University of Gdańsk

Subject card

Subject name and code	Introduction to phytopathology, PG_00197699		
Field of study	Biotechnology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group 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	3	Language of instruction	Polish
Semester of study	6	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Intercollegiate Faculty of Biotechnology UG-MUG -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr n. med. Dorota Pomorska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	16.0	0.0	0.0	0.0	0.0	16

E-learning hours included: 0.0

Additional information:

- Critical incident (case) analysis
- Group work
- Multimedia-based lecture
- Problem solving
- Problem-focused lecture
- Seminar lecture
- Oxford Style Debate
- Student focus lecture

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	16	5.0	29.0	50

Subject objectives

The aim of the course is to familiarize students with the basic knowledge in the field of phytopathology. During the course, students will become familiar with the history of research on plant diseases and the latest scientific achievements, and will learn the characteristic terminology and processes related to the mechanism of plant infection. They will become familiar with the biological features of selected plant pathogens, their importance and methods of identification of plant disease.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOTECHL3_W03] The graduate knows and understands selected issues of organism-environment interdependence	The student knows and understands the basic issues related to plant diseases and their pathogens in the context of organism-environment interactions.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[BIOTECHL3_W07] The graduate knows and understands basic techniques and research tools used in biotechnology.	The student knows and understands the basic techniques and tools used in phytopathological research and plant biotechnology.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW5] implementation of a problem task
[BIOTECHL3_K03] The graduate is willing to understand risks and dilemmas, including ethical dilemmas related to conducting scientific research and introducing advanced technologies using the achievements of biotechnology; understand and appreciate the importance of intellectual property; behave ethically.	The student is aware of the ethical and social challenges associated with conducting research on plant diseases and the biotechnological use of plant pathogens. They understand the risks arising from the uncontrolled implementation of new technologies, understand and appreciate the importance of intellectual property protection, and act in accordance with the principles of research ethics.	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written [SK5] implementation of a problem task [SK8] observation of student's independent or team work
[BIOTECHL3_K05] The graduate is willing to understand the need to inform the society about the achievements of biotechnology important for the improvement of health and quality of life.	The student understands the importance of disseminating knowledge in the field of plant pathology and biotechnology in the context of its impact on public health, quality of life, food safety, and environmental protection. They understand the role of scientists in reliably informing the public about scientific achievements in these areas.	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written [SK5] implementation of a problem task

Subject contents

- introduction to the concept of plant cultivation and diseases, including basic therms used in the field of studies of plant diseases
- history (Polish and foreign phytopathologists, key discoveries and observations in phytopathology) and future of phytopathology (latest discoveries, research methods and concepts)
- biology of plant pathogens, including bacterial, fungal, viral pathogens, phytoplasmas, plant pathogenic nematodes and parasitic plants (development cycle, host range, transmission vectors, examples of diseases)
- methods for detection and identification of plant pathogens (Koch's postulates in relation to plant pathogens, disease symptoms caused by selected plant pathogens, methods based on nucleic acids, antibodies, detection of plant pathogens in the XXI century)
- plant pathogen control methods (chemical, physical methods)
- biological protection of plants
- plant pathogens as useful molecular tools (*Agrobacterium tumefaciens*), research models of plant-pathogen interactions, source of useful biological compounds, food source

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test	51.0%	80.0%
Problem-based task, activity	0.0%	20.0%

Recommended reading

Basic literature	A.1. Analysed during classes L. Garbowski - "Outline of phytopathology" S. Kryczyński - "Basics of phytopathology" A.2. studied independently by the student P. Sobiczewski, M. Schollenberger "Bacterial diseases of horticultural plants"
Supplementary literature	H. S. Chaube, R. Singh Introductory plant pathology
eResources addresses	

Example issues/ example questions/ tasks being completed	
Work placement	Not applicable

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