Course Unit Descriptor

Study Programme: BSc in Biology/ MSc in Teaching Biology

Course Unit Title: Animal Physiology 2

Course Unit Code: OB023

Name of Lecturer(s): Ass. Prof. Tatjana Celic, 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: 8

Prerequisites: -

Course Aims:
Objective of this course is to study the physiological principles of the function of animal organ systems.

Learning Outcomes:
At the end of this course students will acquire basic theoretical and practical knowledge about the physiology of organic systems in different animals.

Syllabus:
Theory
Comparative review of the function of body fluids and formed elements. Hemostasis and coagulation. Comparative review of respiratory pigments. Hemocytes function in hemostasis and immunity. Functions of the immune system. Comparative review and function of circulatory, respiratory, gastrointestinal and excretory system. Comparative aspects of osmoregulation and excretion. Comparative aspect of the endocrine function of the pineal gland, hypothalamus, pituitary gland, thyroid gland, parathyroid glands, pancreas, adrenal gland, gonads. Thermoregulation.

Practice
Qualitative analysis of hemolymph and serum/plasma. Determination of number of cellular elements in peripheral blood of different animals. Hemocyte observtion. Comparative analysis of the speed of blood coagulation parameters of different animals. Standardization of ABO blood group system. Computer simulations depicting the mechanisms of regulation of blood flow, and function and regulation of respiration. Comparative aspects of digestion of food. Qualitative and quantitative analysis of the concentration of urea in serum. Estrous cycle, preparing preparations for the determination of the phase cycle of female rats.

Required Reading:

Ganong WF (2005): Review of Medical Physiology. Lange/WCB McGraw-Hill Companies.
Hill RW, Wyse GA & Anderson M (2004): Animal Physiology. Sinauer Associates
Randall D, Burggren W & French K (2004): Eckert Animal Physiology – mechanisms and adaptations. Freeman
Germann WJ & Stanfield CL (2005): Principles of Human Physiology. Pearson Education & Benjamin Cummings.
Schmidt-Nielsen K (1997): Animal Physiology – adaptation and environment. Cambridge Univerisity Press.
Andric S, Kostic T, Andric N, Zoric S. (2005): Comparative Animal Physiology (script). WUS Austria.
Davidovic V (2003): Comparative Animal Physiology. Institute for textbooks and teaching aids. Belgrade.

Weekly Contact Hours:	**Lectures:** 3	**Practical work:** 0+4+0

Teaching Methods:
Theoretical part - Lectures
Practical part – Combination of laboratory work and computer simulations

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Practical work	up to 30	Written exam	up to 20
		Oral exam	up to 50