

Study Programme: Soil, plant and genetics, module: Molecules and plant			
Course Unit Title: General Bioanalytical Chemistry			
Course Unit Code: 19.ZB8002			
Name of Lecturer(s): Assoc. Prof. Dejan Prvulović PhD			
Type and Level of Studies: MAS			
Course Status (compulsory/elective): Compulsory			
Semester (winter/summer): Summer			
Language of instruction: ENG			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 5			
Prerequisites: None			
Course Aims: The course aims to provide knowledge of bioanalytical methods, including biomolecules. It will also give a deeper understanding of strategies for the development of analytical methods and sampling methodology and handling of biological matrices.			
Learning Outcomes: After completing this course: students will get familiar with advanced techniques for sample preparation, chromatography, spectrophotometric analysis and electrophoresis techniques. Student will also familiarize themselves with scientific literature in the field.			
Syllabus: <i>Theory</i> Methods of extraction and preparation of biological samples. Instrumental methods and techniques in bioanalytical chemistry (spectrophotometry, chromatography, electrophoresis, potentiometry etc.). Analysis of primary biomolecules. Analysis of secondary biomolecules of plants. Enzymes of primary and secondary metabolism and specific biomarkers. <i>Practice</i> Extraction and preparation of plant samples. Content of proteins and carbohydrates with different methods. Enzymes of nitrogen metabolism in plants. pH, acidity and vitamin C in plant samples. Sample preparation for chromatography.			
Required Reading:			
Weekly Contact Hours: 5	Lectures: 3	Practical work: 2	
Teaching Methods: Lectures, Practical classes, Consultations, Research work.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	5-10	written exam	
Practical work	5-10	oral exam	26-50
Preliminary exam(s)		
Seminar(s)	16-30		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			