Study Programme: Phytomedicine

Course Unit Title: Applied phytopathology

Course Unit Code: 3MFM1O03

Name of Lecturer(s): Dr Ferenc F. Bagi, Dr Mila S. Grahovac, Dr Dragana B. Budakov

Type and Level of Studies: Master

Course Status (compulsory/elective): mandatory

Semester (winter/summer): winter

Language of instruction: English

Mode of course unit delivery (face-to-face/distance learning): face-to-face/online

Number of ECTS Allocated: 6

Prerequisites: At least two subjects from the area of plant pathology.

Course Aims: Introduction to the latest knowledge about plant pathogens (fungi-like organisms, fungi, bacteria, viruses, phytoplasmas, parasitic plants) of fruit trees, vines, crops, vegetables, in forestry, of ornamental and medicinal plants, modern methods of diagnostics and available protection measures.

Learning Outcomes:
Acquired knowledge will provide a better understanding of parasitism, pathophysiological changes in plants, host-parasite interaction, the influence of various environmental factors on disease development, disease diagnostics, and the application of biotechnology in plant protection. It will also provide the basis for further scientific and experimental work, as well as for the implementation of various protection measures plant production.

Syllabus:
Theory- Distribution, economic significance and biology of pathogenic organisms (fungi-like organisms, fungi, bacteria, viruses, phytoplasmas, parasitic plants) of fruit crops, grapevine, field crops, vegetables, forest, ornamental, and medicinal plants. Etiology and symptomatology of the the economically most important plants diseases. Monitoring and sampling in phytopathology. Traditional, serological and molecular techniques of diagnosis. Mycotoxigenic fungi. Chemical and biological characteristics of mycotoxins. Modern taxonomy of economically most important plant pathogens. Parasitism and disease development – infection with plant pathogens, penetration and colonization of plant tissue (signalling molecules, enzymes, toxins, polysaccharides, growth regulators). Host-pathogen interaction. Pathophysiological changes in plants. Applied biotechnology in phytopathology (gene transfer, application of GMO in biological control) with special emphasis on resistance to diseases (passive and active resistance - anti-infection, anti-toxigenic and induced resistance). Plant disease control measures: administrative (Phytosanitary law, plant quarantine, EPPO / OEPP Standards - Protocol for the diagnosis of Quarantine Organisms), mechanics, physical, agrotechnical, chemical and biological.
Practical classes - Individual student work aimed at gaining detailed knowledge of pathogenic organisms of fruit crops, grapevine, field crops, vegetables, forest, ornamental, and medicinal plants, as well as laboratory methods (classical and modern identification techniques) and field methods (monitoring, sampling) related to selected theoretical topics.

Required Reading: George N. Agrios (2005): Plant pathology. 5th edition. Elsevir Academic Press.

Weekly Contact Hours:	**Lectures: 2**	**Practical work: 2**

Teaching Methods: Interactive teaching

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.