University of Gdańsk

Subject card

Subject name and code	Diversity of cryptogamic plants, PG_00196805						
Field of study	Biology						
Date of commencement of studies	October 2026		Academic year of realisation of subject		2026/2027		
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		2.0		
Learning profile	academic		Assessment form		credit		
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	0.0	0.0	30.0	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		6.0		14.0	50
Subject objectives	Learning about the diversity of cryptogamic plants. Learning about the functions of cryptogamic plants in ecosystems and the human economy. To review selected representatives of the different systematic groups of cryptogamic plants. Learning to identify algae, mosses, liverworts, horsetails and ferns.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLL3_U02] The graduate is able to make observations individually and in teams, and carry out basic physical, biological and chemical measurements in the field or laboratory	makes observations of microscopic and macroscopic material and performs basic descriptions and measurements of organisms in the laboratory	[SU1] oral statement/conversation/ discussion [SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU6] demonstration of practical skills
[BIOLL3_U01] The graduate is able to use basic apparatus and research tools and follow the correct sequence of operations in laboratory and field work	uses basic equipment and research tools for the collection, preparation and identification of cryptogamic plants and follows the correct sequence of operations in laboratory and field work	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU5] implementation of a problem task
[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 latest systematic approaches and theories of evolution of cryptogamic plants, taking into account the results of molecular studies, and describes the basic concepts and mechanisms of evolution	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report [SW5] implementation of a problem task
[BIOLL3_W01] The graduate knows and uderstands 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 the example of photoautotrophic organisms	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW2] presentation/project/paper/ report
[BIOLL3_K06] The graduate is prepared to take responsibility for the entrusted equipment/materials and for his/her own work and the work of others	is responsible for the equipment/ materials provided and for his/her own work, and respects the work of others	[SK8] observation of student's independent or team work

Subject contents

Methods of collecting and identifying cryptogamic plants for scientific and teaching purposes. Effects of habitat conditions and interspecific competition on the occurrence of plants. Cryptogamic plants in modern aquatic, marsh and terrestrial ecosystems. Identifying habitats of occurrence, identification of algae, bryophytes and ferns, collection of herbarium material, bioindicative value of plants. Basics of classification of cryptogamic plants in evolutionary terms. Characterisation of morphological and anatomical diversity of cryptogamic plants based on selected organisms. The use of cryptogamic plants in industry and medicine. Protection of cryptogamic plants in Poland.Field classes are organised at the beginning of the semester in the form of block classes (3 field trips of 5 lesson hours each) in Gdańsk and Sopot Kamienny Potok.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
attendance	85.0%	0.0%
colloquium V	51.0%	7.69%
colloquium VI	51.0%	7.69%
colloquium IV	51.0%	7.69%
colloquium III	51.0%	7.69%
colloquium II	51.0%	7.69%
colloquium I	51.0%	7.69%
exercise report	51.0%	7.69%
presentation	51.0%	7.7%
worksheets	51.0%	7.7%
practical pass IV	51.0%	7.7%
practical pass III	51.0%	7.69%
practical pass II	51.0%	7.69%
practical pass I	51.0%	7.69%

Recommended reading	Basic literature	Szweykowska A., Szweykowski J. 2020. Botanika, Systematyka T. 2. PWN, Warszawa. Wójciak H. 2007. Porosty, mszaki, paprotniki. Flora Polski. Multico, Warszawa. Podbielkowski Z., Rejment-Grochowska I., Skirgiełło A. 1979. Rośliny zarodnikowe. PWN, Warszawa. Ruggiero M. A, Cavalier-Smith T. i in. 2015. A higher level classification of all living organisms. PlosOne 10(4): e0119248. Kadłubowska J. 1976. Zarys algologii. PWN, Warszawa. Szweykowska A., Szweykowski J. 2017. Botanika, Systematyka T. 2. PWN, Warszawa.
	Supplementary literature	Kaźmierczakowa R. (red.). 2016. Polska czerwona lista paprotników i roślin kwiatowych. Instytut Ochrony Przyrody PAN, Kraków. Kremer B.P., Muhle H. 1998. Porosty, mchy, paprotniki. Leksykon przyrodniczy. Świat Książki, Warszawa. Szafran B. 1957. Mchy. T. 1, 2. Flora Polska. Rośliny zarodnikowe Polski i ziem ościennych. PWN, Warszawa. Vanderpoorten A., Goffinet B. 2010. Introduction to Bryophytes. Cambridge University Press. Mehltreter K., Walker L. R., Sharpe J. M. 2010. Fern Ecology. Cambridge Univ. Press, Cambridge.
	eResources addresses	
Example issues/ example questions/ tasks being completed	Characteristics of the main groups of photoautotrophic organisms according to the Cavalier-Smith system. Basis of classification in evolutionary terms. Morphological forms of organisms. Overview of aquatic photoautotrophs (e.g. Cyanobacteria, Bacillariophyceae, Phaeophyceae). Review of terrestrial forms with a dominant sporophyte (e.g. Tracheophyta: Lycopodiophytina).	
Work placement	Not applicable	

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