

Subject card

Subject name and code	Microbiology, PG_00207419						
Field of study	Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's 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		exam		
Conducting unit	Department of Microbiology -> Faculty of Biology -> Rector						
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		2.0		43.0	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_W07] knows the development of biology as a science, its connections with other disciplines and the principles of using biological knowledge in the economy and social life, including ways that are entrepreneurial						
	[BIOLL3_W03] knows and understands at an advanced level the principles of life functioning at the level of populations, biocenoses and ecosystems, the determinants of biological diversity as well as the mechanisms and molecular basis of the evolution of organisms						
	[BIOLL3_W01] knows and understands at an advanced level the structure and functioning of organisms at all levels of the organization of life - from the cell (prokaryotic and eukaryotic), through tissues, organs, to the organism - as well as the relationships between them and their adaptations to the environment						

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		
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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