

Subject card

Subject name and code	, PG_00154423						
Field of study	Biology						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	undergraduate 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		3.0		
Learning profile	academic		Assessment form				
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Magdalena Plotka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	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	30		4.0		41.0	75
Subject objectives	Understanding the relationship between structure and function in relation to microorganisms, the relationship between basic metabolic processes, the mechanisms regulating bacterial metabolism, the factors determining the virulence of bacteria and viruses, and methods of preventing and combating infections.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOLL3_W01] The graduate identify the constituent elements and explain the differences in the structure and function of prokaryotic and eukaryotic cells		Components and explains the differences in the structure and functioning of prokaryotic and eukaryotic cells		[SW4] test/exam - oral or written		
	[BIOLL3_W06] The graduate will know the characteristics, systematics and understand the evolution of selected groups of organisms including molecular basis and basic concepts and mechanisms of evolution		Characterization, systematics, and evolution of selected groups of microorganisms, considering the molecular foundations and fundamental concepts and mechanisms of evolution.		[SW4] test/exam - oral or written		
	[BIOLL3_W10] The graduate is familiar with the development and current state of knowledge and the latest trends in biology, as well as their relationship with other natural disciplines		Current state of knowledge in microbiology relating to the structure and function of microorganisms.		[SW4] test/exam - oral or written		
	[BIOLL3_W04] The graduate is conversant with the course of physiological processes and their relationship to the adaptation of the organism to changing environmental conditions		The course of physiological processes in microorganisms and their relationship with the organism's adaptation to changing environmental conditions.		[SW4] test/exam - oral or written		

Subject contents	Functional anatomy of bacteria, basic metabolic processes of bacteria, conditions of bacterial growth, regulation of bacterial metabolism, control of bacterial growth, genetics of bacteria and viruses, mutagenesis and mutational variability of bacteria, fundamentals of virology, microbiological mechanisms of pathogenesis, pathogenic microorganisms, and use of microorganisms in biotechnology.		
Prerequisites and co-requisites	Completed organic chemistry course		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Test exam	51.0%	100.0%
Recommended reading	Basic literature	Madigan, M.T., Martinko, J.M., Dunlap, P.V. and Clark,D.P.: Brock Biology of Microorganisms, Pearson	
	Supplementary literature	Murphy, K.: Janeway's Immunobiology, Garland Science	
	eResources addresses	Adresy na platformie eNauczenie:	
Example issues/ example questions/ tasks being completed	1. Lipid A is a component of:		
	a) lipopolysaccharide of enterobacteria b) Brown's lipoprotein of <i>Escherichia coli</i> c) cytoplasmic membrane phospholipids of Gram-negative bacteria d) lipids associated with murein of Gram-positive bacteria		
	2. This bacterium produces a strong neurotoxin that affects peripheral nerves. This refers to:		
	a) <i>Staphylococcus aureus</i> b) <i>Bacillus anthracis</i> c) <i>Bordetella pertussis</i> d) <i>Clostridium botulinum</i>		
Work placement	Not applicable		

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