Course Unit Descriptor

Study Programme: PRECISION AGRICULTURE
Course Unit Title: *DISEASE AND PEST CONTROL BY PRECISION AGRICULTURE*
Course Unit Code: 19.PRP021
Name of Lecturer(s): Prof. Ferenc Bagi, PhD, Assoc. Prof. Aleksandra Konjević, PhD
Type and Level of Studies: MASTER ACADEMIC STUDIES
Course Status (compulsory/elective): elective
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: None

Course Aims:

The goal is to introduce students to the most important diseases and pests that can be controled by Information Technology systems in Precision Agriculture.

Learning Outcomes:

The acquired knowledge and skills will capacitate students to use Information Technology systems for the control of diseases and pests of cultivated plants.

Syllabus:

Theory

Introduction to fundamentals of precision agriculture, methods for early monitoring of pests and diseases of cultivated plants in large areas, epidemic management, evaluation of the applied phytosanitary measures efficacy. Remote detection of harmful insects, setting traps (monitoring) with remote control, host mapping, potential entry spots mapping, harmful species epidemic management: insect monitoring, eradication of infected/infested plants, spatial mapping, modeling and statistical analysis; evaluation of the applied phytosanitary measures efficacy. Benefits of social media, mobile applications and similar means of data collection about invasive species spreading.

Practice

Demonstrative exercises. Laboratory and field experiments.

Required Reading: Erich-Christian Oerke, Roland Gerhards, Gunter Menz, Richard A. Sikora (2010): Precision Crop Protection - the Challenge and Use of Heterogeneity. Springer Edition
J. Pohl, D. Rautmann, H. Nordmeyer, D. von Hörsten. (2017): Site-specific Application of Plant Protection Products in Precision Farming by Direct Injection. Cambridge University Press

Weekly Contact Hours:	**Lectures: 60**		**Practical work: 30**

Teaching Methods:

Lectures using video presentations and simulations, demonstrational exercises in laboratory and field conditions, computational exercises, laboratory and seminar works, measurements in laboratory and field conditions and consultations.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Active class participation		written exam	60
Practical work		oral exam	
Preliminary exam(s)		…….	
Seminar(s)	40		

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