



Subject card

Subject name and code	Chemistry and Biochemistry, PG_00064117						
Field of study	Mechanical and Medical Engineering						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	first-cycle studies		Subject group		Obligatory subject group in the field of study		
Mode of study	Full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Institute Of Mechanics And Machine Design -> Faculty Of Mechanical Engineering And Ship Technology -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		Ewa Stelmańska				
	Teachers						
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		50.0	100
Subject objectives	Obtaining basic information on chemistry and biochemistry necessary for a medical engineer.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W01] has knowledge in the field of natural sciences, including mathematics, contemporary physics, chemistry, and human anatomy with physiology		The student recognizes basic chemical compounds building the human body. He has a basic knowledge about metabolic processes undergoing in human body and understand the effect of external environment on these processes.		[SW1] Assessment of factual knowledge		
	[K6_U01] is able to acquire knowledge and self-studying, he/she is able to find needed information in specialist books, databases and other sources, he/she is able to integrate information and draw conclusions, he/she is able to communicate by using different technics in work and outside		The student is able to find new biochemical information, make correct interpretation and express correct conclusion.		[SU4] Assessment of ability to use methods and tools		
Subject contents	Chemical composition of human body. Structure and function of enzymes. Structure and metabolism of carbohydrates, lipids, proteins and nucleic acids. Structure and function of some hormones and vitamins. Iron metabolism and hemoglobin structure and function. Metabolic specificities and integration of metabolism. Effect of external environment on human metabolism. Aparatus and methods used in biochemical studies.						
Prerequisites and co-requisites	Basic chemistry and biology. Knowledge of basic structure of the human body. Knowledge of basic principles of laboratory work. A coat is required for lab classes.						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	Final written test		60.0%		100.0%		
Recommended reading	Basic literature		Biochemia, seria "Lippincott's Illustrated Reviews", Denise R. Ferrier, Urban & Partner - Wrocław 2018.				

	Supplementary literature	Biochemia Harpera (ilustrowana), wydanie VII uaktualnione, PZWL Warszawa 2018 Postępy Biochemii (czasopismo Polskiego Towarzystwa Biochemicznego)
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<p>Sample questions:</p> <p>1. which compound is classified as a steroid? (Select one best answer)</p> <p>a. collagen</p> <p>b. citrate</p> <p>c. cholesterol</p> <p>d. glycogen</p> <p>e.ATP</p> <p>Example topics:</p> <p>1.Effects of respiratory chain inhibitors on NAD- and FAD-dependent substrate oxidations.</p> <p>2. Role of vitamins in regulation of human metabolism.</p>	
Work placement	Not applicable	

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