



Subject card

Subject name and code	Biomaterials and nanobiomaterials, PG_00026519						
Field of study	Nanotechnology						
Date of commencement of studies	October 2021	Academic year of realisation of subject			2023/2024		
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			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Zakład Technologii Biomateriałów -> Institute of Manufacturing and Materials Technology -> Faculty of Mechanical Engineering and Ship Technology						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Beata Świczko-Żurek					
	Teachers	dr hab. inż. Beata Świczko-Żurek					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	15.0	0.0	0.0	30
	E-learning hours included: 0.0						
Additional information: Lectures, laboratories, PowerPoint presentations, consultations							
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	30	1.0	19.0	50		
Subject objectives	Ability to select the material for the implant for an individual patient and forming an antimicrobial coating containing nanoparticles.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K6_W07	Can obtain a nanostructure to create a new material or coating.			[SW3] Assessment of knowledge contained in written work and projects		
	K6_U02	He has knowledge, that he can use to solve the problem.			[SU1] Assessment of task fulfilment [SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
K6_K05	He can create a presentation to show the effects of his work.			[SK5] Assessment of ability to solve problems that arise in practice [SK1] Assessment of group work skills			
Subject contents	Soft and hard tissues. Materials used for implants. Coatings for implants. Degradation of implants in vivo and in vitro. Nanomaterials. Nanocoatings. Nanoparticles.						
Prerequisites and co-requisites							

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		Lecture + laboratory	80.0%
Recommended reading	Basic literature	Świczko-Żurek B.: Biomaterials Articles and magazines concerning biomaterials English-language articles	
	Supplementary literature	-	
	eResources addresses	Adresy na platformie eNauczenie: Biomateriały i nanobiomateriały - Moodle ID: 34079 https://enauczenie.pg.edu.pl/moodle/course/view.php?id=34079	
Example issues/ example questions/ tasks being completed	Soft and hard tissues. Degradation. Implant materials. Coatings Nanoparticles		
Work placement	Not applicable		