



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	<p>Soft and hard tissues.</p> <p>Degradation.</p> <p>Implant materials.</p> <p>Coatings</p>
Work placement	Not applicable

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