

<b>Study Programme: CROP SCIENCE and ORGANIC AGRICULTURE</b>			
<b>Course Unit Title: SOIL FERTILITY and FERTILIZATION</b>			
<b>Course Unit Code: 19.ORG005</b>			
<b>Name of Lecturer(s):</b> Full professor Maja Manojlović			
<b>Type and Level of Studies:</b> UNDERGRADUATE ACADEMIC STUDIES			
<b>Course Status (compulsory/elective):</b> Compulsory			
<b>Semester (winter/summer):</b> Winter			
<b>Language of instruction:</b> English			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face			
<b>Number of ECTS Allocated:</b> 6			
<b>Prerequisites:</b> None			
<b>Course Aims:</b> To acquaint students with basic knowledge about soil fertility and fertilizer application			
<b>Learning Outcomes:</b> The student is trained for further training through master's and doctoral studies, as well as to apply the acquired knowledge about soil fertility and the application of fertilizers in agricultural practice.			
<b>Syllabus:</b> <i>Theory: Lectures:</i> Course assignment. Soil properties and processes related to plant nutrition and fertilizer application. Nitrogen in the soil. Phosphorus in the soil. Potassium in the soil. Secondary macroelements. Useful elements. Trace elements in the soil. Heavy metals in the soil. The need for soil fertilization. Fertilizer classification. Organic fertilizers. Mineral fertilizers. Nitrogen fertilizers. Phosphorus fertilizers. Potassium fertilizers. Complex fertilizers. Organo-mineral fertilizers. Liquid fertilizers. Fertilizers with pesticides and microelements. Principles of fertilizer application. System of soil fertility control and fertilizer application. <i>Practice:</i> Determining the need for fertilization. System of soil fertility control and fertilizer application. Soil sampling. Determination of total nitrogen in soil. Determination of mineral nitrogen in soil. N-min method. Phosphorus in the soil. Potassium in the soil. Field trials. Basic physical and chemical properties of fertilizers. Regulation of fertilizers and soil conditioners. Principles for determining the dose of fertilizer application. Field exercises: Visit to the experimental fields of the Institute of Field and Vegetable Crops. Visit to the mineral fertilizer factory.			
<b>Required Reading:</b> 1. J Havlin, S L. Tisdale. Soil Fertility and Fertilizers: An Introduction to Nutrient Management. Pearson Prentice Hall, 2005 2. A.S. Jadeja, D.V. Hirpara, L.C. Vekaria, H.L. Sakarvadia Soil Fertility and Nutrient Management.A Way to Sustainable Agriculture. CRC Press 2021			
<b>Weekly Contact Hours:</b>	<b>Lectures: 4</b>	<b>Practical work: 2</b>	
<b>Teaching Methods:</b> Lectures and Practical classes, Consultations if needed			
<b>Knowledge Assessment (maximum of 100 points):</b>			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points

Active class participation	5	written exam	60
Practical work		oral exam	20
Preliminary exam(s)	15	.....	
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.			