SYLLABUS

1. Course title:

Biomechanics I

2. Code:

(max. 20 characters)

3. Cycle of study:

1

4. ECTS credits:

5

5. Type of course:

(●) Mandatory ( ) Elective

6. Prerequisites:

Completed the I (first) semester, with min. 25% of the student's prepayment points

7. Class restrictions:

No restriction

8. Duration / semester:

15 IV

9. Weekly contact hours:

9.1. Lectures: 2

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 2

10. Faculty:

Faculty of Physical Education and Sports

11. Department/study program:

A regular study

12. Lecturer:

Dr. sc. Tarik Huremović, docent

13. Lecturer's e-mail:

tarik.huremovic@untz.ba

14. Web site:

www.ftos.untz.ba

15. Course aims:

Objectives of the Biomechanics I are mathematical and physical principles that determine the efficiency of motor structures, procedures for the analysis of motion structures, simulation and motion optimization, as well as procedures for determining the physical and morphological factors that depend on the efficiency of the moving structures.

16. Learning outcomes:

After completing the semester students who regularly attended the Biomechanics I course:
• students will master the theoretical knowledge and skills needed in the implementation of Biomechanics I program contents in the educational process (physical and health education) at all levels,
• Through teaching materials will get information on the fundamental legitimacy of movement and movement
• Intellectual skills and communication skills will be at a higher level,
• be trained to use available literature and solve various problems

17. Course content:

1. Biomechanics Introduction (Biomechanics Definition, Biomechanics Tasks, Biomechanical Objectives of Sport,
2.Anatomic principles (movement of the human musculoskeletal system, skeleton and bone, body joints, muscles, muscular contraction mechanics)
3. Kinematics (Basics of Kinematics, Examples of Stacking and Shuffling Force, Muscle as a Vector, Research in Linear Kinematics, Project Move, Rotational Kinematics
4. The Application of New Law in Sports (The Basics of Linear Kinetics, Trunks, Collisions - Sports Facilities)
5. Linear and Corner Kinematics (Moment of Inertia, Array Moment, Spatial Rotation)
6.Statistics, Balance and Leverage (Balance, Linear Force System, Parallel Force System, Force Moment, Lever System)
7.Error impulse
8.Biomechanical analysis of movement development
9.Kinetic chains
10. Mechanics of liquidity and energy
11. Cinematography and video analysis
12. Systematic measurements in biomechanics
13.Elektromiography
14. Techniques for analysis of sports movements
15.Anatomy in service of biomechanics

18. Learning methods:

The learning styles represented in the lessons include: the method of oral presentation, conversation, illustration and demonstration, and the use of multimedia resources, active learning techniques and discussion.

19. Assessment methods:

The student's obligation is to attend regular lectures and auditorials throughout the semester. The lecturer will monitor the presence during the semester. In the sixth week will be the first check, ie the colloquium (theoretical). This colloquium encompasses the material that has been processed so far. The test consists of a number of questions and their number and scoring depend on the weight of the task scheduled for the interviews. The student can earn up to 16 points in this exam. In the twelfth week a second intermediate is envisaged, covering the building material from the first to the second coin. This mid-point is scored by the same principle as the first. The final exam consists of a written part, and all students are entitled to attend the final exam regardless of the number of points earned on the interviews. The maximum number of points that the student can win in the pre-requisites is 60. As much as the student earns points on the pre-requisites, They add up to other points but do not represent an obstacle for a student to complete their final exam. If a student fails to score enough points that fail to qualify for a passing grade, the student must re-enter the exam in order to gain more points and pass the exam.

Grading ratings are as follows:

Points	Score
0-53	(5)
54-63	(6)
64-73	(7)
74- 83	(8)
84- 93	(9)
93-100	(10)

20. Assessment components:

The score based on the total number of points is determined according to the following scale:

Presence in lectures	max 10
Presence on exercises	max 10
Student activity	(theory 4, practically 6) 10
Colloquium I	max 15
Colloquium II	max 15
Final exam	max 40

21. Required reading list:

1. Biberović (2005) Biomehanika, FTOS, Off - Sat Tuzla
2. Biberović (2007) Biomehanika, FTOS, Off – Set Tuzla
3. Biberović, B. Mikić, S. Mačković (2002): Biomehanička analiza funkcija mišića u regulaciji skok-šuta. Zbornik radova Vol. 2, br.2, 317-3

22. Web sources:

Biberović A.Biomehanika, „OFF-SET“ -Tuzla, Tuzla 2007.
Hay, J.G. (1994). The Biomechanics of Sports Techniques. Englewood Cliffs, NJ: Prentice-Hall.
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23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session:

(max. 10 char.)