

Course Unit	Exercise Physiology		Field of study	Health Sciences	
Bachelor in	Physiotherapy		School	School of Health	
Academic Year	2022/2023	Year of study	1	Level	1-1
Type	Semestral	Semester	2	ECTS credits	4.0
Code	9504-770-1204-00-22				
Workload (hours)	108	Contact hours	T 30	TP 15	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) José Eduardo de Araújo Teixeira, Maria Cristina Martins Teixeira

### Learning outcomes and competences

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

1. Understand and interpret accurately the process of muscle contraction during physical exercise.
2. Describe in detail the functioning of the energy systems according to the characteristics of physical exercise.
3. Describe the mechanisms involved in the acute and chronic adaptations to physical exercise.
4. Describe in detail the functioning of the neuromuscular, cardiovascular, respiratory and endocrine systems during physical exercise.
5. Know and interpret the physiological events that occur during the recovery period after exercise in different environmental conditions.

### Prerequisites

Before the course unit the learner is expected to be able to:  
Not applicable

### Course contents

- A. Introduction to exercise physiology
- B. Energy systems
- C. Structure and function of skeletal muscle
- D. Neuromuscular adaptations to training
- E. Cardiorespiratory adaptations
- F. The endocrine system and exercise
- G. Exercises in hyperbaric and hipobaric environments

### Course contents (extended version)

- Objective (O) 1 - Module (Mod.) A
- O2 - Mod. B
- O3 - Mod. C and D
- O4 - Mod. E and F
- O5 - Mod. G

### Recommended reading

1. Brooks, G. A., Fahey, T. D., & White, T. P. (2000). BKM Exercise physiology: Human bioenergetics and its applications.
2. Fox, E. L., Bowers, R. W., & Foss, M. L. (1993). The physiological basis for exercise and sport (No. Ed. 5). Brown & Benchmark.
3. Kenney, W. L., Wilmore, J. H., & Costill, D. L. (2021). Physiology of sport and exercise. Human kinetics.
4. Powers, S. K., Howley, E. T., & Quindry, J. (2007). Exercise physiology: Theory and application to fitness and performance (p. 640). New York, NY: McGraw-Hill.
5. Wilmore, SH; Costill, DL; Kenney, WL (2015). Physiology of Sport and Exercise. (6th Edition). Human Kinetics.

### Teaching and learning methods

- Final Season - Regular Student - (Regular)
- Intermediate Written Test - 60% (Two mini-tests)
- Practical Work - 30% (Group work)
- Continuous Evaluation - 10% (Individual development work)
- 2. Final Season - Student Worker - (Student Worker)
- Final Written Exam - 100% (Final written exam)
- 3. Appeal and special season - (Student Worker) (Final, Supplementary, Special)
- Final Written Exam - 100

### Assessment methods

- End of term - (Regular, Student Worker) (Final, Supplementary, Special)
- Intermediate Written Test - 60% ((Two mini-tests))
- Practical Work - 40% ((Group work and individual development work))

### Language of instruction

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

### Electronic validation

José Eduardo de Araújo Teixeira, Maria Cristina Martins Teixeira	Adília Maria Pires da Silva Fernandes	Ana Maria Nunes Português Galvão	Carlos Pires Magalhães
05-06-2023	28-06-2023	29-06-2023	29-06-2023