University of Gdańsk

Subject card

Subject name and code	Microbiology, PG_00196839		
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 Płotka	
	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_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	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_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	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	Current state of knowledge in microbiology relating to the structure and function of microorganisms.	[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	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

<table>
<tr><td>Subject contents</td><td colspan="3">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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">Completed organic chemistry course</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="3"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Test exam</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">Madigan, M.T., Martinko, J.M., Dunlap, P.V. and Clark,D.P.: Brock Biology of Microorganisms, Pearson</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Murphy, K.: Janeway's Immunobiology, Garland Science</td></tr>
<tr><td>eResources addresses</td><td colspan="2"></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3">1. Lipid A is a component of:

a) lipopolysaccharide of enterobacteria

b) Brown's lipoprotein of Escherichia coli

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) Staphylococcus aureus

b) Bacillus anthracis

c) Bordetella pertussis

d) Clostridium botulinum</td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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