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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 | | | | Comparative animal physiology | | |
| Level of study | | | | Bachelor  Master’s  Doctoral | | |
| Type of course | | | | Obligatory  Elective | | |
| Semester | | | | Autumn Spring | | |
| Year of study | | | | first | | |
| 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)** | | | | | | |
| Acquiring knowledge on the basic physiological principles, with a special emphasis on homeostatic adaptation mechanisms in animals and humans. | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| Theoretical classes  External and internal environments. Basic mechanisms of adaptation. Internal environment of the organism. Body fluids. Homeostatic mechanisms. Immunological mechanisms of homeostasis defense. Haemostasis. Physiology of circulation, respiration and digestion. Parts of the alimentary system and their role in digestion. Resorption. Intermediate metabolism. Physiology of the Endocrine system. Endocrine glands and their significance in invertebrates and vertebrates. Endocrine system of mammals. The pituitary gland, thyroid gland, paratireoidea, adrenal glands, pancreas, gonads. Physiology of the nervous system. The nervous system of invertebrates. Cephalization process. Nervous system of vertebrates. Development of CNS and its role. The peripheral nervous system  Practical classes: Exercises, Other modes of teaching, Study research  Quantitative analysis of chloride and urea concentration in urine, the number of cellular elements in human peripheral blood. The effects of adrenaline on capillary bloodstream of frogs. Blood pressure and heart rate in humans. Vital lung capacity. The analysis of human alveolar air. Determining the concentration of glucose in the blood. Determining the total protein concentration of in plasma. The free fatty acids in the serum of rats. The intensity of the metabolism as a function of body weight. Determining the concentration of hormone in the blood. The work capacity of the adrenalectomized rat. The intensity of metabolism in thyroidectomized rats. The effect of stimulation of the front and rear roots of the spinal cord on the muscle contraction. | | | | | | |
| **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** | **10** | | **Written examination** | | | **10** |
| **Practical learning** | **10** | | **Oral examination** | | | **50** |
| **Colloquia** | **10** | |  | | |  |
| **Seminar** | **10** | | **OVERALL SUM** | | | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | |