ID	2643
Curricular Unit	Clinical Biomechanics
Regent	António Prieto Veloso
Learning Outcomes	Recognize and analyze in Human Behavior, biomechanical functions that are the result of adaptation to the physical laws of Newtonian mechanics. biomechanical functions through the appropriate application of physical-mathematical models and biomechanical basics. undertake analysis of the parameters of the concepts applied in laboratory situations and terrain so that they correspond to a transfer to real situations present and future.
Syllabus	Fundamental Biomechanical Principles in the study of motion in Human Locomotor System. Characterization of many biomechanical representation applicable to the study of the musculoskeletal system and study of the forms of numerical representation of kinematic and kinetic variables applicable to each of these models. Study and characterization of key anatomical structures for the study of human movement in its normal form and its relationship with major diseases and special conditions (pregnancy, obesity, etc.). Skeletal structure, cartilage and joint structure, muscle-tendon complex Study of the fundamental mechanical properties of biological tissues; elasticity, visco-elasticity, stress-strain relationship, contractility and biomechanical model of skeletal músuclo. Changes in mechanical properties of tissues, the effect of intensity, duration and frequency of application of mechanical loading.Use of ultrasonography and high-speed sonoelastografia to study the properties of the muscle
Evaluation	Final exam
Bibliography	Dainty, DA; Norman, RW (1987) Standardizing biomechanical testing in sport Champaign: Human Kinetics Kumar, S. (1999) Biomechanics in ergonomics Philadelphia: Taylor & Francis Nigg, B.; Herzog, W. (1995/1999/2007) Biomechanics of the musculo-skeletal system Chichester: Wiley Winter, D. (1990) Biomechanics and motor control of human movement New York: Wiley Journal of Biomechanics Clinical Biomechanics Journal of Applied Biomechanics