

## COURSE UNIT INFORMATION SHEET (*SYLLABUS*)

2020/2021

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| <b>Name</b><br><br>PSYCHOPHYSIOLOGY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Teaching staff</b><br>(Also indicate the Professor in charge)<br><br>Isabel Barahona Simões da Fonseca                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>ECTS</b><br><br>6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Functioning</b><br><br>Theoretical and Practical Classes, 2 <sup>nd</sup> Semester                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <ul style="list-style-type: none"> <li>• Theoretical preparation and acquisition of knowledge about the paradigms, methods and techniques of Human Psychophysiology essential for the preparation of future psychologists in the diverse domains of application.</li> <li>• Acquiring and training of inferential reasoning skills, of critical and epistemic reflection of scientific papers. Interpretation of empirical data that involve the relationship between physiological and psychological variables.</li> <li>• Introducing knowledge of the main indicators and techniques of psychophysiological measures and their physiological bases, procedures for recording, signal processing and interpretation.</li> <li>• The objectives are broad and aim the acquisition of knowledge about the psychophysiological correlates of the main processes studied in Psychology, with emphasis on cognition, emotional and affective processes, memory, attention, language and applications in the psychopathological clinic and intervention methods by biofeedback.</li> <li>• Introduction to experimental planning and laboratory practice techniques of monitoring physiological activity through the EEG and ERPs.</li> </ul> |
| <b>Skills to be developed</b><br><br>Understand the epistemic problems and exigence in experimental planning of an integration between physiological and psychological data at the level empirical studies. The emphasis will be on experimental planning, data analysis and theoretical inferences and also on the applications – clinical and other domains.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

- To be able to interpret the relationship between the variables of the psychological domain and those of the physiological domain, taking into account the nature of the psychological characteristics of the process under study, the physiological system, and the technical recording.
- Reference to clinical observation, diagnosis, prognosis and treatment in order to introduce students to the clinical applications.

**Prerequisites** (precedences) \*

Not applicable

**Contents**

- 1 Introduction of fundamental physiological concepts about the structure and function of the Nervous System. The central and peripheral body systems.
- 2 Paradigms, methods and techniques of Psychophysiology research. The reflection about the relationship between physiological and psychological variables. Invasive and non-invasive physiological recording systems.
- 3 Psychophysiological indicators (central and peripheral with reference to physiological systems and mechanisms of physiological response generation) of the main psychological functions: attention, perception, motivation, memory, emotion, language. The contributions of combining technics such as MRIf, EEG, TMS and Genetics.
- 4 Introduction to the clinical applications of Psychophysiology in biofeedback training. Scientific criteria and methods of evaluation of these clinical applications.
- 5 Introduction of the psychophysiological studies of psychopathological disorders and neuropsychological syndromes.

**Bibliography**

- Andreassi, J. L. (2008). *Psychophysiology, human behavior and physiological response 5th Ed.* Routledge.
- Caccioppo, J. T., Tassinary, L. G. & Bernston, G. G. (2017). *The Handbook of Psychophysiology 4th.* Cambridge: U. P.
- Kandel, E.R., Schwartz, J.H., Jessell, T. M., Siegelbaum S. A., A. J. Hudspeth (2012). *Principles of Neural Science and Behaviour 5 th.* New York: MCGRAW HILL.
- Schwartz, M. S. & Andrasik, F. (2016). *Biofeedback a practitioner's guide.* New York: Guilford Press.

**Teaching methods**

- Theoretical lecture for the course and practical-theoretical classes where in small groups students will present and debate the work and also, when possible, practical laboratory sessions for observing research methods of Nervous System activity (central measures such as EEG and ERPs).

In case of a state of emergency classes will continue through the zoom platform according to the initial agenda.

#### **Evaluation Regimes** (General and/or Alternative)

Group of three students must develop and present an oral and written work on one of the themes of the program. This group work will have a weight of 10% in the final classification. The evaluation will also be carried out throughout the semester by two individual works, written, one on the contents of the Psychophysiology paradigms and the other on an optional theme, chosen from the other contents of the program. Each of these two individual works will have a weight of 45% in the final classification.

This form of assessment is suitable also for distance learning. In the case of a State of Emergency, classes and work will occur as usual at the time scheduled through the UL Zoom platform.

#### **Evaluation Elements**

(Dates due, weights, minimum required grades)

Oral and written work made by a group of three students with weight of 10% of the final classification and two individual written works with the total weight of 90% of the final classification.

#### **Rules for grade improvement**

General rules

#### **Rules for students having previously failed the course unit \***

General rules

#### **Requirements on attendance and punctuality**

General rules

#### **Rules for special students**

(workers, elite athletes, student body leaders, military, fathers/mothers, with special needs) \*

General rules

### Language of instruction

Portuguese

### Disciplinary violations and penalties

According to the Evaluation of Learning Regulation of the Faculty of Psychology of the University of Lisbon, the following behaviors are considered as disciplinary offenses subject to disciplinary action:

- a) To use or attempt to use materials, information, notes, study resources or other objects and equipment not authorized in academic exercises;
- b) To help or try to help a colleague in committing a disciplinary offense;
- c) To submit the same written work for evaluation in different course units without permission from the instructors, even if with minor changes;
- d) To present someone else's work as one's own;
- e) To forge, or change without permission from the author, any information or citation in an academic work;
- f) To interfere, change or attempt to change grades;
- g) To try to prevent or interfere with the proper functioning of classes, research or other academic activities;
- h) To make false accusations regarding instructors, governance bodies, other students or non-teaching staff of the FPUL;
- i) To falsify signatures in attendance sheets, documents relating to evaluation elements or in any official document relating to an academic process or status.

Disciplinary offenses committed in any assessment element can lead to its annulment, and must be reported to the Pedagogical Council or, considering their gravity and repetition, may lead to other penalties, to be determined by the Rector of the University of Lisbon.

\* If applicable