 Politécnico da Guarda Escola Superior de Educação, Comunicação e Desporto	SUBJECT DESCRIPTION	MODELO PED.007.02
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<i>Course</i>	Master Degree in Sports Sciences		<i>Academic Year</i>	2021/2022	
<i>Course Unit</i>	Indoor Cycling		ECTS	3	
<i>Type Unit</i>	Mandatory				
<i>Year</i>	1º	<i>Semester</i>	2º	<i>Student Workload</i>	
<i>Professor</i>	Faber Martins		<i>Total</i>	135	<i>Contact</i> 30
<i>Area Coordinator</i>	Carolina Vila-Chã				

Planned SD

1. LEARNING OUTCOMES

This curricular unit transversally covers the technical, methodological and scientific aspects of sports training. It consists of a specific training curricular unit, oriented within the scope of activities carried out in gyms whose fundamental objective is the construction of training sessions on stationary bicycles based on the simulation of different forms of terrain and effort intensities. This course focuses on scientific and methodological theories applied to the study of road cycling, the biomechanical references inherent to the sport, the assumptions of effort intensity indicators, in particular heart rate monitoring and the techniques and procedures for adjusting the equipment, added the laws of biological adaptation and structural principles of sports training.

2. PROGRAM CONTENT

2.1 Indoor Cycling Concept

2.2 Structuring an indoor cycling session

2.3 Preparation of the equipment:

- Key Settings
- Security norms
- Material

2.4 Structuring the training process in 3 levels:

2.4.1 Level Contents:

- Technical
- Cadence (frequency)
- Intensity of effort
- Duration of effort

2.4.2 Contact Level:

- Communication

- Motivation

2.4.3 Level Connection

- integration

2.5 Determinants Techniques Indoor Cycling

2.5.1 Positioning:

2.5.1.1 straight sitting

2.5.1.2 straight standing

2.5.1.3 combos (alternate)

2.5.1.4 sitting uphill

2.5.1.5 standing uphill

2.5.1.6 combos (alternate)

2.5.1.7 Sprints

2.5.2 Cadence (RPM)

- Frequency Concept

- Physiological responses of different cadences adopted

- Recommendations of cadences for different terrains and objectives

2.5.3 Intensity effort

2.5.3.1 intensity monitoring by controlling the heart rate (BPM)

- Advantages and disadvantages

- intervening factors

- Definition intensities using the determination of training target zones

- Determination of different training target zones

2.5.3.2 Subjective Perception Scale Effort - BORG

2.6 Applied Anatomy to Cycling

2.7 Biomechanics Applied to Cycling

2.8 Applied Physiology to Cycling

2.9 Construction of the musical repertoire for indoor cycling sessions

2.9.1 Recommendations for cadence settings in the different steps session

2.9.2 Music and intensity

2.10 Communication


2.10.1 verbal, nonverbal, posture, eye contact, tone, dimensional communication

3.COHERENCE BETWEEN PROGRAMME AND OBJECTIVES

The curriculum aims to build the knowledge base that allows the student to understand the teaching-learning process of indoor cycling mode in particular as regards: i) general aspects and the guiding principles of indoor cycling; ii) To know the acute and chronic organic changes that occur in the year; iii) To understand the occurrence of these changes in the context of theories that seek to explain the adaptations; iv) describe the prevalence of metabolism that is being used because of a certain intensity exercise; v) To understand the fundamental concepts inherent in anatomy, physiology and biomechanics of exercise applied to indoor cycling session; vi) Develop a training session respecting the conditions of stress intensity, in addition to coordination requested by the musical repertoire and the particular sign requirement.

4.MAIN BIBLIOGRAPHY

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- Chavarrias, M., Carlos-Vivas, J., Collado-Mateo, D., Pérez-Gomez, J. (2019). Health Benefits of Indoor Cycling: A Systematic Review. *Medicine*, 55, 452-466.
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- Khammassi, M., Miguel, M., Julian, V., Cardenoux, C., Thivel, D. (2020). Psycho-Physiological Responses to a 4-Month High-Intensity Interval Training-Centered Multidisciplinary Weight-Loss Intervention in Adolescents with Obesity. *Journal of Obesity & Metabolic Syndrome*, 29, 292-302.
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Rebecca, B., Foster, C., Wright, G., Porcari, J. (2008). Physiologic Responses during Indoor Cycling. *Journal of Strength & Conditioning Research*: July (22) - Issue 4, 1236-1241.

Sage, Jennifer (2012). Master Class – How to create profiles for your indoor cycling classes. Indoor Cycling Association. 2nd ed. Human Knetics.


Silva, R. A., Oliveira, H.B. (2002). Prevention of injuries in indoor cycling – a methodological proposal. *Revista Brasileira de Ciência e Movimento*, V.10, nº4: 07 - 18

5.TEACHING METHODOLOGIES (INCLUDING ASSESSMENT)

In line with the convergence of course, look up will optimize the approaches of the contentes in order to focus on the individual research work, active and critical participation of students. The Organization includes contact classes added hours of autonomous work throughout the semester. Theoretical classes take on a character (systematization of information on knowledge of the different modules) Theoretical and Practical (theoretical information given in the course of practical activity) and practical (analysis and discussion of specific problema situations). The evaluation process of continuous order, includes Performance Motor Tasks (60%) characterized by performing the technical gestures and / or behaviors engines in exercise situations with pre-determined goals and Cognitive Performance Tasks (40%) measured by a theoretical evaluation covering the contents of the respective modules taught during the semester.

6.EVIDENCE OF THE TEACHING METHODOLOGIES COHERENCE WITH THE COURSE UNITS INTENDED LEARNING OUTCOMES

The teaching methodologies aim at satisfying the issues or the skills to be developed considering the subject program. The lectures permit compliance with the transmission of content that allow students to know, understand and master the more general aspects, the guiding principles and key factors inherent in sport and their respective assumptions underlying the reference anatomical, physiological and biomechanical as well as concepts applied to sports training. Search lessons the, discussion, descriptive synthesis and the development of research provide students with the analysis, interpretation, development and reflection on the theoretical knowledge imparted translated the original work they do

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throughout the semester. The practical character classes embody the acquired theoretical and allow the development of activities to strengthen the understanding and assimilation of content. Evaluation methodologies accompany the teaching / learning in relation to the type of competence and the objectives of the course. The skills of the knowledge and understanding order are essentially evaluated by conducting written tests and practical *presentation of the class sessions*.

7.ATTENDANCE: According to the ESECD Regulation.

8.CONTACTS: fabermartins@ipg.pt

28th of June of 2021