

Study Programme: ORGANIC AGRICULTURE			
Course Unit Title: MICROBIOLOGY			
Course Unit Code: 19.FTM002			
Name of Lecturer(s): Prof. Simonida Djurić, PhD			
Type and Level of Studies: UAS			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): winter			
Language of instruction: ENG			
Mode of course unit delivery (face-to-face/distance learning): face-to face			
Number of ECTS Allocated: 6			
Prerequisites: None			
Course Aims: To acquaint students with basic characteristics and strains of microorganisms and their role in the cycling of matter, the creation and maintenance of soil fertility, role in crop production and the possibilities of their application.			
Learning Outcomes: Acquired knowledge in microbiology are the basis for understanding and monitoring teaching of agrochemicals, plant physiology, plant protection, general husbandry, farming, and forage crops			
Syllabus: <i>Theory:</i> General part: Morphology of microorganisms. Ecology of microorganisms, systematic groups – viruses, bacteria, algae, protozoa, fungi, lichen. Microbial metabolism – absorption of nutrients, growth and reproduction, variability of microorganisms. Special part: Soil natural habitat for microorganisms. Diversity of microorganisms in soil. Relationships between microorganisms and between microorganisms, fauna and plants. Formation and composition of organic matter in soil. Microbial transformation of C, N, P, S, K, Fe and Mn. Microorganisms involved in synthesis and mineralization of humus. Effect of agrotechnical measures on microorganisms. Application of microorganisms in plant production. Biofertilizers, biopesticides, biostimants, bioremediation of soil. <i>Practice:</i> Microscopic techniques. Morphology and determination of protozoa, algae, fungi and bacteria. Methods for isolations and getting pure culture of microorganisms. Estimation of abundance and determination of microorganisms in soil. Microorganisms involved in cycles of N, C, F and S. Effect of pesticides on microorganisms. Characterization of microorganisms used in biopreparates production			
Required Reading: Prescott, L. M (2002): Microbiology, 5th edition, McGraw Hill, NY; Free Microbiology Books, http://www.wsmicrobiology.com/alcamos-fundamentals-of-microbiology/			
Weekly Contact Hours: 5	Lectures: 3	Practical work: 2	
Teaching Methods: Lectures and Practical classes, Consultations if needed.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class participation	-	written exam	30
Practical work	2-10	oral exam	40
Preliminary exam(s)	20	
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.			