University of Gdańsk

Subject card

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| 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<br>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 | | 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**

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| 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 |

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|---|---|---|
| | 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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