

Study program: Ecological agriculture			
Type and level of study: Master academic studies			
Course Title: Soil fertility and soil biological activity			
Teachers: Dr. Jovanović B. Ljubinko, Full professor and dr. Olivera P. Nikolić, Associate Professor			
Status: Elective 1, semester I			
ECTS: 6			
Prerequisite: None			
The goal of course To familiarize students with the characteristics of soil fertility and the role that microorganisms play in agricultural land. Interaction of microorganisms, understanding soil and plants and their complex interactions.			
The outcome of the course Knowledge of the the basic processes in the interactions of plants, soil and micro-organisms in order to obtain optimal conditions for growing plants. Directing the production process in order to obtain healthy food.			
Syllabus <i>Theoretical study</i> - Basic concepts of soil. Land as the main substrate for wildlife. Beneficial and harmful interactions of plants and microorganisms (MO) in the soil. The main groups of MO in the soil. Liquid phase, air and organic matter in soil and MO. Soil humification and dehumification: the role of MO. The role of MO in root mineral absorption. The role of plant root products and MO. The parameters of soil fertility and microorganisms as indicators of soil fertility. Microorganisms, pesticides and fertilizers. The use of microorganisms in production of safe food. Microbial fertilizers. Biodegradation of agricultural organic residues and the production of compost. Legislation in food safety related to the MO, pesticides and fertilizers. <i>Practical classes</i> - The exercises follow the theoretical classes, workshops, testing of bioproducts, presentations, and seminars.			
Literature Huber, S., Prokop, G., Arrouays, D., Banko, G., Bispo, A (2009): Environmental Assessment of Soil for Monitoring Italy, Patrick C. Kangas (2004): ECOLOGICAL ENGINEERING. Principles and Practice. LEWIS PUBLISHERS A CRC Press Company Boca Raton London New York Washington, D.C. Andrew H. Cobb (2010): Herbicides and Plant Physiology. Second Edition. A John Wiley & Sons, Ltd., Publication. Group of authors (2007): Soil Microbiology, Ecology, and Biochemistry. Editor, Eldor A. Paul Michael Gillings and Andrew Holmes. (2006): Plant Microbiology, University, Sydney, NSW 2109, Australia Group of authors (2003): Environmental Soil Chemistry. Second Edition, Donald L. Sparks Academic Press.			
Number of lectures:4			Other Classes
Lectures: 2	Practices: 2	Other forms of teaching:	
Teaching methods: Practical teaching in the field, oral explanation and practical introduction to the agroecological work operations and work on performing research and development research.			
Score (maximum 100 points)			
Pre-exam commitments	Points	Final exam	Points
Activity during lectures	10	Written exam	30
Practical classes	10	Oral examination	20
Colloquia	20		
Seminars	10		
<i>Total</i>	50		50