Study programme: **BSc in Biology**

Level: Bachelor degree

Course title: ANIMAL PHYSIOLOGY

Lecturers: Prof. Dr Silvana Andric, Prof. Dr Tatjana Kostic

Status: **Obligatory**

ECTS: **6**

Requirements: -

Learning objectives

Objective of this course is to present to the students fundamental principles in physiology, mechanisms of maintenance of homeostasis and functional organisation of organic systems in mammal organism as an ilustration.

Learning outcomes

At the end of this course students will be able to understand and describe fundamental principles in survival of organism in changeable environmental conditions, and how coordinated functioning of organic systems contributes to maintanance of homeostasis.

Syllabus

Theoretical instruction

Physiology of membrane transport. Resting membrane potential and genesis of action potential. Functional organization of skeletal and cardiac muscle. Basic mechanisms of synaptic transmission. Basic principles in perception and receptors. Reflex arc, reflexes and controle of movement. Function of the autonomic nervous system. Central regulation of visceral function. Phyisiology of circulating body fluids, main functions of the cellular elements of blood, hemostasis, basic principles in functional organisation of vascular system. Physiology of respiratory, gastrointestinal and excretory system. Basics in functional organization of endocrine system.

Practical instruction

Membrane transports. Computer simulations of functions of nerve and muscle cell. Experiments on nerve-muscle frog preparation and frog heart preparation *in situ*. Characterisitics of serum/plasma. Determination of number of cellular elements in peripheral blood. Blood differential test. Physiology of respiratory and circulatory system. Physiological aspect of food digestion. Qualitative and quantitative analysis of urea concentration in serum. Computer simulations of filtration and osmoregulation. Determination of phases of estrous cycle in female rats.

Recommended Literature:

Ganong WF (2005): *Review of Medical Physiology*. Lange/WCB McGraw-Hill Companies.

Additional Literature:

Germann WJ & Stanfield CL (2005): *Principles of Human Physiology*. Pearson Education & BenjaminCummings.
Kovacevic R, Kostic T, Andric S, Zoric S. (2005): *General Animal Physiology (script)*. WUS Austria.
Andric S, Kostic T, Andric N, Zoric S. (2005): *Comparative Animal Physiology (script)*. WUS Austria.

Weekly teaching load				Other:
Lectures: 3	Exercises:	Other forms of teaching: 4	Student research:	

Teaching methodology

Theoretical part - Lectures

Practical part – Combination of laboratory work and computer simulations

Grading method (total number of points 100)			
Pre-exam obligations	**points**	**Final exam**	**points**
Practical problems	up to 30	Oral exam	up to 20
Tests	up to 50		