

Subject card

Subject name and code	The rudiments of plant embryology, PG_00207435						
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			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		1.0		9.0	25
Subject objectives	Understanding of current issues regarding sexual reproduction of angiosperm plants.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_W07] knows the development of biology as a science, its connections with other disciplines and the principles of using biological knowledge in the economy and social life, including ways that are entrepreneurial		
	[BIOLL3_W05] has advanced knowledge of experimental methods, laboratory and field techniques, and the principles of planning and conducting biological research		
	[BIOLL3_W01] knows and understands at an advanced level the structure and functioning of organisms at all levels of the organization of life - from the cell (prokaryotic and eukaryotic), through tissues, organs, to the organism - as well as the relationships between them and their adaptations to the environment		
	[BIOLL3_U07] is able to present and justify her/his adopted position, using appropriate scientific argumentation, adapted to various audiences, and take part in discussions or debates		
	[BIOLL3_K01] is ready to critically evaluate her/his biological knowledge and continuously update and develop it, taking into account scientific advances and the needs of practice		
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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