University of Gdańsk

Subject card

Subject name and code	Microbiology, PG_00196838						
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 Płotka				
	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		6.0		39.0	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_U07] The graduate is able to independently search for and use available sources of biological information, including electronic sources	independently searches for and uses available sources of biological information, including electronic sources	[SU4] test/exam - oral or written
[BIOLL3_U01] The graduate is able to use basic apparatus and research tools and follow the correct sequence of operations in laboratory and field work	uses basic equipment and research tools and maintains the correct sequence of activities in the microbiology laboratory	[SU8] observation of student's independent or team work
[BIOLL3_K03] The graduate is able to organise the work of a small team and work effectively as part of a team	ability to work in a team, effectively divide tasks in a small research group	[SK8] observation of student's independent or team work
[BIOLL3_W06] The graduate will know at an advanced level the characteristics, systematics and understand the evolution of selected groups of organisms including molecular basis and basic concepts and mechanisms of evolution	is familiar with the current state of knowledge and the latest trends in microbiology, indicates their relationship with other disciplines of natural or medical sciences	[SW4] test/exam - oral or written
[BIOLL3_W01] The graduate knows and uderstands at an advanced level the constituent elements, the differences in the structure and function of prokaryotic and eukaryotic cells	describes the basic components and explains the differences in the structure and functioning of prokaryotic and eukaryotic cells.	[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	knows the current state of knowledge and the latest trends in biology, as well as their relationship with other natural sciences	[SW4] test/exam - oral or written
[BIOLL3_W04] The graduate knows and understands at an advanced level the course of physiological processes and their relationship to the adaptation of the organism to changing environmental conditions	presents the characteristics and taxonomy of selected microorganisms, taking into account their molecular bases.	[SW4] test/exam - oral or written
[BIOLL3_K05] The graduate is prepared to take responsibility for the safety of his/her and that of others, as well as to recognize hazardous situations and take appropriate action	is responsible for the safety of his/her own work and the work of others and is able to recognize dangerous situations and take appropriate action	[SK8] observation of student's independent or team work

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, 2006Streyer, L.: Biochemistry, PWN 1997
Supplementary literature	Jawetz E., Melnick J., Adelberg E. 1991. Medical microbiology review. PZWL, Warsaw.Piekarowicz: Basics of molecular virology, PWN 2004Wons E, Mruk I, Kaczorowski T. Relaxed specificity of prokaryotic DNAmethyltransferases results in DNA site-specific modification of RNA/DNAheteroduplexes. 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 enterobacteriab) Brown's lipoprotein of *Escherichia coli* c) cytoplasmic membrane phospholipids of Gram-negative bacteriad) lipids associated with murein of Gram-positive bacteria2. This bacterium produces a strong neurotoxin that affects peripheral nerves. This refers to:a) *Staphylococcus aureus*b) *Bacillus anthracis*c) *Bordetella pertussis*d) *Clostridium botulinum*

Work placement

Not applicable

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