



**Course Unit: 956304 - Functional Anatomy of the Locomotor System**

Year 1 Semester 1 ISCED Code: 421 ECTS: 3

Type of Course Unit: Compulsory Delivery Mode: Face-to-face

Language of Instruction: Portuguese

**COURSE COORDINATOR: Nuno Eduardo Marques de Loureiro**

**HOURS OF WORK**

TOTAL HOURS	Contact Hours								Hours in autonomous work
	Theory	Theory and practice	Practical and laboratory work	Field work	Seminar	Internship	Tutorial guidance	Other	
75	10	10	10						45

Prerequisites (if applicable):

**LEARNING OUTCOMES (knowledge, skills and competence)**

- Knowing the concepts and theoretical foundations of human anatomy;
- Knowing the external and internal anatomy of the human body, in particular the skeletal, articular and muscular systems;
- Interpret the specific physiological processes of the organs and systems that integrate the Locomotor Apparatus;
- To develop the capacity of interpretation, analysis and intervention regarding the anatomical and physiological phenomena inherent in physical exercise;
- Develop the capacity of interpretation of human movements and their muscular and articulate participation;
- Acquire functional competencies for intervention in the sports context;
- To allow the identification of the most common pathologies of the locomotive apparatus, associated to the practice of sports..

**CONTENTS**

1. General organization of the human body
  - a) Fundamental Anatomical Concepts
  - b) Structural organization of the human body and its systems
  - c) Anatomical orientation position, Descriptive planes, Shafts of movement, Directional terms, Fundamental movements
2. Locomotive apparatus
  - 2.1. Skeletal System
    - a) Anatomical, physiological and functional organization
    - b) Anatomical and functional organization of the skeletal system. Skeletal system tissues
    - c) Skeleton
  - 2.2. Articular System
    - a) Anatomical, physiological and functional organization
    - b) Types of articulation. Joint movements. Structural and functional classification of synovial joints
    - c) Study of the articular system - anatomical and functional characterization of the main joints
  - 2.3. Muscular System (Skeletal)

- a) Anatomical, physiological and functional organization
- b) Anatomical and functional organization of the muscular system; skeletal striated muscle tissue
- c) Structure and physiology of the skeletal muscle fiber

#### **DEMONSTRATION OF THE CONTENTS COHERENCE WITH THE COURSE UNIT'S LEARNING OUTCOMES**

This Curricular Unit aims to provide basic training in human anatomy and physiology, aimed at studying the structures, functions and integrated functioning of biological systems, with special emphasis on the processes related to Motricity and Physical Activity.

#### **TEACHING METHODOLOGIES**

- Oral presentation of content, using audiovisual means;
- Viewing, analyzing and discussing videograms;
- Observation, interpretation and manipulation of anatomical models;
- Interaction through questions and examples of concrete cases of daily life and sports performance;
- Research tasks on the contents to be addressed;
- Exploration of the potential of the software "Visible Body"

#### **DEMONSTRATION OF THE COHERENCE BETWEEN THE TEACHING METHODOLOGIES AND THE LEARNING OUTCOMES**

This curricular unit constitutes a fundamental knowledge base for the future graduate of the area of physical activity and sport, since it allows him to know the functioning and the structure of the components of the human body on which he should work. Thus this curricular unit presents methodologies of expositive character and theoretical-practical in order to cover basic information on these subjects in a functional way. At the level of the selection of the contents there is a continued concern to focus fundamentally on themes relevant to the area of Sport.

#### **EVALUATION METHODS**

Individual written tests.

#### **MAIN BIBLIOGRAPHY**

- Correia, P; Espanha, M. (2010). Aparelho Locomotor, vol. 1. Anatomofisiologia dos Sistemas, Nervoso, Osteoarticular e Muscular. FMH edições. Cruz Quebrada.
- Correia, P. (2012). Aparelho Locomotor, vol. 2. Função Neuromuscular e Adaptações à Atividade Física. FMH edições. Cruz Quebrada.
- Pina, J. A. E. (2010). Anatomia Humana da Locomoção. Lidel. Lisboa
- Whiting, W. (2015) Dynamic Human Anatomy 2nd Edition epub With Web Study Guide. Champaign. Human Kinetics

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