



## Subject card

Subject name and code	General Mikrobiology, PG_00054680						
Field of study	Biotechnology						
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 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	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		4.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Faculty Of Chemistry -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Anna Brillowska-Dąbrowska				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	30.0	0.0	0.0	60
	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	60		8.0		32.0	100
Subject objectives	Obtaining knowledge on the basic problems of microbiology, mainly in the field of microbiology used in biotechnology. Mastering the practical skills of performing selected microbiological techniques, especially those used in biotechnology.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	K6_U04		The student acquires the ability to use basic microbiological techniques.		[SU4] Assessment of ability to use methods and tools		
	K6_W04		The student learns about the biology, physiology and functions of microorganisms.		[SW1] Assessment of factual knowledge		

Subject contents	<p>Lectures:</p> <p>Microorganisms and Microbiology. Microorganisms as cells. Microorganisms and their natural environments. The impact of microorganisms on humans. The history of discoveries in microbiology. Overview of microbial life forms (cell structure and evolution of life, the three domains of life, physiological diversity of microorganisms, biodiversity of prokaryotic organisms and eukaryotic microorganisms). Cell structure and function. Nutrition, laboratory cultivation, and metabolism of microorganisms. Microbial growth. Microbiological taxonomy. Microbial ecology. Microorganisms useful for industry and scientific research. The human microbiome.</p> <p>Laboratories:</p> <ul style="list-style-type: none"><li>• Introduction to working in a microbiological laboratory</li><li>• Microbiological work technique sterilization methods</li><li>• In vitro cultivation of microorganisms microbiological media, types of growth</li><li>• In vitro cultivation of microorganisms inoculation techniques, isolation of pure cultures</li><li>• In vitro cultivation of microorganisms bacterial metabolism</li><li>• Disinfection part 1</li><li>• Disinfection part 2</li><li>• Cultivation and quantification of microorganisms</li><li>• Human microbiome</li><li>• Selected microscopy techniques methods of observing microorganisms. Viewing prepared slides</li><li>• Selected microscopy techniques Gram staining method</li><li>• Selected microscopy techniques</li><li>• Selected microscopy techniques skills test</li><li>• Investigation of the antibacterial activity of selected substances</li><li>• Additional classes</li></ul>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Quizes during classes 2-14	60.0%	40.0%
	Two lecture's tests	60.0%	60.0%
Recommended reading	Basic literature	Jaime S. Colome, A. M Kubinski, Raul Cano, D. V. Grady Laboratory Exercises in Microbiology	
	Supplementary literature	Michael Madigan "Biology of microorganisms" - Pearson; 16th edition (1 July 2021)	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1.The generation time is: the time required for cell division the time required to break down genetic material time of logarithmic growth of bacteria in stationary culture the time required for bacteria to adapt to the new environment 2.Anaerobes: they grow in microaerophilic conditions they grow in the presence of 21% oxygen in the atmosphere they grow in anaerobic conditions they do not grow in anaerobic conditions		
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.