Study Program: Forestry and Natural Resources Management	
Subject Title: Pests of Woody Plants	
Professor: Prof. Milka M. Glavendekic, D. Sc.	
Status of the subject: Electoral	
ECTS: 5	
Condition: no	

Objective: This course aims to introduce students to arthopods pests of woody plants of concern in forest industry and on green infrastructure. During the course they develop ther skills to identify insect pests and mites and become familiar with their symptoms. They also learn to distinquish between pests and beneficial insects troficaly related to them. Students gain knowledge about pathways of introduction of pests and how to manage pathways of introduction of alien species.

Course outcome: Students are fully able to identify certain emerging pests of woody plants of current concern in forest industry and at green infrastructure. They understand life cycle of pests and beneficial insects related to them. Students gain knowledge about early warning and integrated management of pests of woody plants.

Content of the course:

Theory teaching:

Students will be presented with general characteristics of arthropods affecting health of woody plants. The classification of insects will highlight the most important representatives of native pests species and non-native insect pests. Their life cycle and trophical relations with beneficial insects will be explained in detail. In the special part will be presented the most important emerging pests in chainged climate conditions. Their ecology and methods of integrated control will be highlighted.

Practical classes:

Practical work is focused on developmental stages of insects, their morphology and growing in the laboratory. Speciments od insects and/or symproms of damage will be studied in detail for currently the most important pests in forests and on green infrastructure. Corridors and pathways of introduction will be presented and the main strategies and tools used for monitoring and integrated pest control. Students independently work on projects and write report to gain skills of writing expertise.

Literature:

Glavendekić M., 2011: Arthropod Diversity in the Forests of the Area of Obedska bara. Monograph, J.P. „Vojvodinašume", Petrovaradin.

Tenow O., A. C. Nilssen, H. Bylund1, R. Pettersson, A. Battisti,U. Bohn, F. Caroulle, C. Ciornei, G. Csoka, H. Delb, W. DePrins, M. Glavendekic, Y. I. Gninenko, B. Hrasovec, D. Matosevic, V. Meshkova, L. Moraal, C. Netoiu, J. Pajares, V. Rubtsov,R. Tomescu and I. Utkina, 2013: Geometrid outbreak waves travel across Europe. Journal of Animal Ecology, vol. 82 br. 1, str. 84-95

Glavendekić M., B. Ivanov, M. Džinović, B. Arsović, D. Mandić, Educational Technology in Developing Public Awareness of Tree Pests and Pathogens, Sumarski List, Croatian Forestry Society, 139, 9-10, pp. 455 - 463

Roques A., ed., 2015: Processionary Moths and Climate Change: An Update, Quae

Rat M, Simonović; P, M. Glavendekić, Momir Paunović, Stojanović V, Maja Karaman, Radišić D, Anačkov G., Overview of the invasive alien species in Serbia, ESENIAS Report 2016 - State of the Art of Invasive Alien Species in South-Eastern Europe, ESENIAS Report 2016 - State of the Art of Invasive Alien Species in South-Eastern Europe, pp. 95 - 118, 978-86-7031-331-6, 2016.

Marzano M., Dandy N., I. Papazova-Anakieva, Avtzis D, Connolly T., Eschen R., Glavendekić M., Hurley B., Lindelow A., D. Matosevic, R. Tomov, A. Vettraino, Assessing awareness of tree pests and pathogens amongst tree professionals: A pan-European perspective, FOREST POLICY AND ECONOMICS, ELSEVIER SCIENCE BV, 70, pp. 164 – 171

Rogues A., Cleary M., Matsiakh I., Eschen R. eds., 2017: Field Guide for the Identification of Damage on Woody Sentinel Plants, CABI

Number of classes of active teaching:	Theoretical teaching: 30	Praktična nastava: 30 other forms of teaching

Methods of teaching: use of modern presentation equipment: beamer, stereo microscope with camera for teaching and practical work. Individual work of students, project presentation and interactive teaching in the class.

Knowledge rating (maximum points 100)

Pre-exam obligations:	Points	Final exam:	Points
Activity during lectures	10	Written exam	25
Practical teaching	10	Oral exam	30
colloquium	15		
Seminar	10		