

<b>Name of the course:</b> MOTOR AND METABOLIC ADAPTATIONS TO TRAINING		
<b>Teacher(s):</b> Milivoj J. Dopsaj, Vladimir Ž. Ilić		
<b>Course status:</b> Elective		
<b>Number of ECTS points:</b> 10		
<b>Requirement:</b> No		
<b>Course objective:</b> To enable students to acquire advanced knowledge related to motor and metabolic (physical, motor, morphological, haematological, biochemical, etc.) changes in the function of physiological adaptations to systematically programmed and planned physical exercise for different needs of performance, age and gender. Students will be introduced to standard and advanced diagnostic procedures that quantitatively and qualitatively monitor adaptive changes at the level of locomotor, cardiorespiratory, neuroendocrine, haematological and biochemical system, but also with methodological and statistical aspects of evaluation of the degree of given adaptations.		
<b>Outcome of the course:</b> After fulfilling all the obligations provided by the course program, students should acquire new knowledge and professional skills that will enable them to: understand the acute and chronic responses of the organism that occur under the influence of training of different orientation by type of motor complexity, endurance and contractile abilities. and processes that lead to the restitution of contractile potential and energy sources during the recovery process. This will enable them for the procedures of designing and programming training loads, and expert methodological evaluation of the efficiency of their application, regardless of whether it is a system of sports or a system of physical exercise for health. Also, after fulfilling all the obligations provided by the program, it is expected that the student with the acquired new knowledge, abilities and skills will be able to independently carry out all necessary procedures of recording, recognizing, analyzing and evaluating problems, in order to find the most effective solutions.		
<b>Content of the course:</b> <i>Theoretical classes</i> It will include theoretical and practical classes that will address the functions of cell organelles and enzymatic adaptations at the cellular level that occur in and without the presence of oxygen, metabolism of nutrients, vitamins and minerals, structural changes in tissues during training, the role of hormones and tests. for measuring motor, contractile and functional capacities. <i>Practical teaching</i> Design, implementation and evaluation of training load models in the system of sports and physical exercise <i>Practical teaching methods:</i> Group work (laboratory, field, combined and complex measurements).		
<b>Recommended literature</b> 1. MacLaren, D., Morton, J. (2011). Biochemistry for sport and exercise metabolism. John Wiley & Sons. 2. Plowman, S. A., Smith, D. L. (2013). Exercise physiology for health fitness and performance. Lippincott Williams & Wilkins. 3. Schumann, M., Rønnestad, B. R. (Eds.). (2018). Concurrent aerobic and strength training: Scientific basics and practical applications. Springer. 4. Taner, R., Gore, C. (2013). Physiological tests for elite athletes (Sec. Ed.). Human Kinetics & Australian Institute of Sport. 5. Hair, J., Black, W., Babin, B., Anderson, R. (2014). 7th Ed. Multivariate data analysis. UK: Pearson Education Limited.		
Number active classes	Theory: 4	Practice:
<b>Course delivery methods</b> Lectures, work in small groups, seminar papers and presentations, homework.		
<b>Knowledge assessment (maximum number of points 100)</b> activity during the lecture - 10; activity during exercises - 15; seminar paper - 20; final exam -55.		
Testing ways may vary: (written exams, oral exams, project presentations, seminars, etc. ....)		
*maximum length 1 A4 page		