

Study Programme: Phytomedicine		
Course Unit Title: Applied Phytopathology		
Course Unit Code: 19.FTM041		
Name of Lecturer(s): Prof. Vera Stojšin, PhD; Prof. Ferenc Bagi, PhD; Assoc. Prof. Mila Grahovac, Phd, Assoc. Prof. Dragana Budakov, PhD		
Type and Level of Studies: MASTER ACADEMIC STUDIES		
Course Status (compulsory/elective): compulsory		
Semester (winter/summer): winter		
Language of instruction: Serbian/English		
Mode of course unit delivery (face-to-face/distance learning): face-to-face		
Number of ECTS Allocated: 5		
Prerequisites: -		
Course Aims: Introduction to the latest knowledge on pathogens (fungi, bacteria, viruses, phytoplasmas, parasitic flowering plants) of fruits, vine, field and vegetable crops, forest trees, ornamental and medicinal plants, on contemporary diagnostic methods and available protection measures.		
Learning Outcomes: The acquired knowledge will ensure better understanding of parasitism, pathophysiological changes in plants, host-pathogen interaction, effects of different ecological factors on disease development, disease diagnostics, role of biotechnology in phytopathology. Basic knowledge needed for further scientific and experimental work, as well as for employment of different protection measures in plant production, will also be obtained.		
Syllabus: <i>Theory</i> Dispersal, economic significance and biology of pathogens (fungi, bacteria, viruses, phytoplasmas, parasitic flowering plants) of fruits, vine, field and vegetable crops, forest trees, ornamental and medicinal plants. Etiology and symptomatology of economically the most important causal agents of plant diseases. Monitoring and sampling procedures in phytopathology. Conventional, serological and molecular diagnostic techniques. Mycotoxigenic fungi. Chemical and biological characteristics of mycotoxins. Contemporary taxonomy of the most significant plant pathogens. Parasitism and disease development - arrival of the pathogen to the plant, penetration, colonisation of plant tissue (signal molecules, enzymes, toxins, polysaccharides, growth regulators). Host-pathogen interaction. Patho-physiological changes in plants. Applied biotechnology in phytopathology (gene transfer, use of GMO in biological control) with a particular emphasis on disease resistance (passive and active resistance – antiinfective, antitoxic and induced). Disease control measures: administrative (Phytosanitary Act, plant quarantine, EPPO/OEPP Standards – Protocol for the diagnosis of Quarantine Organisms), mechanical, physical, cultural, chemical and biological. <i>Practice</i> Microscopic techniques. Individual student activity aimed at detail introduction to pathogenic organisms of fruits, vine, field and vegetable crops, forest trees, ornamental and medicinal plants, mastering skills for laboratory assays (conventional and contemporary identification methods) and field work (monitoring, sampling) related to specific theoretical chapters.		
Required Reading: Balaž, F., Balaž, J., Tošić, M., Stojšin, V., Bagi, F. (2010): Phytopathology – diseases of field and vegetable crops (in Serbian). University of Novi Sad, Faculty of Agriculture Stojšin, V., Bagi, F., Balaž, F. (2008): Plant pathology textbook- mycoses and pseudomycoses of field and vegetable crops (in Serbian).). University of Novi Sad, Faculty of Agriculture Ivanović, M., Ivanović D. (2001): Plant mycoses and pseudomycoses (in Serbian). University of Belgrade, Faculty of Agriculture Arsenijević, M. (1997): Plant bacterioses (in Serbian). University of Novi Sad, Faculty of Agriculture Vico, I. (2018): Phytopathology (in Serbian). University of Belgrade, Faculty of Agriculture, Zemun. Bagi, F., Jasnić, S., Budakov, D. (2016): Plant virology (in Serbian). University of Novi Sad, Faculty of Agriculture Study materials are available in English on request.		
Weekly Contact Hours:	Lectures: 2x15=30	Practical work: 2x15=30

Teaching Methods:

Theoretical classes – oral presentation using visual methods on computer and other didactic means (demonstrations, illustrations and board), seminar papers. Practical classes - oral presentation using visual methods on computer, tutorial in individual student activities, interactive and group work.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation		written exam	80
Practical work		oral exam	
Preliminary exam(s)		
Seminar(s)	20		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.