

Subject card

Subject name and code	Microbiology, PG_00207418						
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			credit	
Conducting unit	Collection of Plasmids and Microorganisms -> 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	0.0	0.0	30.0	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		3.0		42.0	75
Subject objectives	Understanding the relationship between the structure and function of bacteria. Understanding the relationships between basic metabolic processes. Understanding the mechanisms regulating bacterial metabolism. Learning about the factors determining the virulence of bacteria and viruses. Learning about 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		
	[BIOLL3_U03] is able to search for, select and critically analyze information from various sources, including scientific literature and electronic databases, as well as read and understand scientific texts in Polish and English		
	[BIOLL3_U01] is able to use basic research techniques and tools appropriate for the biological sciences and perform physical, chemical and biological observations and measurements in the laboratory and in the field, individually and in a team, while organizing her/his work appropriately and in a maintained way		
	[BIOLL3_K05] is ready to perform professional roles responsibly, both individually and in teams, including organizing the work of small teams and taking joint responsibility for the implementation of assigned tasks and the results achieved.		
	[BIOLL3_K02] is ready to take care for her/his own safety and that of others, identifying threats and taking appropriate action, as well as use verified equipment and materials responsibly, ensuring their proper use		
Subject contents	Problems of laboratory workLearning about research techniques and methods used in microbiology. Learning about the principles of safe work in a microbiology laboratory. Review of selected groups of bacteria.		
Prerequisites and co-requisites	Completed organic chemistry course		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	written test	51.0%	100.0%
Recommended reading	Basic literature	A. Literature required for final crediting of classes:A.1. used during classesKunicki-Goldfinger W. J. H. 1998. Life of bacteria. PWN, Warsaw.Markiewicz Z. 1993. Structure and functions of bacterial envelopes. PWN, Warsaw.Eligia M. Szewczyk: Bacteriological diagnostics PWN 2006A.2. studied independently by the studentBaj, J. Markiewicz, Z.: Molecular biology of bacteria, Warsaw, 2006Streya, L.: Biochemistry, PWN 1997	

	Supplementary literature	Jawetz E., Melnick J., Adelberg E. 1991. Medical microbiology review. PZWL, Warsaw. Piekarowicz: Basics of molecular virology, PWN 2004 Wons E, Mruk I, Kaczorowski T. Relaxed specificity of prokaryotic DNAmethyltransferases results in DNA site-specific modification of RNA/DNA heteroduplexes. J Appl Genet. 2015 Nov;56(4):539-546
	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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