University of Gdańsk

Subject card

Subject name and code	General microbiology, PG_00146887		
Field of study	Genetics and Experimental Biology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	undergraduate studies	Subject group	Obligatory subject group 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	2	ECTS credits	3.0
Learning profile	academic	Assessment form	
Conducting unit			
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	8.0	37.0	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. Understanding 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
[GBEL3_W01] Understanding the structure and properties of basic types of biological macromolecules, molecular mechanisms of metabolic pathways and genetic information flow, as well as sources of genetic variability in organisms and mechanisms of evolution; explaining the rules of inheritance, elucidating differences in the structure and functioning of prokaryotic and eukaryotic cells, and understanding the structure and functional relationships at the cellular and tissue levels.	characterizes the basic components and explains the differences in the functioning of prokaryotic and eukaryotic cells	[SW4] test/exam - oral or written
[GBEL3_W03] The molecular mechanisms of genetic information transmission and gene expression, as well as the molecular and genetic basis of human physiology and diseases, including infectious diseases.	understands the basic physiological processes in bacteria and their relationship to causing infectious diseases in humans and animals	[SW4] test/exam - oral or written
[GBEL3_W06] the development and current state of knowledge, as well as the latest trends in molecular genetics and related fields; indicating their relationship with other disciplines in the natural or medical sciences and the possibilities of their practical application.	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
[GBEL3_K05] Responsibility for the safety of one's own work and others.	uses basic equipment and research tools when performing activities in a microbiology laboratory and maintains his/her own and others' safety	[SK8] observation of student's independent or team work
[GBEL3_U07] Work in a team and organize work while adhering to occupational health and safety principles and ergonomics.	is able to work in a team to analyze biological problems related to the topics of the classes	[SU8] observation of student's independent or team work
[GBEL3_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze their results, and draw conclusions.	is able to carry out simple experiments in the field of microbiology, interpret the obtained results and draw conclusions	[SU6] demonstration of practical skills [SU8] observation of student's independent or team work

Subject contents

Issues of laboratory work. Learning 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. Review of medical microbiology. PZWL, Warsaw.Piekarowicz : Fundamentals 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	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	1.The Enterobacteriaceae family includes:a) *Vibrio, Bacillus, Clostridium*b) *Citrobacter, Klebsiella, Escherichia*c) *Neisseria, Vibrio, Staphylococcus*d) *Aeromonas, Candida, Serratia* 2. What diseases do the following bacteria cause: *Mycobacterium tuberculosis Vibrio cholerae*	
Work placement	Not applicable	

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