

Course Unit	Human Movement Study II	Field of study	Physiotherapy
Bachelor in	Physiotherapy	School	School of Health
Academic Year	2023/2024	Year of study	1
Type	Semestral	Semester	2
Level	1-1	ECTS credits	6.0
Code	9504-770-1203-00-23		
Workload (hours)	162	Contact hours	T - TP 60 PL - TC - S - E - OT 20 O -

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Marisa Filipa dos Santos Lages, Mário Alexandre Gonçalves Lopes, Tiago Manuel Cabral dos Santos Barbosa

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. - To understand the kinetics and kinematics of human gait, mastering concepts, terminology, and assessment tools
2. - To comprehend the terminology and processes involved in motor control, applying them to specific problems
3. - To describe the bioenergetics according to the characteristics of physical exercise and/or training conducted
4. - To understand the acute and chronic effects of exercise, analyzing the changes in the cardiovascular, respiratory and endocrine function according to the type of physical demand
5. - To understand the effect of external variables, namely environmental, in the response to exercise

### Prerequisites

Before the course unit the learner is expected to be able to:  
None

### Course contents

1. Human Gait: General Concepts; Biomechanics of human gait; Gait cycle: joint movement and muscle activity involved in the gait cycle. 2. Introduction to Motor Control: Neuromotor basis for motor control; Theories of motor control; Touch, proprioception, and vision; Performance and motor control characteristics of functional skills; Action preparation.

### Course contents (extended version)

1. Human Gait:
  - General Concepts
  - Biomechanics of human gait
  - Gait cycle: joint movement and muscle activity involved in the gait cycle
2. Introduction to Motor Control
  - Neuromotor basis for motor control
  - Theories of motor control
  - Touch, proprioception, and vision
  - Performance and motor control characteristics of functional skills
  - Action preparation

### Recommended reading

1. Powers, S. , Howley, E. (2004) Fisiologia do Exercício. Teoria e Aplicação ao Condicionamento e ao Desempenho. 5ª edição. S. Paulo: Editora Manole.
2. Magill, R. A. (2011) Motor learning and control: concepts and applications. 9th edition, New York: McGraw-Hill.
3. Kapandji, I. (2004) Fisiologia articular (Vol. 1, 2, 3). S. Paulo: Editora Manole.
4. Winter, D. A. (2005) Biomechanics and motor control of movement. 3rd edition, New Jersey: John Wiley & Sons.

### Teaching and learning methods

Lectures - sharing of the fundamental concepts and theories underlying the topic to be presented Practical sessions - demonstrations and simulated peer practice in pairs and small groups in a laboratory setting Tutorial sessions - support and guidance of students in different tasks and clarifying doubts

### Assessment methods

1. End of term - Regular student - (Regular) (Final)
  - Intermediate Written Test - 58% (Two mid-term sit-down tests)
  - Practical Work - 32% (Submission of group projects)
  - Reports and Guides - 10% (Visit Report)
2. End of term - work-study student - (Student Worker) (Final)
  - Final Written Exam - 100% (End-term sit-down test)
3. Resit and Special Examination Periods - (Regular, Student Worker) (Supplementary, Special)
  - Final Written Exam - 100% (Sit-down exam)

### Language of instruction

1. Portuguese
2. Portuguese, with additional English support for foreign students.

### Electronic validation

Mário Alexandre Gonçalves Lopes, Marisa Filipa dos Santos Lages, Tiago Manuel Cabral dos Santos Barbosa	Adília Maria Pires da Silva Fernandes	Luis Migue Fernandes Nascimento	Olívia Rodrigues Pereira
25-03-2024	26-03-2024	26-03-2024	03-04-2024