GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Implants and Artifical Organs, PG_00047778		
Field of study	Biomedical Engineering		
Date of commencement of studies	October 2023	Academic year of realisation of subject	2025/2026
Education level	first-cycle studies	Subject group	Obligatory subject group in the field of study 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	1.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Biomedical Engineering -> Faculty of Electronics, Telecommunications and Informatics		
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Piotr Jasiński	
	Teachers	prof. dr hab. inż. Piotr Jasiński	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

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	15	2.0	8.0	25

Subject objectives

The aim of the course is to familiarize students with the construction and use of artificial organs and implants. In particular, the construction and functions of replacement systems will be discussed.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W51] Knows and understands, to an advanced extent, selected aspects of human anatomy and physiology, constituting general knowledge related to the field of study	Knowledge of human anatomy and physiology for the use of implants and artificial organs	[SW1] Assessment of factual knowledge
[K6_W53] Knows and understands, to an advanced extent, selected aspects of materials science and biomaterials constituting general knowledge related to the field of study	Knowledge about the properties of materials and implants	[SW1] Assessment of factual knowledge
[K6_W06] Knows and understands the basic processes occurring in the life cycle of devices, facilities and systems specific to a given field of study.	Knows the basic processes occurring in the life cycle of devices, objects and systems specific to a given field of study	[SW1] Assessment of factual knowledge
[K6_U52] can determine properties of materials and biomaterials used in biomedical engineering	Knows the properties of materials and biomaterials used in biomedical engineering	[SU3] Assessment of ability to use knowledge gained from the subject

Subject contents

Introduction. Pacemakers. Fake heart. Artificial kidney. Artificial Pancreas. Blood oxygenerators. Imitation leather. Electronic Hearing Fake eye Implant supply. Summary of classes. Examination.

Prerequisites and co-requisites

There are no entry requirements

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
Test	50.0%	100.0%

Recommended reading	Basic literature	Biocybernetyka i inżynieria biomedyczna 2000. Tom 3. Sztuczne narządy, pod red. M. Nałęcza. Akademicka Oficyna Wydawnicza EXIT, Warszawa 2001 L. Hench, J.R. Jones. Biomaterials, artificial organs and tissue engineering, CRC, Cambridge 2005
	Supplementary literature	Publications from the Journal of Artificial Organs. Publications from the Artificial Organs
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	