COURSE DESCRIPTION

Course code	Volume in ECTS credits	Institution	Faculty	Department
AGR8021	7	VMU	Agronomy	Biology and Plant Biotechnology

Course title in Lithuanian

Mikologija

Course title in English

Mycology

Study methods	Volume in ECTS credits
Lectures	1
Consultations	1
Seminars	1
Individual work	4

Short course annotation in Lithuanian (up to 500 characters)

Studijose analizuojama grybų ir panašių į grybus organizmų vieta gyvajame pasaulyje, jų biologija, paplitimas, poreikiai aplinkai. Studijuojama grybų sandara, mityba, dauginimasis, nomenklatūra, taksonomija ir sistematika, simbiontinių ir patogeninių grybų santykiai su augalu šeimininku. Susipažįstama su svarbiausiais augalų patogeniniais grybais, jų ekologiją, identifikavimo metodais, plitimo prevencijos ir kontrolės priemonėmis.

Short course annotation in English (up to 500 characters)

The studies analyse the place of fungi in the living world, their biology, prevalence, environmental needs. Fungi morphology, nutrition, reproduction, nomenclature, taxonomy and systematics, relationship between symbiotic and pathogenic fungi with the host are studying. The most important plant pathogenic fungi, their ecology, identification methods, disease incidence, severity and control are presented.

Relevance of the course

After mastering the course, students will know about the development of mycology science and the latest achievements, fungi in living organisms, biology, systematics and ecology of fungi, spread of pathogenic fungi and control measure; will be able to formulate research problem, goal and tasks in mycology science, to select research methods in fundamental and applied scientific mycology research, to critically evaluate the obtained research results in mycology; Based on the latest scientific knowledge, will be able to develop original methods of mycological research, studies, innovation, tools and tools for regulating fungal populations in the environment.

Course aims

Aim of the course: to acquire new knowledge about the location of fungi and similar fungi organisms in the living world, their biology, distribution, environmental needs. Essential to deepen knowledge about the structure, nutrition, reproduction, nomenclature, taxonomy and systematics of fungi, to get acquainted with the most important plant pathogenic fungi, to study the relationship between pathogenic fungi and plant host, ecology of pathogenic fungi, identification, preventive and control measures

Subject content, topics and study methods

Topic 1. History and development of mycology in the world and Lithuania.
Topic 2. Morphology of fungi.
Topic 3. Fungal reproductive organs, methods and processes of reproduction.
Topic 4. Fungi needs for environmental conditions, nutrition and metabolism.
Topic 5. Fungal genetics and variability.
Topic 6. Fungal nomenclature, systematics, taxonomy and classification.
Topic 7. Prevalence of fungi in nature, relationship with other organisms, pathogenesis of plants.
Topic 8. Pathogens of agriculture, garden, forest and ornamental plants, their ecology, symptoms.
Topic 9. Identification of fungi and methods of diagnosis of fungal diseases.
Topic 10. Principles and methods of prevention and control of fungal diseases.
Topic 11. Planning and carrying out mycological studies.
Subject study methods. Lecture material is visualized using multimedia equipment and smart auditorium board. Students are enrolled into discussions individually or by group of questions. In the absence of a minimum number of doctoral students, lectures are not counted and doctoral students, in consultation with the

lecturer, independently study topics and present knowledge during practical and control work. Doctoral students are discussing the most important topics, how much the doctoral student's work is closely related to plant pathology, possible methods of investigation of specific pathogens are discussed, where the latest research methodologies can be found and how to use them best in doctoral student work, advised with which scientists can be consulted in more detail. Doctoral students are consulted according to the agreed schedule and correspondence in electronic space.

Structure of cumulative score and value of its constituent parts

The achievements of doctoral students are evaluated using the ten-point cumulative assessment system and according to the envisaged criteria for assessment of the study outcomes of the subject: individual task, exercise, report - 40%. final evaluation; exam - 60 percent final evaluation. The examination score is determined by the ability of the doctoral student to analyze the questions submitted, to discuss with the examining teachers.

The evaluation of the knowledge and skills of the PhD students during the examination and the final assessment is carried out by a commission consisting of one or two subject teachers and the supervisor or consultant of the doctoral student.

Compulsory reference materials

No.	**Authors of publication, title, publishing house, year of publication.**
1.	Ainsworth & Bisby's dictionary of the fungi: 9th ed. / by P.M. Kirk [et al.]. - Wallingford. – 2001, 655 p.
2.	Hermann H. Prell, Peter R. Day. Plant-fungal pathogen interaction: a classical and molecular view, Berlin, London, 2001, 214 p.
3.	Carlile, M.J., Watkinson S., C. Gooday G., W. The fungi. Amsterdam. 2001. 588 p.
4.	Ramesh Maheshwari. Fungi experimental models in biology, Boca Raton, London, 2005, 204 p.

Supplementary reference materials

No.	**Authors of publication, title, publishing house, year of publication.**
1.	Butt T.M., Jackson C., Magan N. Fungi as biocontrol agents: progress, problems and potential. Cambrige, Mass.: CABI, -2001, 390 p.
2.	Dugan Frank M. The identification of fungi: an iliustrated introduction with keys, glossary and guide to literature. St. Paul, Minn., 2003, 176 p.
3.	Pitt J.I., Hocking D. Fungi and food spoilage. Gaithersburg, 1999, 539 p.
4.	Webster John. Introduction to fungi. Cambridge, 2011, 841 p.
5.	Watanabe, T. Pictorial atlas of soil and seed fungi: morphologies of cultured fungi and key to species. Boca Raton, 2002, 484 p.

Course programme designed by

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