



Subject card

Subject name and code	, PG_00058945						
Field of study	Nanotechnology						
Date of commencement of studies	October 2022	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	3	Language of instruction			Polish		
Semester of study	5	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Division of Electrochemistry and Surface Physical Chemistry -> Institute of Nanotechnology and Materials Engineering -> Faculty of Applied Physics and Mathematics						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Natalia Wójcik					
	Teachers	dr hab. inż. Natalia Wójcik					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	15.0	0.0	0.0	45
	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	45	5.0		25.0		75
Subject objectives	Ability to select the material for the implant for an individual patient.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_W07	Has basic knowledge of human anatomy and biomaterials.			[SW1] Assessment of factual knowledge		
	K6_K05	He can create a presentation to show the effects of his work.			[SK1] Assessment of group work skills [SK5] Assessment of ability to solve problems that arise in practice		
	K6_U02	Is able to design and synthesize biomaterial and characterize it.			[SU2] Assessment of ability to analyse information		
Subject contents	Basics of human anatomy. Soft and hard tissue. Materials used for implants and their requirements. Bioglasses, bioceramics, bone cements, nanocomposites - compositions, properties, production techniques, modifications, applications. Degradation of implants in vivo and in vitro.						
Prerequisites and co-requisites							
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	Lecture + laboratory	100.0%			100.0%		
Recommended reading	Basic literature	Articles and magazines concerning biomaterials					
	Supplementary literature	-					
	eResources addresses	Adresy na platformie eNauczanie: Biomateriały i nanobiomateriały z podstawami anatomii - Moodle ID: 41495 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=41495					

Example issues/ example questions/ tasks being completed	Soft and hard tissues. Degradation. Implant materials. Coatings
Work placement	Not applicable

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