

Study Programme: Animal science			
Course Unit Title: Animal biochemistry			
Course Unit Code: 19.ANM008			
Name of Lecturer(s): Asoc. Prof. Dejan Prvulović, PhD			
Type and Level of Studies: UAS			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): summer			
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: Providing the basis for the formation of a certain view of the world, getting to know the most important principles, theories and laws of biochemistry, providing theoretical basis for acquiring other skills, mastering specific skills related to the application of theoretical knowledge, the development of creative skills and practical skills necessary for the exercise of the profession. To gain knowledge on molecular aspects of biochemical processes and interactions in animal. Study on biomolecules in animal tissues and their metabolism.			
Learning Outcomes: After completing the course of animal biochemistry, students will train the application of theoretical and practical knowledge of biochemistry. In terms of practical knowledge and skills students will be understand metabolic processes, handling basic laboratory equipment, perform basic instrumental measurements. In addition to this, students should be able to continue their studies or to apply their knowledge and understanding of the profession and to convey it to others.			
Syllabus: <i>Theory</i> Chemical composition of animal organs and tissues. Primary biomolecules – properties, structures and function (amino acids, peptides and proteins, enzymes, coenzymes, vitamins, hormones, carbohydrates, lipids and nucleic acids). Metabolism of primary biomolecules and bioenergetics (metabolism of amino acids and proteins, metabolism of carbohydrates, lipids and nucleic acids). Biological membranes and transport of metabolites. Respiratory electrontransport chain and oxidative phosphorylation. Metabolism of water and electrolytes. <i>Practice</i> Proteins (qualitative reactions, denaturation and coagulation of proteins, determination of isoelectrical point of amino acids and proteins); Enzymes (effect of temperature, pH, substrate and enzyme concentration on enzyme activity, kinetics of enzyme reactions, antioxidant enzymes activity); Carbohydrates (qualitative reactions); Lipids (isolation of lipids from yolk and separation of compounds using thin-layer chromatography-TLC, determination of saponification and iodine number, qualitative reactions of lecithin, isolation of cholesterol from brain tissue and qualitative reactions); Hormones (quantitative determination); Vitamins and provitamins (determination of vitamin D and carotenoides in biological samples); Metabolism (glycolysis and alcoholic fermentation).			
Required Reading: 1. Hegyi G. et al. (2013). Introduction to practical biochemistry. Eötvös Loránd University 2. Voet D, Voet J.G. (1995). Biochemistry, John Willey & Sons, Inc., Somerset, NJ			
Weekly Contact Hours:	Lectures: 3	Practical work: 3	
Teaching Methods: Lectures face-to-face and laboratory work. Consultations if needed.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Active class	1-10	written exam	

participation			
Practical work		oral exam	32-60
Preliminary exam(s)	16-30	
Seminar(s)			
<p>The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.</p>			