

COURSE UNIT DESCRIPTION - BOTANY AND MYCOLOGY

Course unit title	Code
BOTANY AND MYCOLOGY	

Lecturer(s)	Department(s)
Coordinator: Assoc. Prof. dr. Ingrida PRIGODINA LUKOŠIENĖ Other(s): Lect. Sigitas Juzėnas	Faculty of Natural Sciences, Department of Botany and Genetics, M.K. Čiurlionio g. 21/27, LT-03101 Vilnius

Cycle	Level of the course unit	Type of the course unit
Full-time studies (1 st stage)	1 out of 1	Compulsory

Mode of delivery	Period of delivered	Language(s) of instruction
Face-to-face	2 nd semester, spring	Lithuanian

Prerequisites and corequisites	
Prerequisites: secondary-school general courses in biology and natural sciences	Corequisites (if any): None

Number of credits allocated to the course unit	Student's total workload	Contact hours	Self-study and research hours
5	140	64	76

Purpose of the course unit: programme competences to be developed		
<p>The course unit aims to develop:</p> <p><i>Subject specific competences:</i></p> <ul style="list-style-type: none"> • understanding basic mycological and botanical knowledge and theories; • understanding of structuring principles and functional relationships between organisms in the nature; • ability to explain and compare the biological and ecological characteristics of different mycological and botanical organisms; • ability to evaluate practical significance of fungi, algae and plants; • laboratory skills in examination of fungal and botanical macroscopical and microscopical structure, and illustration of study objects. <p><i>Development of general competences:</i></p> <ul style="list-style-type: none"> • capability of self-study and improvement; • ability to convey knowledge in oral and written forms; • competence in analysis. 		
Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
<p>Upon the successful completion of this course, students will:</p> <ul style="list-style-type: none"> • Describes and explains basic mycological, algological and botanical terminology and concepts; • Describes and analyzes characteristics of fungal and botanical biology and ecology; • Describes principles of evolution, biology and ecology of terrestrial plants, fungi and algae; • Performs observations (study) of fungal and botanical specimens in laboratory. • Explains the principles of fungal and botanical functioning in nature and the practical 	<p>Lectures, problem based learning; laboratory work; self-study.</p>	<p>Intermediate assessments (two tests), short survey during lectures, examination.</p>

value of fungi, algae ant plants; • Applies obtained knowledge into practice;									
• Works in groups and analyzes botanical, mycological or algological themes; • Organizes theme presentation, assessment, analysis and summarizes the group results;	Working in groups, self-study of reference material.						Group presentation of themes.		
Content: breakdown of the topics	Contact hours						Self-study work: time and assignments		
	Lectures	Tutorials	Seminars	Exercises	Laboratory work	Internship/work placement	Contact hours	Self-study hours	Assignments
1. Fundamentals of Algology	6				4		10	12	Self-study of reference material, teamwork, analysis of group tasks.
Algal place in the system of living organisms. Origin and phylogeny of algae. The structure of algae.	2						2	3	
Algal ecological groups, reproduction, life cycles.	2						2	3	
Systematical groups of algae (<i>Cyanobacteria</i> , <i>Rhodophyta</i> , <i>Chlorophyta</i> , <i>Ochrophyta</i> , <i>Dinophyta</i> , <i>Cryptophyta</i> , <i>Euglenophyta</i>).	2				4		6	6	
2. Fundamentals of Mycology	10				12		22	26	Self-study of reference material, teamwork, analysis of group tasks.
Fungal place in the system of living organisms. Origin and phylogeny of fungi. Somatic structure of fungi and analogous organisms. Modifications of hyphae.	2						2	3	
Fungal spores and fruit-bodies, their types. Stroma. Sexual and asexual reproduction of fungi, development cycles and distribution of fungi.	2						2	3	
Nutrition of fungi. Fungal ecological groups: saprotrophs, biotrophs, symbiotrophs. Role in nature and practical significance of fungi.	2						2	3	
Systematical groups of fungi (<i>Chytridiomycota</i> , <i>Zygomycota</i> , <i>Ascomycota</i> , <i>Basidiomycota</i>). Characteristics of phylums, diversity of organisms, their biology, ecology and role.	2				8		10	10	
Diversity of of analogous organisms to fungi (<i>Myxomycota</i> , <i>Oomycota</i> , <i>Lichenes</i>). Characteristics of organisms, their biology, ecology and role.	2				4		6	7	
3. Fundamentals of Botany	16				16		32	38	Self-study of reference material, teamwork, analysis of group tasks.
The place of archegoniate and flowering plants among system of other organisms and origin of them. Principles of plant systematic and nomenclature.	2						2	3	

