

Course Unit Descriptor

Study Programme: Agronomy			
Course Unit Title: Plant Nutrition			
Course Unit Code: 3DAI1034			
Name of Lecturer(s): Full professor Maksimović V Ivana, (practice) Assistant professor Marina I. Putnik-Delić			
Type and Level of Studies: Doctoral Academic 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: 10			
Prerequisites: Passed exam in Plant physiology at the undergraduate level			
Course Aims: The acquisition of advanced knowledge in plant nutrition.			
Learning Outcomes: Capability to follow and use the latest literature in the field of plant nutrition and the application of modern achievements in the field in scientific research.			
Syllabus: <i>Theory</i> Lectures: Introduction, Definition and classification of nutrients, mechanisms of ion uptake by individual cells and root systems, the transport to and through xylem and phloem and regulation, uptake and leakage of mineral elements through the leaves and other aboveground plant parts. Yield and relationships between source and sink , mineral nutrition and yield, the role of macroelements, the relationship between mineral nutrition and plant diseases and pests, diagnostics of nutritional disorders, the influence of internal and external factors on the growth and development of roots, rhizosphere effect on mineral nutrition, plant adaptation to adverse soil conditions. <i>Practice</i> Growing plants in a semi-controlled conditions, induction of nutritional disorders and other stresses and analyses of their effects on plant nutritional status. Case-studies.			
Required Reading: Taiz L, Zeiger E, Møller IM, Murphy A (2014) Plant Physiology and Development, Sixth Edition, Sinauer Associates. Marschner H (1995) Mineral nutrition of higher plants, Academic Press, USA			
Weekly Contact Hours: 8	Lectures: 30	Practical work: 90	
Teaching Methods: Classes are conducted with the use of modern technology (computer, video beam). The theoretical part of teaching is done in university classrooms. All lectures are computer processed and presented.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation		written exam	
Practical work	40	oral exam	60

Preliminary exam(s)		
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.			