

Course Unit	Evaluation and Prescription of Exercise	Field of study	Sport Sciences
Master in	Physical Exercise and Health	School	School of Education
Academic Year	2023/2024	Year of study	1
Type	Semestral	Semester	1
Workload (hours)	243	Contact hours	T 10 TP 25 PL 20 TC - S 20 E - OT 6 O -
Level	2-1	ECTS credits	9.0
Code	6125-520-1101-00-23		

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 Augusto Afonso Bragada

Learning outcomes and competences

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

1. To know the assessment methods and to design physical exercises programs to improve cardiorespiratory and muscular fitness
2. To know the assessment methods of body composition.

Prerequisites

Before the course unit the learner is expected to be able to:

1. To know the basics of exercise physiology.
2. To know the fundamentals of the general theory of sports training;
3. Interpreting texts related to this area of knowledge

Course contents

Assessing cardiorespiratory fitness and designing cardiorespiratory exercise programs Assessing muscular strength and endurance and designing muscular fitness programs. Cineantropometry and weight control

Course contents (extended version)

1. Cineantropometry and weight control
 - Anatomical planes and axes Anatomical landmarks Measurement of body dimensions
 - Somatotype
2. Body composition assessment
 - Models and methods of body composition assessment
3. Design of exercise programs for weight control
4. Means and methods of measurement and evaluation of musculoskeletal fitness
 - Means, methods, and measurement and evaluation of the strength tests
 - Means, methods, and measurement and evaluation of flexibility and stretching tests.
5. Prescription strength exercise for the development of musculoskeletal fitness
 - Kinesiological analysis of strength training exercises
 - Means and methods of training for strength development: special populations
 - Means and methods of training for the development of flexibility and stretching
6. Assessment and training of the cardiovascular and respiratory capacity (CC_R)
 - Notion CC_R; forms of expression: VO₂max and TEM.
 - Relationship with CC-R and health;
 - Methods of assessment of VO₂max: direct and indirect, of field and laboratory;
 - The estimation of VO₂ from the formulas ACSM.
 - Other concepts related to VO₂max: MHR, HRReserve;
 - Evaluation of training load, frequency, volume and intensity.
 - Different ways to control the intensity: FCMax, CFReserve; HRNet; MET, the RPE.
 - Training methods for CC-R; types of exercise.
 - Stages of progression of the training of CC-R

Recommended reading

1. Heyward, V. H. ; Wagner, D. R. (2004). Applied body composition assessment. 2 ed. Champaign: Human Kinetics.
2. Nieman, D. C. (2003). Exercise testing and prescription. A health-related approach. 5 ed. Nova Iorque: McGraw-Hill Higher Education.
3. Heyward, V. ; Gibson, A. (2014). Advanced fitness assessment and exercise prescription. 7ª ed. Campaign: Human Kinetics
4. American College of Sport Medicine (2013). ACSM's Guidelines for Exercise Testing and Prescription. 9ª ed. Filadelfia: Lea & Febiger.
5. ACSM (2009). American College of Sports Medicine position stand. Progression models in resistance training for healthy adults. Med Sci Sports Exerc 41: 687-708.

Teaching and learning methods

Sessions of presentation and discussion of the topics. It is also proposed the develop of practical work collecting data and its analysis related with the topics discussed during the classes. In the context of practical classes students are invited to experience the different processes discussed in the lectures.

Assessment methods

1. Continuous evaluation - (Regular, Student Worker) (Final)
 - Intermediate Written Test - 50% (2 test (50% each))
 - Practical Work - 50%
2. Final exam - (Regular, Student Worker) (Supplementary, Special)
 - Final Written Exam - 100%

Language of instruction

Portuguese, with additional English support for foreign students.

Electronic validation

José Augusto Afonso Bragada	Pedro Miguel Monteiro Rodrigues	Pedro Miguel Queirós Pimenta Magalhaes	Carlos Manuel Costa Teixeira
25-01-2024	25-02-2024	26-02-2024	27-02-2024