COURSE UNIT DESCRIPTION - BIOLOGY PRACTICE

Course unit title	Code
BIOLOGY PRACTICE	

Lecturer(s)	Department(s)
Coordinator: Assoc. prof. Ingrida PRIGODINA LUKOŠIENĖ **Other(s):** Assoc. prof. dr. Jurga Turčinavičienė, Lect. Sigitas Juzėnas, Assoc. Prof. Eduardas Budrys, Assoc. Prof. Kęstutis Arbačiauskas, Lect. Algirdas Kaupinis	Faculty of Natural Sciences, Department of Botany and Genetics and Department of Zoology, M.K. Čiurlionio g. 21/27, LT-03101 Vilnius

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

Mode of delivery	Period of delivered	Language(s) of instruction
Face-to-face	3th semester, autumn	Lithuanian

Prerequisites and corequisities	
Prerequisites: fundamentals of zoological, botanical and mycological knowledge	**Corequisities (if any):** none

Number of credits allocated to the course unit	Student's total workload	Contact hours	Self-study and research hours
5	**140**	**120**	**20**

Purpose of the course unit: programme competences to be developed

Main purpose is to introduce students to diversity of animals, plants and fungi in different habitats and to form a practical observation, identification, description and analysis skills of these organisms.

Subject-specific competences:

- Knowledge and understanding of basic mycological, botanical and zoological field research methods;
- knowledge and understanding of basic mycological, zoological and botanical knowledge and theories;
- understanding of functional relationships between different organisms,
- skills for argumentative explanation and comparison of distribution of organisms in different habitats, forming of observation, identification of structure of organisms and illustration of study objects.

General competences:

- skills of self-study and improvement;
- skills to convey knowledge in oral and written forms;
- competence in analysis.

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Upon the successful completion of this course, students will: • Describes the diversity of animals, plants and fungi in nature, the distribution in different types of habitats, the basic regularities of ecological distribution of these organisms in the nature;	Lectures in laboratory and in the nature, self-study of reference material	Individual oral examination, defense of individual research results
• Describes different species of animals, plants and fungi from different habitats and explains their characteristics; • Describes the main difference between	Lectures in laboratory and in the nature, discussion , self-study of reference material	Individual oral examination, defense of individual research results

the species, genus or family and describes the modern principles of classification of organisms;		
• Describes the basic field research methods, concepts, terminology, makes search of information in different sources;	Lectures in laboratory and in the nature, discussion , self-study of reference material	Individual oral examination, defense of individual research results
• Performs self-study field research of botanical, zoological and mycological diversity, select appropriate research methods;	Individual tasks, group work, self-study of reference material, consultation	Individual oral examination, defense of individual research results
• Relate knowledge with practical application, interprets the information and uses it to perform tasks;	Individual tasks, discussion of research methods, group work, consultation	Individual oral examination, defense of individual research results
• Presents and argues results, objectively evaluates them and makes reasonable conclusions.	Individual tasks, group work	Individual oral examination, defense of individual research results

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. Mycological field studies	**2**		**4**			**24**	**30**	**5**	Analysis of the literature, individual working, forming, identification and description of fungal collection.
Biodiversity of saprotrophic and ksilotrophic fungi, lichens, their field research methods, collecting and analysis.	1		2			12	15	3	Analysis of the literature, forming, identification and description of fungal collection.
Biodiversity of mushrooms, parasitical fungi of plants, Myxomycota and Oomycota, their field research methods, collecting and analysis.	1		2			12	15	2	Analysis of the literature, forming, identification and description of fungal collection.
2. Botanical field studies	**4**		**4**			**22**	**30**	**5**	Analysis of the literature. Field studies - working in groups, and individual and group work in the laboratory. Collecti ons, and report preparation and presentation.
Lithuania vegetation development and its structure-forming factors, their basic research methods.	2		2			11	15	3	Analysis of the literature. Selection and implementation of research methods – Field work in the group. Analysis of

									the results and their presentation.
Formation of ability to perform independently a plant diversity field studies.	2		2			11	15	2	Analysis of the literature. Individual work with plant identification. Teamwork through thematic collection of plants.
3. Zoological field studies			**28**			**32**	**60**	**10**	Collecting, preservation and identification of collected material.
Biodiversity of aquatic invertebrates. Taxonomy, identification and ecology. Communities of river, lake and pond. Biodiversity of Coleoptera, identification of main families, biology and ecology.			7			8	15	3	Collecting, preservation and identification of collected material.
Biodiversity of aterrestrial invertebrates. Orders Odonata, Orthoptera, Diptera, Hymenoptera, common species and identification, the role in the ecosystems.			7			8	15	2	Collecting, preservation and identification of collected material.
Biodiversity of aterrestrial invertebrates. Orders Blattodea, Hemiptera, Lepidoptera, common species and identification, the role in the ecosystems.			7			8	15	2	Collecting, preservation and identification of collected material.
Biodiversity and taxonomy of vertebrates, identification by morphological characters, voice and life activity.			7			8	15	3	Identification of vertebrates in zoological collections (museum).
Total	**6**		**36**			**78**	**120**	**20**	

