

Course Unit Descriptor

Study Programme: BSc Ecology			
Course Unit Title: Basic Animal Physiology			
Course Unit Code: OE018			
Name of Lecturer(s): Prof. Sonja Kaišarević, PhD			
Type and Level of Studies: Bachelor's studies			
Course Status (compulsory/elective): Compulsory			
Semester (winter/summer): Winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 7			
Prerequisites: -			
Course Aims: Aim of this course is to enable students to understand fundamental principles of functioning of excitable tissues in animals, mechanisms of maintenance of homeostasis and functional organization of organ systems of animals at different levels of functional organization.			
Learning Outcomes: At the end of this course, students will be able to understand and describe basic physiological principles in functioning of animals as integrated systems on each level of functional organization, and their role in maintenance of homeostasis.			
Syllabus: <i>Theory:</i> Physiology of membrane transport. Neuron. Membrane resting potential and action potential. Basic mechanisms in synaptic transmission. Physiology of excitable tissues: skeletal, cardiac and smooth muscle. Basic principles in perception and receptors. Reflex arc and reflexes. Central and peripheral nervous system. Comparative overview and function of circulatory fluids and their cellular elements, circulatory, respiratory, gastrointestinal and excretory system. Basic principles in physiology of endocrine system. <i>Practice:</i> Membrane transports. Action potential. Nerve-muscle frog preparation. Neuromuscular junction. Skeletal muscle – isotonic and isometric contraction, muscle response to variations in stimulus intensity, summation of contractions, muscle fatigue. Frog heart preparation <i>in situ</i> . Mechanism of spontaneous activity of nodal tissue. Cardiac muscle – refractory period and extrasystole. Determination of number of blood cells in peripheral blood of animals. Blood differential test. Mechanical and chemical digestion. Function of excretory system. Physiology of endocrine system.			
Required Reading: Ganong WF (2005): <i>Review of Medical Physiology</i> . Lange/WCB McGraw-Hill Companies. Germann WJ & Stanfield CL (2005): <i>Principles of Human Physiology</i> . Pearson Education & Benjamin Cummings. Kovacevic R, Kostic T, Andric S, Zoric S. (2005): <i>General Animal Physiology (script)</i> . WUS Austria. Andric S, Kostic T, Andric N, Zoric S. (2005): <i>Comparative Animal Physiology (script)</i> . WUS Austria. Djordjevic J. (2013) <i>Animal Physiology</i> . University of Belgrade, Faculty of Biology. Kibble J.D., Halsey C.R. (2013) <i>Medical Physiology</i> . Data Status. Belgrade. Kovacevic R., Kostic T., Andric S. (1997) <i>Practicum in General Animal Physiology</i> . Faculty of Sciences, University of Novi Sad. Presentations, working material and experimental protocols prepared by the teacher.			
Weekly Contact Hours:	Lectures: 4	Practical work: 3	
Teaching Methods: Theoretical part – Lectures; Practical part – Combination of laboratory work and computer simulations			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligation	points	Final exam	points
Practical work	up to 30	oral exam	up to 50
Preliminary exam(s)	up to 20		