1. Course title: **Biomechanics**

2. Type of the course**:** **Lectures and regular classes**

3. Form of evaluation: **Examination**

4. Recommended amount of hours: **20**

   Classes: **14**

   Lectures: **6**

5. Proposed semester: **winter**

6. Course description:

The course offers an introduction to biomechanics understood as the application of the principles of mechanics in the analysis of human movement. Introduces the basic concepts and principles of statics, kinematics and dynamics, both the translational movement and rotation, such as the center of mass and center of gravity, Newton's principles and rules conservation of momentum, angular momentum and energy, together with an explanation of their role in human motion analysis. The course aims to introduce students to those used in clinical biomechanical measurement techniques and methods of qualitative and quantitative analysis, with examples of their application in selected cases of static and dynamic. The course includes measurements of the torques of selected muscle groups, measurement of ground reaction forces and 3D methods of movement registration.

7. Learning outcomes:

1. The student has the basic knowledge in the field of biomechanics of human movement system.
2. The student is able to measure kinematic and dynamic parameters useful in the evaluation of functional status of the human motor system.
3. The student can take advantage of practical knowledge and skills in the field of biomechanical evaluation of passive and active movement of the man at rest and physical activity.

8. Qualifications:

The student has the basic knowledge and skills in the field of biomechanics, which allows him to assess the functional status of the human musculoskeletal system using appropriate methods.

9. The unit implements the subject:

Department of Biomechanics, Institute of Biomedical Sciences

10. Instructors: **dr hab. Wanda Forczek**

11. Recommended credit points: **4**