Assessment strategy	**Weight,%**	**Assessment period**	**Assessment criteria**
Evaluation of knowledge on morphology, ecology and main diagnostic characters of different taxonomic groups, ability to identify invertebrates and vertebrates, quality of invertebrate collection.	50	The end of practice	10 – excellent knowledge and abilities, answers are all correct. 9 – very good knowledge and abilities, can be not essential mistakes. 8 – good knowledge and abilities, mistakes are present. 7 – average knowledge and abilities, essential mistakes are present. 6 – knowledge and abilities do not reach average. 5 – knowledge and abilities meet minimal requirements. 4 – knowledge and abilities are minimal.
Test of knowledge about Lithuania vegetation development and its structure-forming factors, their basic research methods	8	During the summer practice	Test is made from 20 close questions. Answer of each question is evaluated by 0.5 points.
Assessment of practical skills to identify an unknown plant independently	4	During the summer practice	The plant is identified at the species level - 5 points up to genus - 4 points, up to the family - 3 points. The unidentified plant - 0 points. For recognition provided two examples of types of plants. The collected scores summed.
Assessment of thematic collection of plants.	8	The end of practice	The ten-point scale is seen in the same way: a collection compliance with formulated tasks and scientific quality of the herbarium.

Assessment of Vegetation survey results, their analysis and presentation.	5	The end of practice	The ten-point scale is seen in the same way: an analysis compliance with formulated tasks and quality of presentation.
Test of 10 fungi species.	15	During the summer practice	Test is made from 10 close questions. Answer of each question is evaluated by 1 points.
Evaluation of knowledge on diagnostic characters and ecology of fungi, quality of fungal collection.	10	The end of practice	10 – excellent knowledge and abilities, answers are all correct. 9 – very good knowledge and abilities, can be not essential mistakes. 8 – good knowledge and abilities, mistakes are present. 7 – average knowledge and abilities, essential mistakes are present. 6 – knowledge and abilities do not reach average. 5 – knowledge and abilities meet minimal requirements. 4 – knowledge and abilities are minimal.
Total	**100**		

Author	**Year of publica-tion**	**Title**	**Issue of a periodical or volume of a publication**	**Publishing place and house or web link**
Compulsory reading				
Chinery M.	2004	Pareys Buch der Insekten.	(Library of FNS VU)	Franckh-Kosmos Verlags-Gmbh & Co.KG, Stuttgart
Gasiūnaitė Z., Arbačiauskas K.	2006 2009	Basic on investigation of Zooplankton	(Library of FNS VU)	Klaipėda, Klaipėdos universiteto leidykla
Ivinskis P., Augustauskas J.	2004	Butterflies of Lithuania	(VU GMF biblioteka)	Vilnius
Jukonienė I.	2003	Mosses of Lithuania	58 / Ju- 58 (Library of FNS VU)	Vilnius, Botanikos instituto leidykla
Keizer G. J.	1996	Encyclopedia of mushrooms	582.2/Ke-53 (Library of FNS VU)	Alma Littera
Kurlavičius P. V.	2003	Identification guide on Lithuanian birds	(VU GMF biblioteka)	Vilnius
Lekavičius A.	1989	Identification guide on plants	58 / Le-156 (Library of FNS VU)	Vilnius, Mokslas
Naujalis J. R., Meškauskaitė E., Juzėnas S., Meldžiukienė A.	2009	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, Vilniaus universiteto leidykla
Naujalis J., Kalinauskaitė N., Grinevičienė M.	1995	Identification guide on Lithiaunian liverworts	582.2 / Na-263 (Library of FNS VU)	Vilnius, Žodynas
Randlane T.	2011	Epiphytic macrolichens of Estonia	582.2/Ee-27 (Library of FNS VU)	Alma Littera
Tupčiauskaitė J.	2012	Botanical field practice	(Library of FNS VU)	Vilnius, Vilniaus universiteto leidykla http://www.bg.gf.vu.lt/?Studijos:Bakalauro_studijos

				:Botanikos mokomoji lauko praktika
Urbonas V. (red.)	1991-2007	Lithuanian Fungi (multvolume edition)	582.2/Li-235 (Library of FNS VU)	Botanikos institutas
Urbonas V.	2007	Atlas of Lithuanian fungi	(Library of FNS VU)	Lututė
Virbickas J.	2000	Fishes of Lithuania	(Library of FNS VU)	Vilnius
Optional reading				
Ulevičius A., Juškaitis R.	2005	Traces of Lithuanian mammals		Lututė