

Subject card

Subject name and code	Plant biotechnology, PG_00154427						
Field of study	Biology						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2026/2027		
Education level	undergraduate 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 polish		
Semester of study	5		ECTS credits		1.0		
Learning profile	academic		Assessment form				
Conducting unit	Katedra Biologii Eksperymentalnej i Biotechnologii Roślin -> Faculty of Biology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Wojciech Pokora				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	E-learning hours included: 0.0						
	Additional information: Lab work, Performing experiments						
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 teach students how to plan, establish, maintain, analyse and document plant in vitro cultures and the creation of GM plants using selected examples; to demonstrate the practical use of plant in vitro cultures and GM plants in human life (agriculture, horticulture).						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOLL3_K01] The graduate is prepared to evaluate their own knowledge, understand the need for continuous learning and development, and is open to new ideas		Graduates know the limitations of their own knowledge and understand the need for continuous learning and development and are open to new ideas		[SK1] oral statement/conversation/discussion		
	[BIOLL3_U07] The graduate should be able to independently search for and use available sources of biological information, including electronic sources		The graduate shall independently search for and use available sources of biological information, including electronic sources		[SU2] presentation/project/paper/report [SU6] demonstration of practical skills		
Subject contents	Basic methods for the preparation, establishment and maintenance of in vitro cultures. In vitro cultures of generative organs and meristemsTechniques used in agriculture and horticulture. Isolation and evaluation of plant genomic DNA. Plant transformation.						
Prerequisites and co-requisites	lack						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	completion of the credit work - completion of specific practical work	51.0%	50.0%
	completion of a credit work - project or presentation	51.0%	50.0%
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 Biology. 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 przyrodnicze, ISBN 978-83-953882-6- 2, 165-175. Rojek J, Pawełko Ł, Kapusta M, Naczek A, Bohdanowicz J. 2015. Exogenous hormones in Arabidopsis thaliana. Acta Societatis Botanicorum Poloniae 84: 28730	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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