University of Gdańsk

Subject card

Subject name and code	Microbiology, PG_00203424						
Field of study	Medical Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
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		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
	[BIOLMEDL3_W10] has an advanced understanding of the principles of assessing processes and phenomena occurring within the body, using physical or chemical measurements, and possesses advanced knowledge of experimental methods and the key techniques of the biological sciences that may be applied in medical biology and diagnostics	explains the theoretical basis of experimental methods and lists the most important techniques of biological sciences that can be used in medical biology, microbiology and molecular diagnostics	[SW4] test/exam - oral or written
	[BIOLMEDL3_K04] jest odpowiedzialny za bezpieczeństwo pracy własnej i innych oraz potrafi rozpoznać sytuacje zagrożenia i podjąć odpowiednie działania	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
	[BIOLMEDL3_W03] has an advanced knowledge and understanding of the characteristics, systematics and evolution of selected groups of organisms, taking into account their molecular basis, and describes the fundamental concepts and mechanisms of evolution; furthermore, the student describes, explains and compares, at an advanced level, the systemic regulatory mechanisms in animal and human organisms (including from an ontogenetic and phylogenetic perspective) and understands the neurobiological and genetic basis of disorders	Presents the characteristics and taxonomy of selected microorganisms, taking into account their molecular bases.	[SW4] test/exam - oral or written
	[BIOLMEDL3_U10] learns independently and in a focused manner, and is able to set priorities and organise the work of a small team, as well as work effectively within a team	Is able to set priorities and organize the work of a small team in a microbiology laboratory.	[SU8] observation of student's independent or team work
	[BIOLMEDL3_U03] applies basic statistical methods and computer algorithms and techniques to describe phenomena and data analysis	The student organizes data from microbiological experiments, applies basic statistical methods, and uses spreadsheet formulas to analyze the results. They present the findings in tables and charts, and interpret the observed relationships.	[SU2] presentation/project/paper/report
	[BIOLMEDL3_W01] has an advanced knowledge and understanding of the differences in the structure and function of prokaryotic and eukaryotic cells, the structure and properties of the various types of biological macromolecules, the molecular mechanisms of basic metabolic pathways and the flow of genetic information, and the sources of variation in organisms; explains the laws of inheritance	Characterizes the basic components and explains the differences in the structure and functioning of prokaryotic and eukaryotic cells.	[SW4] test/exam - oral or written
	[BIOLMEDL3_U01] is able to use and operate basic research equipment and tools employed in molecular-biochemical analysis or neurobiology and, following the correct sequence of steps, carries out simple physical, biological or chemical observations and measurements in laboratory work in the field of biological or medical sciences	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
Subject contents	topics of practical course: 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		

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>written test</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>A. Literature required for final crediting of classes (passing the exam):A. 1. used during classes:1. Markiewicz, Z.: Structure and functions of bacterial envelopes. Warsaw 1993, PWN2. Kunicki-Goldfinger, W.J.H.: Life of bacteria. Warsaw 2005, PWN3. Eligia M. Szewczyk: Bacteriological diagnostics, PWN 2006A.2. studied independently by the student:4. Baj, J. and Markiewicz, Z.: Molecular biology of bacteria. Warsaw 2006, PWN5. Streyer, L.: Biochemistry, PWN 1997</td></tr>
<tr><td>Supplementary literature</td><td>B. Additional literature:1. Piekarowicz: Fundamentals of molecular virology, PWN 20042. Jawetz, E., Melnick, J., Adelberg, E.: Review of medical microbiology. Warsaw 1991</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Sabouraud agar is used fora) Isolation of Staphylococcusb) Identification of Salmonella and Shigellac) Cultivation of fungid) None of the answers are correct

Select the subitem that lists only G(+) bacteria:

a) Escherichia, Klebsiella, Vibrio, Bacillusb) Salmonella, Neisseria, Bacillus, Sarcinac) Gaffkya, Vibrio, Escherichia, Citrobacterd) Bacillus, Clostridium, Gaffkya, Micrococcus</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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