GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Biomaterials and nanobiomaterials, PG_00026519		
Field of study	Nanotechnology		
Date of commencement of studies	October 2020	Academic year of realisation of subject	2022/2023
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	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 Świeczko-Żurek	
	Teachers	dr hab. inż. Beata Świeczko-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

https://enauczanie.pg.edu.pl/moodle/course/edit.php?id=26729

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_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
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_W07	Can obtain a nanostructure to create a new material or coating.	[SW3] Assessment of knowledge contained in written work and projects

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

<table>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Lecture + laboratory</td><td>80.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Świeczko-Żurek B.: Biomaterials

Articles and magazines concerning biomaterialsEnglish-language articles</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">-</td></tr>
<tr><td>eResources addresses</td><td colspan="2">Adresy na platformie eNauczanie:
Biomateriały i nanobiomateriały - Moodle ID: 26729
https://enauczanie.pg.edu.pl/moodle/course/view.php?id=26729</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">Soft and hard tissues.

Degradation.

Implant materials.

Coatings

Nanoparticles</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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