

Subject card

Subject name and code	Plant biotechnology, PG_00154428						
Field of study	Biology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
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	5		ECTS credits		1.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Department of Experimental Biology and Plant Biotechnology -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Joanna Rojek				
	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
Subject objectives	To familiarise students with the role of genetically modified plants in the development of biological sciences and the emergence of new research directions and disciplines. To familiarise students with the principles of establishing and maintaining plant in vitro cultures.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOLL3_W14] The graduate knows the theoretical basis of experimental methods and the most important techniques of the biological sciences		The graduate explains the theoretical basis of the experimental methods and the most important techniques used to conduct plant in vitro cultures and to create genetically modified plant organisms		[SW4] test/exam - oral or written		
	[BIOLL3_W10] The graduate is familiar with the development and current state of knowledge and the latest trends in biology, as well as their relationship with other natural disciplines		The graduate shall be familiar with the development and current state of knowledge and the latest trends in the basics of plant biotechnology and indicate their relationship with other natural disciplines		[SW4] test/exam - oral or written		
Subject contents	The role of plants in meeting human needs. Developmental processes in plant in vitro cultures. Types of in vitro cultures. Creation of gene constructs for plant modification. Practical application of biotechnology: obtaining haploids and somatic hybrids; molecular diagnostics of plants with new traits. Genetic transformation of plant cells. Genetically modified plants. Social and legal aspects of plant biotechnology.						
Prerequisites and co-requisites	lack						
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade		
	written exam		51.0%		100.0%		

Recommended reading	Basic literature	Malepszy S. (red.). 2009. Biotechnologia roślin, PWN, Warszawa. Kopcewicz J. (red.). 2007. Fizjologia roślin, PWN, Warszawa.
	Supplementary literature	Loyola-Vargas V.M., Vázquez-Flota F. (red.). 2006. Plant Culture Protocols. W: Methods in molecular B Plant Cell and Tissue Culture A Tool in Biotechnology. Karl- Hermann Neumann, Ashwani Kumar, Jafargholi Imani Springer Science Media, Apr 28, 2009 - EngChong Pua I Michael R. Davey. Plant Developmental Biology - Biotechnological Perspectives. 2010 Springer - Chittaranjan Kole. Wild Crop Relatives: Genomic and Breeding Resources. Oilseeds. 2011 Rojek J, Tucker MR, Rychłowski M, Nowakowska J, Gutkowska M. 2021 and Seed Development in Arabidopsis thaliana. International Journal of 7907. https://doi.org/10.3390/ijms22157907 Woźny J, Rojek J. 2020. Ocena jakościowa i ilościowa wpływu hormonów rzepaku, W: Nauka, Badania i Doniesienia Naukowe 2020: Nauki przyro Future, ISBN 978-83-953882-6- 2, 165-175. Rojek J, Pawełko Ł, Kapusta M, Naczek A, Bohdanowicz J. 2015. Exoge in Arabidopsis thaliana. Acta Societatis Botanicorum Poloniae 84: 28730
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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