



Subject card

Subject name and code	Engineering Problems in Cardiology, PG_00064127						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2024		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	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		1.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. lek. Janusz Siebert				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	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		1.0		9.0	25
Subject objectives	Diagnostic tools in cardiology						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K02] is aware of importance of professional dealing and to fulfill ethics obligations, he/she understands other (nontechnical) abilities of mechanical engineering professional, their influence on the society and security of environment, he/she is aware of importance of social cooperation		1. complies with the medical secrecy obligation and honours all patient's rights 2.abides by the model codes of ethics in professional activity		[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_W01] has knowledge in the field of natural sciences, including mathematics, contemporary physics, chemistry, and human anatomy with physiology		1. knows morfology and human physiology 2. possesses the skill of acting in conditions of uncertainty or stress		[SW2] Assessment of knowledge contained in presentation		
	[K6_U08] is able to assess the human body physic and functioning of the body organs and is able to use medical knowledge to solve mechanical-medical problems in the scope of the study		performs complete and targeted physical examination of adult patients		[SU4] Assessment of ability to use methods and tools		

Subject contents	Course content – laboratory <i>Diagnostic tools in cardiology</i> <i>1. Basic concepts of electrocardiography /ECG/</i> <i>2. Basic concepts of impedance cardiography /ICG/.</i> 3. Basic concepts of echocardiography. 4. Basic concepts of ultrasonography 5. Basic concepts of electrotherapy /pacemaker therapy (AAI, VVI, DDD)/ <i>6. Invasive procedures in cardiology / PTCA/</i> <i>7. Principles of cardiosurgery</i>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Essej	60.0%	100.0%
Recommended reading	Basic literature	<i>Seminar multimedia presentations updated yearly</i> <i>1. "ECGs by Example" Dean Jenkins, Stephen Gerred, Elsevier, 3rd edition, 2011,</i>	
	Supplementary literature	B. Supplementary literature <i>Guidelines of the European Society of Cardiology (ESC) -</i> www.escardio.org	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Phsical principles of ECG Physical principles of USG Pacemarcer therapy		
Practical activites within the subject	Not applicable		

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