

Subject card

Subject name and code	Mycology, PG_00207400						
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	2		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Lichenology and Experimental Mycology -> Department of Plant Taxonomy and Nature Conservation -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Magdalena Oset				
	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		2.0		18.0	50
Subject objectives	1. To equip the student in mycology, structure of fungal mycelium, and taxonomic classification.2. To train the student in laboratory techniques used in mycology (fungal culture, molecular techniques, chromatographic techniques).3. To equip students with basic knowledge about fungi, their biological properties, their importance in nature, and their natural values in bioindication and protection						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[BIOLL3_W03] knows and understands at an advanced level the principles of life functioning at the level of populations, biocenoses and ecosystems, the determinants of biological diversity as well as the mechanisms and molecular basis of the evolution of organisms		
	[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_U03] is able to search for, select and critically analyze information from various sources, including scientific literature and electronic databases, as well as read and understand scientific texts in Polish and English		
	[BIOLL3_U01] is able to use basic research techniques and tools appropriate for the biological sciences and perform physical, chemical and biological observations and measurements in the laboratory and in the field, individually and in a team, while organizing her/his work appropriately and in a maintained way		
Subject contents	[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		
	Systematics of fungi. Structure of fungal moulds, including lichens and their bionts. Evolution of fungi. Parasitic fungi (facultative and obligate, including human pathogenic fungi). Saprotrophic fungi. Endophytic fungi. Secondary metabolites and chromatography thin-layer chromatography (TLC) as a method for their detection and identification. Barcoding as a method of fungal identification. Fungi as indicators of changes natural conditions (effects of pollution on fungal occurrences, fungi as indicators of forest ecosystem health).		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	three colloquia: written form in the form of test questions and open questions, verifying the degree of mastery of the material covered;	51.0%	60.0%
	multimedia presentation made by students themselves	51.0%	20.0%
	report on laboratory work	51.0%	20.0%

Recommended reading	Basic literature	Bystrek J. 1997. Podstawy lichenologii. Wydaw. Uniwersytetu Marii Curie-Skłodowskiej. Müller E., Loeffler W. 1987. Zarys Mykologii. PWRiL, Warszawa. Szwejkowska A., Szwejkowski J. 2009. Botanika. Tom 1 i 2. PWN, Warszawa. Literature studied independently by the student Bystrek J. 1997. Podstawy lichenologii. Wydaw. Uniwersytetu Marii Curie-Skłodowskiej. Szwejkowska A., Szwejkowski J. 2009. Botanika. Tom 1 i 2. PWN, Warszawa.
	Supplementary literature	Dynowska M., Ejdys E. (red.). 2011. Mikologia laboratoryjna. Przygotowanie materiału badawczego i diagnostyka. Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego w Olsztynie. Guzow-Krzemińska B. 2012. Molecular approaches in conservation of lichens. In: Lichen protection - Lichen protected species. Lipnicki L. (ed.) p. 77-89. Guzow-Krzemińska B., Kukwa M. 2013. Metody badawcze we współczesnej taksonomii porostów. Kosmos 62(1): 95-103. Kubiak D., Kukwa M. 2011. Chromatografia cienkowarstwowa (TLC) w lichenologii. W: Dynowska M., Ejdys E. (red.). Mikologia laboratoryjna. Przygotowanie materiału badawczego i diagnostyka. Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego w Olsztynie, s. 176-190. Kukwa M. 2012. Chemical and molecular methods and their impact on the estimation of threat status of lichens in Poland. W: Lipnicki L. (red.). Lichen protection Lichen protected species. SONAR Sp. z o.o., Gorzów Wielkopolski, s. 93-100. Müller E., Loeffler W. 1987. Zarys Mykologii. PWRiL, Warszawa. Oset M. 2014. The lichen genus <i>Stereocaulon</i> (Schreb.) Hoffm. in Poland a taxonomic and ecological study. Monographiae Botanicae 104: 1-81. Ossowska E. A. 2021. Porosty z rodzaju <i>Parmelia</i> w Polsce. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk. Purvis W. 2000. Lichens. Natural History Museum, London/Smithsonian Institution, London, Washington D.C. 112 pp. .
	eResources addresses	
Example issues/ example questions/ tasks being completed	Introduction to mycology: issues concerning the systematic position of fungi, morphological and anatomical structure of fungi. Familiarisation and characterisation of representatives of the kingdom Protozoa and Chromista. Establishment of mould fungus cultures. Familiarisation and characterisation of the representatives of the kingdom Fungi. Characteristics of mould fungi on the basis of observations of own culture. Working with specimens. Division Zoopagomycota Division Mucoromycota Division Ascomycota Division Basidiomycota Division Entorrhizomycota Group work - Multimedia presentations prepared in groups: Fungi in medicine. Fungi in the kitchen. Pathogenic fungi. Rare and endangered species of fungi. Lichens in the kitchen. Lichens used in bioindication. Introduction to applied lichenology: issues concerning morphological and anatomical structure of lichens, bioindication and lichen conservation. Working with specimens. Identification of lichens using taxonomic keys. Independent work of students. Chemotaxonomy: spot test method and TLC. Work in the TLC laboratory. Introduction to molecular studies. Steps in conducting molecular studies. Working in the molecular laboratory. Analysis of phylogenetic data: match preparation, blast programme, barcoding. Work in the computer lab.	
Work placement	Not applicable	

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