



# UNIVERSITY OF NIŠ

**Course Unit Descriptor**

**Faculty**

**Faculty of Sport and Physical Education**

## GENERAL INFORMATION

Study program

Basic Academic Studies, Physical Education and Sport

Study Module (if applicable)

Course title

Biomechanics

Level of study

Bachelor academic  Master's  Doctoral

Type of course

Obligatory  Elective

Semester

Autumn  Spring

Year of study

Second

Number of ECTS allocated

6

Name of lecturer/lecturers

Ratko Stanković, Ph.D, full professor; Saša Bubanj, Ph.D, full 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 are enabled to understand basic functioning of the locomotor system by applying functional anatomy in the area of human movements.*

## SYLLABUS (brief outline and summary of topics, max. 10 sentences)

**Theory:** The concept and importance of the subject, The development of "the science of motion." Biomechanical principles and methods of research; joints. Kind of motion in the joints. Mechanical properties of joints; bones in the musculoskeletal system. Mechanical properties of bone, Fiber types, Types of muscle, Functional characteristics of muscle. Physiological characteristics of smooth muscle; shape and type of muscular contraction, Muscle work, Torque, Muscle fatigue; muscle force as a vector. Classification of force systems, Linear system power, Parallel forces in a plane. Resultant of: determining the center of gravity of the body, Stacking forces, Decomposition of the force. The overall general system power; Kinematics locomotion, Kinematic methods of research, Basic kinematic scheme of complex movements. General classification of complex movements, Straight, curved and central movement, Oscillation, The dynamics of locomotion. **Practicals:** Practical teaching follows the theoretical classes. Goniometry - Software MAT, VII; Kinematics - Software and VIDEO TO HUMAN; Densitometry - studying densitometer SAHARA; Dynamometer - Dating Software FORCE STATIC.

**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**

<b>Pre exam duties</b>	<b>Points</b>	<b>Final exam</b>	<b>points</b>
<b>Theory</b>	<b>10</b>	<b>Final examination</b>	<b>30</b>
<b>Colloquium 1</b>	<b>25</b>		
<b>Colloquium 2</b>	<b>25</b>		
<b>Seminar paper</b>	<b>10</b>	<b>OVERALL SUM</b>	<b>100</b>

\*Final examination mark is formed in accordance with the Institutional documents