Subject card

Subject name and code	Physics II, PG_00044797						
Field of study	Geodesy and Cartography						
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		
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		assessment		
Conducting unit	Department of Solid State Physics -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Anna Rybicka				
	Teachers		dr inż. Anna Rybicka				
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: FIZYKA II - GiK_21/22 - Moodle ID: 19227 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19227						
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		9.0		56.0	125
Subject objectives	Knowledge of geometrical and wave optics.						
	Knowledge of basic modern physics problem.						
	Ability to analyze physical phenomena and solving engineering problems.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_U02] can make basic geodetic drawings and read an architectural technical drawing		Students understand physical laws and solve problems on the basis of them.		[SU3] Assessment of ability to use knowledge gained from the subject		
	[K6_W01] has basic knowledge and understands the concepts of physics which allow to use optical and immersive instruments as well as positioning and satellite imaging		Students recognize basic physical phenomena; can formulate, explain and use fundamental laws of classical and modern physics.		[SW1] Assessment of factual knowledge		

Subject contents	Basic laws of geometric and wave optics.		
	Elements of special theory of relativity.		
	Black body radiation.		
	Quantum theory of light.		
	Models of an atom.		
	Schroedinger equation.		
	Elements of solid state physics.		
	Radioactivity.		
Prerequisites and co-requisites	Continuation of course of physics, given during the first semester.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Exercises - two practical tests	50.0%	50.0%
	Lecture - theory test	50.0%	50.0%
Recommended reading	Basic literature	Ohanian, Markert, Physics for Engineers and Scisntists, NY Norton, 2007 www.ftims.pg.edu.pl/Studenci/Materialy_dydaktyczne (University Physics)	
	Supplementary literature	Tipler, Llewellyn, Modern Physics, 6ed Freeman, 2012	
	eResources addresses	FIZYKA II - GiK_21/22 - Moodle ID: 19227 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=19227	
Example issues/ example questions/ tasks being completed	Fermat's principle.		
	Lorentz's transformations.		
	Photoelectric effect.		
	Bohr's postulates.		
	de Broglie's theory.		
Work placement	Not applicable		