University of Gdańsk

Subject card

Subject name and code	Diversity of cryptogamic plants, PG_00154384						
Field of study	Biology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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	1		Language of instruction		Polish		
Semester of study	1		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Department of Plant Ecology -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Joanna Święta-Musznicka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	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	30		4.0		41.0	75
Subject objectives	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 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 identify the constituent elements and explain 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_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
[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	assesses own knowledge and understands the need for continuous learning and development	[SK8] observation of student's independent or team work

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

Hoek C. van den, Mann D. G., Jahns H. M. 1995. Algae. An introduction to phycology. Cambridge Univ. Press, Cambridge.

Lee R. E. 1999. Phycology. Cambridge Univ. Press, Cambridge.

Podbielkowski Z., Rejment-Grochowska I., Skirgiełło A. 1979. Rośliny zarodnikowe. PWN, Warszawa.

Szweykowska A., Szweykowski J. 2020. Botanika, T. 1 i 2. PWN, Warszawa.

Kadłubowska J. 1976. Zarys algologii. PWN, Warszawa.

	Supplementary literature	Brodie J., Lewis J. 2007. Unravelling the algae, the past, present and future of algal systematics. The Systematics Associa tion Special Vol. Ser. 75, CRC Press Taylor & Francis Group, New York. Mehltreter K., Walker L. R., Sharpe J. M. 2010. Fern Ecology. Cambridge Univ. Press, Cambridge. Ruggiero M.A, Cavalier-Smith T. i in. 2015. A higher level classification of all living organisms. PlosOne 10(4): e0119248. Schofield W. B. 1981. Introduction to bryology. Mac Millan, New York.Vanderpoorten A., Goffinet B. 2010. Introduction to Bryophytes. Cambridge University Press. Willis K.J., McElwain J. C. 2002. The evolution of plants. Oxford Univ. Press. Wójciak H. 2007. Porosty, mszaki, paprotniki. Flora Polski. Multico, Warszawa.
	eResources addresses	
Example issues/ example questions/ tasks being completed	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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