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|  | | | **UNIVERSITY OF EAST SARAJEVO**  **Faculty of Medicine Foča** | | | | | | | | | | | | Description: logo | | |
| ***Study program: Nursing*** | | | | | | | | | | | |
| First study cycle | | | | | | First study cycle | | | | | |
| **Full subject title** | | | PHYSIOLOGY WITH BIOPHYSICS | | | | | | | | | | | | | | |
| **Department** | | | Department for preclinical subjects, Faculty of Medicine in Foča | | | | | | | | | | | | | | |
| **Subject code** | | | | | | **Subject status** | | | | | **Semester** | | | | **ECTS** | | |
|
| NU-05-1-008-2 | | | | | | compulsory | | | | | II | | | | 6 | | |
| **Professor/ -s** | | Zvezdana Kojić, Full Professor, Siniša Ristić, Full Professor, Nenad Ponorac, Full Professor, Milan Kovačević, Full Professor | | | | | | | | | | | | | | | |
| **Associate/ -s** | | Sunčica Starović-Bajčetić, Senior Assistant, Ivan Jojić, Assistant, Darinka Popović, Assistant | | | | | | | | | | | | | | | |
| **Number of lectures/ teaching workload (per**  **week)** | | | | | | | **Individual student workload (in hours per**  **semester)** | | | | | | | | | **Coefficient of student**  **workload So1** | |
| **L** | **E** | | | | **SP** | | **L** | | | **E** | | **SP** | | | | **L** | |
| 3 | 2 | | | | 0 | | 63 | | | 42 | | 0 | | | | 1,4 | |
| total teaching workload (in hours, per semester)  45+30+0= 75 | | | | | | | | total student workload (in hours, per semester)  63+42+0= 105 | | | | | | | | | |
| Total subject workload (teaching + student): 75+ 105 = 180 hours per semester | | | | | | | | | | | | | | | | | |
| **Learning outcomes** | | By mastering this course, students will be equipped to:   1. Recognize pathophysiological processes and their manifestations, as well as the risk factors that influence health and disease at various stages of life. 2. Monitor integrative physiological processes and easily and logically correlate the functions of multiple systems. 3. Utilize acquired knowledge as a fundamental basis for understanding the mechanisms of pathological processes and their resolution. 4. Understand physiological processes to effectively follow clinical disciplines, infer potential systemic disorders from anamnesis and laboratory data, and evaluate their impact on the functioning of other organ systems. | | | | | | | | | | | | | | | |
| **Preconditions** | | No preconditions | | | | | | | | | | | | | | | |
| **Teaching methods** | | Lectures, exercises, seminar papers, colloquium, practical work | | | | | | | | | | | | | | | |
| **Subject content per week** | | **Lectures:**   1. Fundamental principles of biophysics: fluid biomechanics, bioelectrical phenomena. Basic elements, principles, and laws of thermodynamics; optical system of the eye. 2. Introduction to physiology. Cell membrane and transport. Characteristics of excitable tissues. Ion channels. Membrane potential. Action potential. Receptor and synaptic potential. 3. Synapse. Neural circuits. Muscles. 4. Functional integration of sensorimotor programs. Physiology of the sensory system. 5. Signal processing in the cortex. General and somatic sensitivity. 6. The eye—dioptric apparatus, eye—physiology of vision, cortical signal processing. 7. Sense of hearing, balance, smell, and taste. 8. Motor system, sensorimotor programs of the spinal cord and brainstem, maintenance of balance. 9. Motor zones of the cortex, organization of voluntary motor actions. 10. Regulation and control of voluntary motor functions. Basal ganglia. Cerebellum. 11. Associative regions of the cortex. Hemispheric specialization. 12. Limbic system and neurophysiological mechanisms of learning and memory. 13. Wakefulness-sleep. Biological rhythms. 14. Physiology of the gastrointestinal tract (GIT)—motility, secretion, and regulation. 15. GIT absorption. Energetics and metabolism. 16. Biomechanics of the human locomotor system. Biomechanics of the cardiovascular system. 17. Transport processes in the human body. 18. Bioelectrical processes in the human body. 19. Sound and ultrasound. 20. Light, the eye, and vision.   **Exercises:**   1. Blood 2. Blood 3. Blood 4. Blood 5. Blood 6. CVS (Cardiovascular System) 7. CVS 8. CVS 9. CVS 10. CVS 11. Respiration 12. Kidneys, pH 13. GIT (Gastrointestinal Tract) 14. Endocrine 15. Nutrition and Metabolism | | | | | | | | | | | | | | | |
| **Compulsory literature** | | | | | | | | | | | | | | | | | |
| **Author/s** | | | | **Publication title, Publisher** | | | | | | | | | | **Year** | | | **Pages (from-to)** |
| Guyton, MD.,John E.,Hall Ph.D. | | | | MEDICINSKA FIZIOLOGIJA, Savremena administracija, Beograd, 2003. | | | | | | | | | | 2003 | | |  |
|  | | | |  | | | | | | | | | |  | | |  |
| **Additional literature** | | | | | | | | | | | | | | | | | |
| **Author/s** | | | | **Publication title, Publisher** | | | | | | | | | | **Year** | | | **Pages (from-to)** |
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| **Student obligations, types of student assessment and grading** | | **Grading policy** | | | | | | | | | | | **Points** | | | | **Percentage** |
| Pre-exam activities | | | | | | | | | | | | | | | |
| lecture/exercise attendance | | | | | | | | | | | | | 5 | | 5% |
| seminar paper | | | | | | | | | | | | | 15 | | 15% |
| colloquium | | | | | | | | | | | | | 15 | | 15% |
| practical work | | | | | | | | | | | | | 15 | | 15% |
| Final exam | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | |  | |  |
| written | | | | | | | | | | | | | 50 | | 50% |
| TOTAL | | | | | | | | | | | | | 100 | | 100 % |
| **Certification date** | | December 2024. | | | | | | | | | | | | | | | |