

**Subject card**

<b>Subject name and code</b>	Diversity of cryptogamic plants, PG_00196806						
<b>Field of study</b>	Biology						
<b>Date of commencement of studies</b>	October 2026	<b>Academic year of realisation of subject</b>			2026/2027		
<b>Education level</b>	Bachelor's studies	<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
<b>Mode of study</b>	full-time studies	<b>Mode of delivery</b>			at the university		
<b>Year of study</b>	1	<b>Language of instruction</b>			Polish		
<b>Semester of study</b>	1	<b>ECTS credits</b>			3.0		
<b>Learning profile</b>	academic	<b>Assessment form</b>			exam		
<b>Conducting unit</b>	Department of Plant Ecology -> Faculty of Biology -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr hab. Joanna Święta-Musznicka				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	30		4.0		41.0	75
<b>Subject objectives</b>	Learning the diversity and evolution of cryptogamic plants. Understanding the functions of cryptogamic plants in ecosystems and the human economy. To review selected representatives of the different systematic groups of cryptogamic plants.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_W06] The graduate will know at an advanced level the characteristics, systematics and understand the evolution of selected groups of organisms including molecular basis and basic concepts and mechanisms of evolution	is able to characterise the main systematic groups of algae, bryophytes and ferns, is familiar with the most recent systematic approaches and theories of evolution of cryptogamic plants taking into account the results of molecular studies, and shall describe the main concepts and mechanisms of evolution	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[BIOLL3_W01] The graduate knows and understands at an advanced level the constituent elements, the differences in the structure and function of prokaryotic and eukaryotic cells	can describe the basic structural elements and explain the differences in structure and function of a prokaryotic and eukaryotic cell using photoautotrophic organisms as an example	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
	[BIOLL3_K01] The graduate is prepared to evaluate his/her own knowledge, understand the need for continuous learning and development, and is open to new ideas	assesses own knowledge and understands the need for continuous learning and development	[SK8] observation of student's independent or team work
	[BIOLL3_U08] The graduate is able to learn independently, in a focused manner	learns independently in a directed manner	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
[BIOLL3_U06] The graduate can read with comprehension scientific biological texts in Polish and simple texts in English	reads with comprehension simple scientific biological texts in Polish and English	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written	
Subject contents	Contemporary classification systems of cryptogamic plants. Application of palaeobotanical and molecular methods in reconstructing plant evolution. The origins of life on Earth. The theory of serial endosymbiosis. Phylogenetic relationships and evolutionary trends. Characterisation of the main systematic groups of pro- and eukaryotic aquatic and terrestrial photoautotrophs: morphological and anatomical structure, life cycles, occurrence, ecological requirements, role in the natural environment, bioindication properties. Human use of cryptogamic plants in industry, medicine and forensics.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	egzamin	51.0%	100.0%
Recommended reading	Basic literature	<p>Hoek C. van den, Mann D. G., Jahns H. M. 1995. Algae. An introduction to phycology. Cambridge Univ. Press, Cambridge.</p> <p>Lee R. E. 1999. Phycology. Cambridge Univ. Press, Cambridge.</p> <p>Podbielkowski Z., Rejment-Grochowska I., Skirgiełło A. 1979. Rośliny zarodnikowe. PWN, Warszawa.</p> <p>Szweykowska A., Szweykowski J. 2020. Botanika, T. 1 i 2. PWN, Warszawa.</p> <p>Kadłubowska J. 1976. Zarys algologii. PWN, Warszawa.</p>	

	Supplementary literature	<p>Brodie J., Lewis J. 2007. Unravelling the algae, the past, present and future of algal systematics. The Systematics Association Special Vol. Ser. 75, CRC Press Taylor &amp; Francis Group, New York.</p> <p>Mehlreter K., Walker L. R., Sharpe J. M. 2010. Fern Ecology. Cambridge Univ. Press, Cambridge.</p> <p>Ruggiero M.A., Cavalier-Smith T. i in. 2015. A higher level classification of all living organisms. PlosOne 10(4): e0119248.</p> <p>Schofield W. B. 1981. Introduction to bryology. Mac Millan, New York. Vanderpoorten A., Goffinet B. 2010. Introduction to Bryophytes. Cambridge University Press.</p> <p>Willis K.J., McElwain J. C. 2002. The evolution of plants. Oxford Univ. Press. Wójciak H. 2007. Porosty, mszaki, paprotniki. Flora Polski. Multico, Warszawa.</p>
Example issues/ example questions/ tasks being completed	eResources addresses	history of botanical research; basics of organism classification; organism classification systems; Cavalier-Smith system; endosymbiosis theory; reconstruction of plant evolution; structure, occurrence and use of selected groups of photoautotrophs
Work placement		Not applicable

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