University of Gdańsk

Subject card

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| Subject name and code | Bacteriological diagnosis, PG_00147025 | | |
| Field of study | Genetics and Experimental Biology | | |
| Date of commencement of studies | October 2024 | Academic year of realisation of subject | 2025/2026 |
| Education level | undergraduate studies | Subject group | Obligatory subject group in the field of study<br>Optional subject group |
| Mode of study | full-time studies | Mode of delivery | at the university |
| Year of study | 2 | Language of instruction | Polish<br>Polish |
| Semester of study | 3 | ECTS credits | 1.0 |
| Learning profile | academic | Assessment form | |
| Conducting unit | Pracownia Ewolucji Molekularnej i Bioinformatyki -> Katedra Genetyki Ewolucyjnej i Biosystematyki -> Faculty of Biology | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr Agata Jurczak-Kurek | |
| | Teachers | | |

| Lesson types | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 15 |
| | 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 | 15 | 2.0 | 8.0 | 25 |

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| Subject objectives | To learn about the risks associated with new faces of pathogenic bacteria and the challenges facing microbiology today, the importance of physiological microbiota in maintaining homeostasis in the human body, the issues related to the epidemiology of infectious diseases, the methods of isolation of bacteria from biological material and methods of their identification, used in the diagnostic laboratory, the selected groups of microorganisms pathogenic for humans, their virulence factors and mechanisms of pathogenesis and about etiological factors causing selected systemic infections. |

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
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| [GBEL3_W05] the principles of research planning based on achievements in biological sciences and related fields, the potential application of their results in practice, the principles of operation of equipment and apparatus used in molecular genetics research, and the principle of interpreting biological phenomena and processes based on empirical data in research and practical activities, with consideration for sustainable use of biological diversity. | The student knows the principles of planning research based on the achievements of biological sciences in the field of bacteriological diagnostics and the possibility of using their results in practice, the principles of operation of equipment and apparatus used in bacteriological diagnostic research, and the principle of interpreting biological phenomena and processes based on empirical data in research work and practical activities. | [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. | The student is familiar with the latest trends in bacteriological diagnostics, knows a variety of methods for the isolation and identification of pathogenic bacteria and human physiological microbiota; knows specialized vocabulary (including Latin names of bacteria). | [SW4] test/exam - oral or written<br>[SW1] oral statement/ conversation/discussion |
| [GBEL3_K07] Lifelong learning and updating knowledge in the field of molecular genetics and other disciplines. | The student understands the need for lifelong learning and updating knowledge and terminology in bacteriological diagnostics and related fields. | [SK1] oral statement/conversation/ discussion<br>[SK4] test/exam - oral or written |
| [GBEL3_U09] Plan and pursue one's education autonomously and in a focused manner. | Student is able to plan his/her education and learn in an independent and focused manner. | [SU1] oral statement/conversation/ discussion<br>[SU4] test/exam - oral or written |

## Subject contents

Microbiology in the past and today, problems and challenges facing microbiology today. Selected issues in the epidemiology of infectious diseases. Physiological microbiota and its importance for the human body. Virulence factors of bacteria and their role in the mechanisms of pathogenesis. Review of selected groups of bacteria causing infectious diseases that are currently a significant medical problem. Methods of isolation and identification of bacterial etiological agent. Principles of collection of material for bacteriological studies and its storage and transport to the laboratory. Issues in the diagnosis of selected systemic infections. Selected issues related to nosocomial infections. Antibiotics and chemotherapeutics - mechanisms of their action and bacterial resistance.

## Prerequisites and co-requisites

- the student must have completed a course in basic microbiology,

- the student, after completing the compulsory subjects in the first year of study, has the knowledge and skills that qualify him/her to participate and pass the course

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
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| written test exam | 51.0% | 100.0% |

## Recommended reading

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| Basic literature | 1. Szweczyk E.M. Diagnostyka bakteriologiczna. Wyd. Naukowe PWN, Warszawa 2020<br>2. Irving W., Boswell T., Ala'Aldeen D. Mikrobiologia medyczna. Wyd. Naukowe PWN, Warszawa 2012 |
| Supplementary literature | 1. Salyer A.A., Whitt D.D. Mikrobiologia. Wyd. Naukowe PWN, Warszawa 2005<br>2. Tille P.M. Bailey & Scott's diagnostic microbiology. Fourteenth edition. Elsevier 2017 |
| eResources addresses | Adresy na platformie eNauczanie: |

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| Example issues/ example questions/ tasks being completed | 1. The human physiological microbiota<br>2. Virulence factors of bacteria<br>3. Phenotypic and molecular methods of identifying bacteria pathogenic to humans |
| Work placement | Not applicable |

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