

Course Unit	Human Movement Study II	Field of study	Physiotherapy
Bachelor in	Physiotherapy	School	School of Health
Academic Year	2022/2023	Year of study	1
Type	Semestral	Semester	2
Level	1-1	ECTS credits	6.0
Code	9504-770-1203-00-22		
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, 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

Marisa Filipa dos Santos Lages, Tiago Manuel Cabral dos Santos Barbosa	Adília Maria Pires da Silva Fernandes	Juliana Almeida de Souza	Andre Filipe Morais Pinto Novo
23-06-2023	28-06-2023	28-06-2023	28-06-2023