

<b>Study Programme:</b> ANIMAL SCIENCE			
<b>Course Unit Title:</b> MICROBIOLOGY IN ANIMAL HUSBANDRY			
<b>Course Unit Code:</b>			
<b>Name of Lecturer(s):</b> Ass. Prof. Dragana Stamenov, PhD			
<b>Type and Level of Studies:</b> UAS			
<b>Course Status (compulsory/elective):</b> compulsory			
<b>Semester (winter/summer):</b> summer			
<b>Language of instruction:</b> ENG			
<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 characteristics and strains of microorganisms and their role in digestive organs in domestic animals, fodder production and the production and processing of products of animal origin.			
<b>Learning Outcomes:</b> Acquired knowledge in microbiology are the basis for understanding and monitoring teaching from the feeding of livestock, dairy, hygiene and disease prevention, knowledge of livestock products and others.			
<b>Syllabus:</b> <i>Theory:</i> Morphology of microorganisms. Ecology of microorganisms. Microbial metabolism – aerobic and anaerobic fermentations, growth and reproduction, variability of microorganisms. Microorganisms in digestive organs of domestic animals (bacteria, protozoa, fungi) and their role in digestion. Microorganisms in silage production. Application of microorganisms in nutrition of domestic animals – producers of enzymes and vitamins. Microorganisms that spoil animal feeds. Microorganisms in groceries of animal origin – milk and milk products, meat and meat products. <i>Practice:</i> Microscopic techniques. Morphology and determination of protozoa, algae, fungi and bacteria. Assignment of presets and determination of microorganisms in nutrients of plant and animal origin – pathogens - – <i>E. coli</i> , <i>Salmonella sp.</i> , <i>Clostridium sp.</i> ; saprophytes – bacteria, fungi, yeasts. Determination of lactic bacteria. Microbial control of products of animal origin.			
<b>Required Reading:</b> Prescott, L. M (2002): Microbiology, 5th edition, McGraw Hill, NY; Paulsen, P., Bauer, A., Vodnasnky, M., Winkelmayer, R., Smulders, F.J.M (2011) Game Meat Hygiene in Focus, Springer; Sampo Lahtinen, Arthur C. Ouwehand, Seppo Salminen, Atte von Wrigh (2011) Lactic Acid Bacteria, CRC Press			
<b>Weekly Contact Hours:</b> 5	<b>Lectures:</b> 3	<b>Practical work:</b> 2	
<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	-	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.			