

Study Programme: Phytomedicine , modul Plant protection			
Course Unit Title: Analytical Methods for the Pesticide Analysis			
Course Unit Code: 19.FT1017			
Name of Lecturer(s): Sanja D. Lazic, Dragana B. Šunjka			
Type and Level of Studies: Bachelor studies			
Course Status (compulsory/elective): Elective			
Semester (winter/summer): Winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): Face to face			
Number of ECTS Allocated: 6			
Prerequisites: None			
Course Aims: Introduction to the methods for the analysis of pesticides by gas and liquid chromatography, volumetric and spectrophotometric methods, as well as methods for the determination of pesticides residues in agricultural products, soil and water.			
Learning Outcomes: Acquired-applicable knowledge of the techniques for the analysis of pesticides and their residues			
Syllabus: <i>Theory</i> Partition and adsorption chromatography, Ion exchange chromatography, gel filtration chromatography, affinity chromatography, thin-layer chromatography and paper chromatography. Gas chromatography with FID, ECD, NPD, MS, MS/MS detectors, liquid chromatography with DAD, FLD, MS/MS detectors. Sampling and preparation of samples for the analysis of a.s. in PPPs. Water, soil and food sampling, extractions and purifications for the determination of pesticide residues. Post registration control of PPPs, Dissipation dynamics and calculation of half-life and pre harvest interval. <i>Practice</i> Introduction to CIPAC and AOAC methods; method validation for the determination of a.s. in PPPs; Introduction to EU guidelines for the method validation in pesticide residues determination in food, water and soil. Dissipation dynamics and calculation of half-life and pre harvest interval.			
Required Reading: Šovljanski, R. Lazić S, Osnovi fitofarmacije, Univerzitet u Novom Sadu, Poljoprivredni fakultet, Novi Sad, 2007. Bogdanović, D. i sar. Uzorkovanje zemljišta i biljaka za agrohemijske i pedološke analize, Poljoprivredni fakultet Novi Sad, 2014. Marjanović N., Krstić B., Instrumentalne metode u biološkim istraživanjima, Tehnološki fakultet i PMF, Novi Sad, 1998..			
Weekly Contact Hours: 3	Lectures: 15	Practical work: 30	
Teaching Methods: Lectures and students group work			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	5	written exam	70
Practical work		oral exam	
Preliminary exam(s)	15	

Seminar(s)	10		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			