University of Gdańsk

Subject card

Subject name and code	Plant biotechnology, PG_00196868		
Field of study	Biology		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2028/2029
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_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 the basics of plant biotechnology and indicate their relationship with other natural natural disciplines	[SW4] test/exam - oral or written
[BIOLL3_W14] The graduate has an advanced understanding of experimental methods and the most important techniques used in 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

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 hormonó 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, Naczk 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	

Document generated electronically. Does not require a seal or signature.