University of Gdańsk

Subject card

Subject name and code	Mycology, PG_00130285						
Field of study	Biology						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2024/2025		
Education level	undergraduate 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				
Conducting unit	Pracownia Lichenologii i Mykologii Eksperymentalnej -> Katedra Taksonomii Roślin i Ochrony Przyrody -> Faculty of Biology						
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		6.0		14.0	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_K01] The graduate is prepared to evaluate their own knowledge, understand the need for continuous learning and development, and is open to new ideas	- is aware of the limitations of his/her own knowledge and understands the need for constant learning and development is open to new ideas (B_K01) - carries out a critical self-assessment of his/her own competence and updates his/her knowledge and improve skills (B_K02)	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
[BIOLL3_W03] The graduate knows the structure and functional relationships at the cellular, tissue, organ and organismal levels	- presents the structure at tissue, organ and organismal level fungi (B_W03) - presents the characteristics, systematics and evolution of selected groups of fungi including molecular basis (B_W06)	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW3] text preparation/written work [SW5] implementation of a problem task
[BIOLL3_U06] The graduate can read with comprehension simple scientific biological texts in Polish and simple texts in English	- make observations and carry out basic measurements in the laboratory biological and chemical measurements (B_U02) - reads with understanding simple scientific biological texts in Polish and simple texts in English (B_U06)	[SU1] oral statement/conversation/discussion [SU2] presentation/project/paper/report [SU3] text preparation/written work
[BIOLL3_U02] The graduate will be able to make observations individually and in teams, and carry out basic physical, biological and chemical measurements in the field or laboratory	- make observations and carry out basic measurements in the laboratory biological and chemical measurements (B_U02) - reads with understanding simple scientific biological texts in Polish and simple texts in English (B_U06)	[SU5] implementation of a problem task [SU6] demonstration of practical skills [SU8] observation of student's independent or team work
[BIOLL3_K02] The graduate is prepared to critically self-assess their own competences and to update and improve their knowledge and skills	- is aware of the limitations of his/her own knowledge and understands the need for constant learning and development is open to new ideas (B_K01) - carries out a critical self-assessment of his/her own competence and updates his/her knowledge and improve skills (B_K02)	[SK1] oral statement/conversation/discussion [SK2] presentation/project/paper/report
[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	- presents the structure at tissue, organ and organismal level fungi (B_W03) - presents the characteristics, systematics and evolution of selected groups of fungi including molecular basis (B_W06)	[SW4] test/exam - oral or written [SW1] oral statement/conversation/discussion [SW2] presentation/project/paper/report [SW3] text preparation/written work [SW5] implementation of a problem task

Subject contents

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
multimedia presentation made by students themselves	51.0%	20.0%
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%
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.Szweykowska A., Szweykowski J. 2009. Botanika. Tom 1 i 2. PWN, Warszawa.Literature studied independently by the studentBystrek J. 1997. Podstawy lichenologii. Wydaw. Uniwersytetu Marii Curie-Skłodowskiej.Szweykowska A., Szweykowski 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 UniwersytetuWarmińsko-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. 176190.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. 93100.Müller E., Loeffler W. 1987. Zarys Mykologii. PWRiL, Warszawa.Oset M. 2014. The lichen genus Stereocaulon (Schreb.) Hoffm. in Poland a taxonomic and ecological study. Monographiae Botanicae 104: 1-81.Ossowska E.A. 2021. Porosty z rodzaju Parmelia w Polsce. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk.Purvis W. 2000. Lichens. Natural History Museum, London/Smithsonian Institution, London, Washington D.C. 112 pp. .
	eResources addresses	Adresy na platformie eNauczanie:
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 ZoopagomycotaDivision MucoromycotaDivision AscomycotaDivision BasidiomycotaDivision EntorrizomycotaGroup 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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