Common biological features of archegoniate and flowering plants, the main lines of their evolution, their adaptations to live in terrestrial conditions. The main morphological and anatomical structures of terrestrial plants.	2						2	3	
Characteristic of <i>Bryophyta</i>	1				2		3	3	
Characteristic of <i>Lycopodiophyta</i>	1				2		3	3	
Characteristic of <i>Equisetophyta</i>	1				2		3	3	
Characteristic of <i>Polypodiophyta</i>	1				2		3	3	
The seed plants. Seed biological advantages. Characteristic of <i>Pinophyta</i> .	2				2		4	4	
Characteristic of flowering plants (<i>Magnoliophyta</i>). The origin and evolution of flowering plants, reasons for the success. Flower, flowers main parts: the calyx, corolla, androecium, gynoecium. Inflorescences. Biology of flowers pollination. Seeds and fruits dispersal.	3				2		5	6	
The most important systematic groups of flowering plants, their characteristics.	3				4		7	10	
Total	32				32		64	76	

Assessment strategy	Weight, %	Assessment period	Assessment criteria
Intermediate assessments (test) – mycological and algological themes (written)	40	9 th week of the course	Test of 40 questions from 8 themes. <20 answered questions - 2-4 (insufficient) 20-24 answered questions - 5 (sufficient) 25-29 answered questions -6 (satisfactory) 30-35 answered questions - 7(highly satisfactory) 36-40 answered questions -8 (good) 40-45 answered questions -9 (very good) 46-50 answered questions --10 (excellent)
Group presentation by mycological and algological themes (oral)	10	9 th week of the course	Assessment quality of oral presentation and answers of the questions, depth of knowledge, creativity, self-dependence, ability to express themselves clearly and correctly discuss, ability to express clear thoughts and correctly discuss. 10-point assessment system defined in the Study achievement assessment methods of Vilnius University.
Intermediate assessments (test) – botanical themes (written)	40	16 th week of the course	Test of 40 questions from 8 themes. <20 answered questions - 2-4 (insufficient) 20-24 answered questions - 5 (sufficient) 25-29 answered questions -6 (satisfactory) 30-35 answered questions - 7(highly satisfactory) 36-40 answered questions -8 (good) 40-45 answered questions -9 (very good) 46-50 answered questions --10 (excellent)
Group presentation by botanical themes (oral)	10	16 th week of the course	Assessment quality of oral presentation and answers of the questions, depth of knowledge, creativity, self-dependence, ability to express themselves clearly and correctly discuss, ability to express clear thoughts and correctly discuss. 10-point assessment system defined in the Study achievement assessment methods of Vilnius University.
Total	100		
Written examination	100	End of the term	If the accumulative score is not less than 5, it can be inserted in place of the examination assessment. Test of 80 questions from

			botanical, mycological and algological themes.
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Author	Year of publication	Title	Issue of a periodical or volume of a publication	Publishing place and house or web link
Compulsory reading				
Virtual learning environment of the course (course material)	2013	Botanika ir mikologija (Botany and mycology)		http://www.bg.gf.vu.lt
J. Kostkevičienė	2009	Algologija (Algology)	(Library of FNS VU)	Vilnius University Press
J. Webster, R. Webster,	2006	Introduction to Fungi	(Library of FNS VU)	Cambridge University Press
J. R. Naujalis, E. Meškauskaitė, S. Juzėnas, A. Meldžiukienė	2009	Botanikos praktikos darbai. Archegoniniai ir žiediniai augalai. (The Botanical practice works: archegoniate and flowering plants: textbook for the high school biomedical science study programs students).	58 / Bo-363 (Library of FNS VU)	Vilnius University Press
Optional reading				
Nach T.H.	2008	Lichen biology	582.2 / Li-67 (Library of FNS VU)	Cambridge University Press
Beck C. B.	2010	An Introduction to Plant Structure and Development: Plant Anatomy for the Twenty-First Century	U-angl. / 581.8 / Be-35 (Library of FNS VU)	Cambridge University Press