

Study Programme: Phytomedicine
Course Unit Title: Plant mycosis 2
Course Unit Code: 19.FTM027
Name of Lecturer(s): full prof. Mila Grahovac
Type and Level of Studies: Undergraduate academic study
Course Status (compulsory/elective): Compulsory
Semester (winter/summer): summer
Language of instruction: english
Mode of course unit delivery (face-to-face/distance learning): face-to-face
Number of ECTS Allocated: 5
Prerequisites: Passed General phytopathology
Course Aims: Obtaining knowledge on symptoms and economic significance of fungal diseases of fruits, grapevine and ornamental plants as well as on characteristics of pathogenic fungi, causal agents of the diseases – morphology, ecology and epidemiology.
Learning Outcomes: The obtained knowledge is the base for application and managing of different plant protection measures aiming at reduced losses, environmental pollution and costs. Also, the obtained knowledge is a good basis for future scientific and research activities.
<p>Syllabus:</p> <p><i>Theory</i></p> <p>Occurrence, distribution and noxiousness of phytopathogenic fungi on fruits, grapevine and ornamental plants; disease symptoms, morphological characteristics, biology, epidemiology and control. Pathogens of pome fruits (<i>Venturia inaequalis</i>, <i>V. pyrina</i>, <i>Podosphaera leucotricha</i>, <i>Gymnosporangium juniperi-virginianae</i>, <i>G. sabiniae</i>, <i>Mycosphaerella pyri</i>, <i>Diplocarpon maculatum</i>, <i>Botryosphaeria obtusa</i>, <i>Nectria</i> spp., <i>Phytophthora</i> spp.) and complex diseases of pome fruits (Sooty blotch and Flyspeck). Pathogens on stored fruits (<i>Penicillium</i> spp., <i>Mucor piriformis</i>, <i>Glomerella cingulata</i>, <i>Alternaria</i> spp., <i>Botrytis cinerea</i>, <i>Rhizopus stolonifer</i>, <i>Monilinia</i> spp.). Pathogens of stone fruits (<i>Sphaerotheca pannosa</i> var. <i>persicae</i>, <i>Monilinia</i> spp., <i>Stigmina carpophila</i>, <i>Phoma prunicola</i>, <i>Taphrina</i> spp., <i>Valsa cincta</i>, <i>Puccinia pruni-spinosae</i>, <i>Polystigma rubrum</i>, <i>Blumeriella jaapi</i>, <i>Gnomonia erithrostoma</i>). Pathogens of small fruits (<i>Didymella appianata</i>, <i>Mycosphaerella fragariae</i>, <i>Phragmidium rubi-ideae</i>, <i>Kuehneola uredinis</i>, <i>Cronartium rubicola</i>, <i>Leptosphaeria coniothyrium</i>). Pathogens of nuts (<i>Gnomonia leptostyla</i>, <i>Phyllactinia guttata</i>). Grapevine pathogens (<i>Phomopsis viticola</i>, <i>Plasmopara viticola</i>, <i>Uncinula necator</i>, <i>Botryotinia fuckeliana</i>, <i>Eutypa lata</i>). Polyphagous pathogens (<i>Verticillium</i> spp., <i>Roselinia necatrix</i>, <i>Armillaria mellea</i>). Pathogens of ornamental plants: causal agents of damping off disease (<i>Pythium</i> spp., <i>Sclerotinia sclerotiorum</i>, <i>Alternaria</i> sp., <i>Fusarium</i> spp), causers of diseases during vegetation (<i>Diplocarpon rosae</i>, <i>Sphaerotheca pannosa</i> var. <i>rosae</i>, <i>Phragmidium mucronatum</i>, <i>Peronospora sparsa</i>, <i>Botrytis cinerea</i>, <i>Fusarium oxysporum</i> f. sp. <i>dianthi</i>, <i>Fusarium oxysporum</i> f. sp. <i>gladioli</i>, <i>Alternaria dianthi</i>, <i>Puccinia pelargonii-zonalis</i>, <i>Uromyces dianthi</i>, <i>Puccinia horiana</i>, <i>Colletotrichum</i> spp., <i>Endothia parasitica</i>, <i>Apiognomonium veneta</i>, <i>Cryptodiaporthe populea</i>, <i>Venturia populina</i>, <i>Micosphaera alphitoides</i>).</p> <p><i>Practice</i></p> <p>Disease symptoms caused by phytopathogenic fungi on fruits, grapevine and ornamental plants, morphological characteristics and pathogen disease cycle. Individual microscoping of vegetative and generative structures: <i>Venturia</i> spp., <i>Podosphaera</i> spp., <i>Sphaerotheca</i> spp., <i>Gymnosporangium</i> spp., <i>Mycosphaerella</i> spp., <i>Diplocarpon maculatum</i>, <i>Monilinia</i> spp., <i>Stigmina carpophila</i>, <i>Taphrina</i> spp., <i>Blumeriella jaapi</i>, <i>Valsa cincta</i>, <i>Puccinia pruni-spinosae</i>, <i>Polystigma rubrum</i>, <i>Gnomonia</i> spp., <i>Phyllactinia guttata</i>, <i>Penicillium</i> spp., <i>Nectria</i> spp., <i>Didymella appianata</i>, <i>Phragmidium rubi-ideae</i>, <i>Kuehneola uredinis</i>; <i>Plasmopara viticola</i>, <i>Uncinula necator</i>, <i>Botryotinia fuckeliana</i>, <i>Phomopsis viticola</i>, <i>Pythium</i> spp.,</p>

Sclerotinia sclerotiorum, *Fusarium* spp., *Alternaria dianthi*, *Diplocarpon rosae*, *Sphaerotheca pannosa* var. *rosae*, *Botrytis cinerea*, *Phragmidium mucronatum*, *Puccinia pelargonii-zonalis*, *Uromyces dianthi*, *Puccinia horiana*, *Apiognomonina veneta*, *Micosphaera alphitoides*.

Required Reading:

Agrios, G.N. (2005): Plant pathology. Elsevier, academic press, USA;
 Ivanović, M., Ivanović M. (2017): Bolesti voćaka i vinove loze. Univerzitet u Beogradu, Poljoprivredni fakultet.
 Delibašić G., Babović M. (2006): Opšta fitopatologija-Praktikum. Univerzitet u Beogradu, Poljoprivredni fakultet.
 Ivanović, M., Ivanović, D. (2001): Mikoze i pseudomikoze biljaka. Univerzitet u Beogradu
 Smith, I.M., Dunez, J., Lelliott, R.A., Phillips, D.H., Archer, S.A. (1988): European handbook of plant diseases. Blackwell Scientific Publications, London

Weekly Contact Hours: 6

Lectures: 4

Practical work: 2

Teaching Methods:

Visual - didactic methods with the use of modern teaching aids and laboratory equipment. Practical classes - individual work of students and demonstrative - illustrative methods.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	Final exam	points
Active class participation	10	written exam	20
Practical work		oral exam	50
Preliminary exam(s)	20	
Seminar(s)			

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