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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | **Faculty of Sport and Physical Education** |
| **GENERAL INFORMATION** |
| Study program  | **Doctoral Academic Studies, Sports Science** |
| Study Module (if applicable) |  |
| Course title | Applied biomechanics of sport |
| Level of study | ☐Bachelor ☐ Master’s ☒ Doctoral |
| Type of course | ☐ Obligatory☒ Elective |
| Semester  | ☒ Autumn ☐Spring |
| Year of study  | Second |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Ratko Stanković, Ph.D, full professor; Saša Bubanj, Ph.D, associate professor |
| Teaching mode | ☒Lectures ☐Group tutorials ☐ Individual tutorials☐Laboratory work ☒ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☒ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Students will be able to use the results of previous research in the field of biomechanics related to movements and motions in sport. After passing the exam, the student will be able to apply acquired knowledge, independently conduct research studies using different biomechanical methods in the field of sports.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Energetics of bone fractures, Elasticity and elastic deformations, Neuro-musculoskeletal system of activities. Definition and explanation of the parameters, Reaction time, Interpretation of test results. The purpose of the measurement of various neuromuscular parameters, Testing procedure. Types of fibers. Graphic determination of the resultant of the force parallel system, Systems of simultaneous forces that intersect at one point. An alternative method of determining the torque. Biomechanical laws in different types of injuries of the locomotor system. Form and ways of modeling the muscular response, Active models of responsibility, Passive responsible models, Complex moving of the individual models, Biomechanical model. Difficulties with the lumbar spine, measuring live and biomechanical analysis. The balance in muscle strength between waist agonist and antagonist, EMG of the upright position of the spine in the structure of the stretching tasks, Modeling of the muscle responses of the cervical spine in humans.** |
| **LANGUAGE OF INSTRUCTION** |
| ☒Serbian (complete course) ☒ English (complete course) ☒ Other French and Spanish (complete course)☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Theory** | **10** | **Theory examination** | **30** |
| **Seminar paper** | **20** |  |  |
| **Presentation of the work** | **20** |  |  |
| **Interactive teaching** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |