

Subject card

Subject name and code	The rudiments of plant embryology, PG_00154437						
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			credit	
Conducting unit	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	Understanding of current issues regarding sexual reproduction of angiosperm plants.						

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 is able to indicate the methods used in modern research in plant embryology (B_W14)	[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 is oriented in the development and current state of knowledge of plant embryology and indicates the relationship of this field with other natural disciplines (B_W10)	[SW4] test/exam - oral or written
	[BIOLL3_W04] The graduate is conversant with the course of physiological processes and their relationship to the adaptation of the organism to changing environmental conditions	- The graduate can indicate and explain the relationship of embryological processes in plants to their adaptation to the environment (B_W04)	[SW4] test/exam - oral or written
	[BIOLL3_U12] The graduates will be able to use Polish and foreign languages specific to biology in a way that is understandable and accessible to both specialists and non-specialists	- graduate uses with understanding, both orally and in writing, the terminology used in the specialized scientific language of plant embryology (B_U12)	[SU4] test/exam - oral or written
	[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	- The graduate knows the limitations of his/her own knowledge in the field of plant embryology and understands the need for continuous learning and development and is open to new ideas (B_K01)	[SK4] test/exam - oral or written
Subject contents	1. structure and development of organs of sexual reproduction of angiosperm plants:- formation and structure of the ovary; formation and structure of the anther,- The course of male and female sporogenesis,- formation and maturation of gametophytes; pollination; fertilization,- embryo and endosperm development - seed formation.2. Basics of molecular mechanisms of sexual reproduction of plants.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test	51.0%	100.0%
Recommended reading	Basic literature	- the latest scientific review publications in the field of plant embryology- English-language online materials for teachers (available, for example, on the pages of the journals Plant Cell, Nature)- Lersten NR. 2008. Flowering Plant Embryology: With Emphasis on Economic Species.Wyd. Blackwell Publ., Oxford .- Bednarska E. 1984. Zarys embriologii roślin okrytonasiennych. Wyd. UMK, Toruń- Rodkiewicz B., Śnieżko R., Fryk B., Niewęglowska B., Tchórzewska D., 1996. Embriologia Angiospermae rozwojowa i eksperymentalna. Wyd.UMCS, Lublin- Bhojwani S.S., Soh W.Y. 2001. Current trends in the embryology of angiosperms. Wyd. Kluwer Acad. Publ., Dordrecht	

	Supplementary literature	Rojek J, Kuta E. 2002. Bielmo tkanka odżywiająca zarodek I. Bielmo u roślin okrytonasiennych (Angiospermae) jako wynik podwójnegozapłodnienia. Kosmos 69-84.Kuta E, Rojek J. 2002. Bielmo tkanka odżywiająca zarodek II. Autonomiczny rozwój bielma u roślin okrytonasiennych (Angiospermae). Kosmos 85-98Raghavan V. 1997. Molecular embryology of flowering plants. Wyd. Cambridge Univ. Press, Cambridge;Bhojwani S.S., Soh W.Y. 2001. Current trends in the embryology of angiosperms. Wyd. Kluwer Acad. Publ., Dordrecht;Lersten N.R. 2008. Flowering plant embryology. Wyd. Blackwell Publ., Oxford
	eResources addresses	
Example issues/ example questions/ tasks being completed	Written credit includes the material from the lecture in the form of closed questions.The pass is graded according to the percentage ("UG Academic Regulations").	
Work placement	Not applicable	

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