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| **UNIVERSITY OF NIŠ** | | | | | | |
| **Course Unit Descriptor** | | **Faculty** | | | Faculty of Sciences and Mathematics  Department of Biology and Ecology | |
| **GENERAL INFORMATION** | | | | | | |
| Study program | | | | Biology | | |
| Study Module (if applicable) | | | | / | | |
| Course title | | | | Animal physiology | | |
| Level of study | | | | Bachelor  Master’s  Doctoral | | |
| Type of course | | | | Obligatory  Elective | | |
| Semester | | | | Autumn Spring | | |
| Year of study | | | | third | | |
| Number of ECTS allocated | | | | 6 | | |
| Name of lecturer/lecturers | | | | Đorđević Ljubiša | | |
| Teaching mode | | | | Lectures Group tutorials  Individual tutorials  Laboratory work  Project work  Seminar  Distance learning  Blended learning  Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| - Understanding the basic physiological and metabolic processes of animals  - Mastering the work in physiological laboratories | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| Theoretical classes  Introduction to the cell physiology. The development of the receptor effector system and classification of receptors. Conductors. Nerve cell and its features. The analogy between the nerve fiber and coaxial cable. Intra- and extracellular distribution of ions and laws of diffusion. Active transport of sodium, potassium and other ions. Receptors: general characteristics of receptors, their transduction and amplifying role. Bioluminescence and physical characteristics of the emitted light. Ear and phonoreceptors, sound waves and sound transmission. Effectors: skeletal muscles, the basic characteristics and innervation. Electric organs. Myocardium and its specificity. Vegetative innervation and double innervation of vegetative effectors. Synapses: types of synapses and synaptic transmission in the CNS  Practical classes: Exercises, Other modes of teaching, Study research  Methods in experimental physiology and experiments on different model organisms:  Functional characteristics of the nerve, skeletal, cardiac and smooth muscle. Nerve-muscle preparation. The 'in situ' frog heart preparation. Cardiac muscle automaticity and Stanius's ligature. Cardiac muscle work in frog and the effect of temperature. The all-or-none law. Refractory period of the heart and extrasystoles. Frank-Starling law. The effect of salt on the cardiac muscle work. Vagal inhibition and the effect of adrenaline and acetylcholine on heart rate. Electrocardiography. Spinal preparation and spinal (medullary) reflexes. Examination of the static reflex in frog. Reflexes of intact frogs. Hearing threshold testing in humans. Blind spot proving in the human eye. Contrasting effects and optical illusions. Computer simulation of electrophysiological phenomena. | | | | | | |
| **LANGUAGE OF INSTRUCTION** | | | | | | |
| Serbian (complete course)  English (complete course)  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)  Serbian with English mentoring Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| **ASSESSMENT METHODS AND CRITERIA** | | | | | | |
| **Pre exam duties** | **Points** | | **Final exam** | | | **points** |
| **Activity during theoretical lectures** | **5** | | **Written examination** | | | **20** |
| **Practical learning** | **5** | | **Oral examination** | | | **40** |
| **Colloquia** | **20** | |  | | |  |
| **Seminar** | **10** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |