

Subject card

Subject name and code	Introduction to the methodology of experimental research, PG_00207320						
Field of study	Genetics and Experimental 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		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
Name and surname of lecturer (lecturers)	Subject supervisor		dr Monika Maciąg-Dorszyńska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	10.0	0.0	0.0	0.0	0.0	10
	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	10		2.0		13.0	25
Subject objectives	Familiarizing students with the issues of proper planning and execution of experiments, as well as control of the experimental setup.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[GBEL3_W05] A graduate has an advanced knowledge and understanding of: principles for planning research based on the achievements of biological sciences and related disciplines and the possibility of putting their results into practice, principles for the 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 work and practical activities, taking into account the sustainable use of biodiversity.		Student knows principles of research planning based on achievements in biological sciences and related fields, possibilities of using their results in practice, principles of operation of equipment and apparatus used in molecular genetics research, as well as the principle of interpreting biological phenomena and processes based on empirical data in research work and practical activities, with consideration for sustainable use of biodiversity.		[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW3] text preparation/written work		
	[GBEL3_U03] The graduate is able to: use research apparatus and tools and, following the correct sequence of operations, carry out simple physical, biological or chemical observations and measurements in laboratory work in the biological sciences.		Student is able to use research equipment and tools, while following the correct sequence of actions, to carry out simple physical, biological, or chemical observations and measurements in laboratory work in the field of biological sciences.		[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report		
	[GBEL3_K08] The graduate is prepared to: takes responsibility for equipment/materials entrusted to it and respects the work of others.		Student responsibly uses the assigned equipment/materials and respects the work of others.		[SK1] oral statement/conversation/ discussion [SK2] presentation/project/paper/ report		

Subject contents	- What actions can be considered as scientific research, asking research questions, framework of a scientific project - Planning experiments: control of the experimental setup, pilot experiments, positive and negative controls, difference between hypothesis and research model - Evaluation of results obtained in experimental research in the context of knowledge regarding control of the experimental setup.		
Prerequisites and co-requisites	none		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	design of a biological experiment	0.0%	20.0%
	asking research questions	0.0%	20.0%
	project proposal in writing	50.0%	60.0%
Recommended reading	Basic literature	Kathy Barker, At the Bench: a laboratory navigator, Cold Spring Harbor Laboratory Press 2005	
	Supplementary literature	Kathy Barker, At the Bench: a laboratory navigator, Cold Spring Harbor Laboratory Press 2005	
	eResources addresses		
Example issues/ example questions/ tasks being completed	how to design experimental controls to make sure that the observed effect is dependent on the independent variable introduced to the system?		
Work placement	Not applicable		

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