University of Gdańsk

Subject card

Subject name and code	MSc thesis laboratory, PG_00197327						
Field of study	Biotechnology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2027/2028		
Education level	Master'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	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		19.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Intercollegiate Faculty of Biotechnology UG-MUG -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Andrea Lipińska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	400.0	0.0	0.0	400
	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	400		10.0		65.0	475
Subject objectives	The student knows and uses basic principles of safety and hygiene of work in a research laboratory, and is able to solve problems arising in laboratory work and to deal with emergency situations. Within the framework of the course, the student extends his/her laboratory work skills, independently plans and carries out experiments, only consulting their results with the supervisor. The student practices the ability to independently document conducted experiments and their results, and learns to independently operate the research equipment used.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOTECHMU2_W06] The graduate has in-depth knowledge and understands the risks associated with conducting laboratory works, including those resulting from working with infectious material, GMOs and GMMs.	The student recognizes biological hazards associated with laboratory work, including those resulting from contact with infectious materials, GMOs, and GMMs. Adheres to procedures for handling biological and genetically modified materials, in accordance with applicable legal regulations and bioethical guidelines.	[SW3] text preparation/written work
	[BIOTECHMU2_U06] The graduate is able to prepare, in a targeted manner in Polish and / or English, a written study, a scientific publication in the field of biotechnology using scientific language, including specialist terminology and conceptual apparatus.	In collaboration with the supervisor, the student prepares a master's thesis as a written scientific study of the experimental results obtained during the laboratory, in Polish and/or English, maintaining the structure typical of theses and using appropriate scientific language and specialized terminology appropriate to biotechnology and medical sciences.	[SU3] text preparation/written work
	[BIOTECHMU2_U04] The graduate possesses the ability to proficiently use scientific information, including English, regarding biotechnology; critically analyses and selects information; uses electronic sources; has the ability to use appropriate databases.	In preparation for laboratory work and writing a thesis, students search for and select scientific literature in the field of biotechnology, using databases and other electronic sources, including English-language scientific publications. They critically analyze scientific content, assessing the credibility of sources, research methodology, and the substantive value of publications.	[SU3] text preparation/written work
	[BIOTECHMU2_U01] The graduate possesses the skills necessary to design and conduct laboratory research, critically assessing risks, method limitations, and ethical implications of undertaken activities.	The student designs and conducts experimental research in biotechnology/medical sciences, selecting appropriate methods, tools, and research materials while maintaining biological safety and occupational health principles. Critically assesses the limitations and risks of the methods used, including potential biological, chemical, and environmental hazards.	[SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[BIOTECHMU2_U02] The graduate is able to collect and interpret empirical data; use statistical methods and IT tools in data analysis; formulate conclusions based on empirical data.	While performing experiments in the field of biotechnology/medical sciences, the student collects and interprets empirical data; in analyzing them for the purpose of writing a thesis, he/she uses appropriately selected statistical methods and informatics tools; formulates conclusions based on empirical data.	[SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work
	[BIOTECHMU2_U08] The graduate is able to learn independently, effectively plan and organize work independently or as part of a team.	During the master's degree lab, students independently plan and organize laboratory research, setting goals, scheduling, and prioritizing tasks. They effectively manage time and resources both individually and as part of a research team. They collaborate within a group, dividing tasks, coordinating team activities, and communicating results in a clear and scientifically accurate manner.	[SU8] observation of student's independent or team work
Subject contents	Depending on the research topic of the thesis supervisor, the content of the course may include: analysis of protein structure and function using advanced spectroscopic, biophysical and biochemical techniques; deepening knowledge of the biochemistry and biotechnology of plant lipids; application of molecular biology methods in the construction of new-generation antiviral vaccines; analysis of the structure and function of viral proteins; analysis of the molecular mechanism of aggressive cancer cell behaviour and the search for markers for the diagnosis and therapy of these diseases.		
Prerequisites and co-requisites			

<table>
<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>Master's project (evaluation form)</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">Scientific publications (in Polish and in English) related to the topic of the master's project, including scientific publications of the supervisor of the project of the master's project.</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">None</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"></td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
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