

Subject card

Subject name and code	Plant physiology under stress conditions, PG_00103754						
Field of study	Biology						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2025/2026		
Education level	Bachelor's studies	Subject group			Obligatory subject group in the field of study Optional subject group		
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					
Conducting unit	Laboratory of Plant Physiology and Toxicology -> Department of Experimental Biology and Plant Biotechnology -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Agnieszka Baścik-Remisiewicz				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
	Additional information: Analysis of texts with discussion, multimedia presentations prepared by students						
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	0.0	0.0	15		
Subject objectives	<ol style="list-style-type: none"> To acquaint students with the influence of abiotic natural and anthropogenic factors on physiological processes in plants and with the adaptation of plants to changing environmental conditions. To acquaint students with the basic mechanisms of pollutant detoxification in plants. To acquaint students with the possibilities of using plants to clean the environment of chemical pollutants. 						
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 is familiar with the development and current state of knowledge in the field of physiology stress of plant organisms and the latest biological trends and their relationship with other natural disciplines.	[SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW3] text preparation/written work				
	BIOLL3_K01	The graduate are aware of the limitations of their own knowledge and understand the need for continuous learning and development and is open to new ideas.	[SK8] observation of student's independent or team work				
[BIOLL3_U10] the graduate is able to prepare oral presentations in Polish and in a foreign language on specific topics in the field of biology	The graduate has the ability to give oral presentations in Polish on specific issues in plant physiology under stress.	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report					

Subject contents	<p>Influence of natural abiotic factors on plant physiological processes.</p> <p>Influence of substances of anthropogenic origin on the vital activities of plants.</p> <p>Selected mechanisms of detoxification of toxic substances in plant cells.</p> <p>The use of plants to cleanse the environment of chemical pollutants.</p>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	multimedia presentation	51.0%	50.0%
	essay	51.0%	50.0%
Recommended reading	Basic literature		<p>Kopcewicz J., Lewak S. (red.). (2012). Fizjologia roślin. Wyd. PWN, Warszawa.</p> <p>Szmidt-Jaworska A., Kopcewicz J (red).2020. Fizjologia Roślin Wyd. PWN, Warszawa</p> <p>Selected articles from scientific journals.</p>
	Supplementary literature		<p>Aksmann, A., Pokora, W., Baścik-Remisiewicz, A., & Zalewska, M. (2022). Microalgal Metal Remediation from Industrial Wastewater. In Algal Biorefineries and the Circular Bioeconomy (pp. 147-181). CRC Press.</p> <p>Fitter A.H., Hay R.K.M. (2002). Environmental Physiology of Plants. Academic Press, A Division of Harcourt, Inc., UK.</p> <p>Hirt H., Shinozaki K. (red.). (2004). Plant Responses to Abiotic Stress. Springer-Verlag. Prasad M.N.V. (1996). Plant Ecophysiology. J. Wiley & Sons, New York.</p> <p>Selected articles from scientific journals.</p>
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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