University of Gdańsk

Subject card

Subject name and code	Molecular plant physiology, PG_00147014						
Field of study	Genetics and Experimental Biology						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	undergraduate 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	2		Language of instruction		Polish polish		
Semester of study	3		ECTS credits		2.0		
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	30.0	0.0	0.0	30
	E-learning hours included: 0.0						
	Additional information: 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	30		5.0		15.0	50
Subject objectives	Prepare students to conduct basic research in plant molecular physiology.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GBEL3_U07] Work in a team and organize work while adhering to occupational health and safety principles and ergonomics.	Graduate is able to work in a team and organize work	[SU8] observation of student's independent or team work
[GBEL3_K01] The utilization of theoretical knowledge in laboratory and production practice.	The graduate is ready to apply theoretical knowledge in laboratory and production practice	[SK6] demonstration of practical skills
[GBEL3_K02] Critical assessment of one's own knowledge and methods in the field of molecular biology and related disciplines, as well as the commercialization of research.	The graduate is ready to critically evaluate methods in the field of molecular physiology plants	[SK1] oral statement/conversation/ discussion
[GBEL3_K05] Responsibility for the safety of one's own work and others.	The graduate is responsible for the safety of his own work and that of others	[SK8] observation of student's independent or team work
[GBEL3_U03] Proficient in using research equipment and tools, while following the correct sequence of procedures, to conduct basic physical, biological, or chemical observations and measurements in laboratory work within the field of biological sciences.	Graduate uses basic apparatus and research tools maintaining the correct sequence of operations, performs simple physical, biological or chemical observations and measurements in laboratory work in the field of biological sciences	[SU1] oral statement/conversation/ discussion [SU6] demonstration of practical skills
[GBEL3_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze their results, and draw conclusions.	Graduate can independently perform simple practical tasks in the field of physiology molecular physiology of plants.	[SU6] demonstration of practical skills

Subject contents

Properties of chloroplast pigments, functioning of the photosynthetic apparatus under stress, Water management of plant cells and tissues, plant movements, hormonal regulation, assimilation and metabolism of nitrogenous compounds.

Prerequisites and co-requisites

lack

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
performance of practical work	51.0%	50.0%
interpretation and discussion of results	51.0%	25.0%
written credit for a batch of material (entrance exam)	51.0%	25.0%

Recommended reading

Basic literature

Buchanan, Gruissem, Jones (red.), 2015. Biochemistry and molecular biology of Plants, Willey Balacwell.

Szmidt-Jaworska, Kopcewicz J.(red.). 2020. Fizjologia roślin. Wyd. PWN, Warszawa

Taiz L., Zeiger E. (red.). 2010. Plant physiology. The Benjamin/ Cummings Publ. Comp. Inc.

Tukaj Z. (red.). 2012. Przewodnik do ćwiczeń z fizjologii roślin. Wyd. Uniwersytetu Gdańskiego

	Supplementary literature	Scientific publications in experimental biology and molecular physiology of plants Pokora, W., Aksmann, A., Baścik-Remisiewicz, A., Dettlaff-Pokora, A., Rykaczewski, M., Gappa, M., and Tukaj, Z. Changes in nitric oxide/ hydrogen peroxide content and cell cycle progression: Study with synchronized cultures of green alga Chlamydomonas reinhardtii. Journal of Plant Physiology (2017) 208, 8493. Renberg L., Johansson A. I., Shutova T., Stenlund H., Aksmann A., Raven J. A., Gardeström P., Moritz T. & G. Samuelsson A Metabolomic Approach to Study Major Metabolite Changes during Acclimation to Limiting CO2 in Chlamydomonas reinhardtii. Plant Physiol. 154(1): 187÷196. Wilmowicz E., Kućko A., Pokora W., Kapusta M., Jasieniecka-Gazarkiewicz K., Tranbarger T.J., Wolska M., Panek K. EPIP-Evoked Modifications of Redox, Lipid, and Pectin Homeostasis in the Abscission Zone of Lupine Flowers. Int. J. Mol. Sci. 2021 (22), 3001.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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