



COURSE UNIT INFORMATION SHEET (*SYLLABUS*)

2023/2024

Study Programme Undergraduate Degree in Psychology

Name NEUROPSYCHOLOGY
Teaching staff Doutora Isabel Barahona da Fonseca (Professor in charge)
ECTS 6
Functioning Expositive theoretical class and practical classes.
Learning goals <p>To develop a theoretical epistemic thinking about the application of neuropsychological principles and theories to the interpretation and study of human psychological processes.</p> <p>To acquire basic, fundamental knowledge about behavior neuropsychology essential for a psychologist.</p> <p>To examine neural, sensory, motor, and neurochemical structures and functions in relation to emotions, motivation, learning and memory, perception, regulation and influences of brain rhythms namely circadian cycles, attention, language. Neuropsychological syndromes, evaluation, neuro-rehabilitation and remediation treatments are mentioned aiming an integrate knowledge at a preclinical level.</p>
Skills to be developed Acquisition of theoretical knowledge that will allow a capacity for considering the integration between psychological and physiological domains and prepare for practical applications in the diverse fields of Neuropsychology.
Prerequisites (precedences) * Not applicable



Contents

Basic concepts and principles of Neuropsychology: experimental and clinical paradigms, study methods, and theoretical and clinical domains of Neuropsychology.

I. The structure and function of Nervous System (NS).

- The neuron, neuronal functioning as a signaling unit of the NS. Nerve cells, neural circuitry and behavior.

Neurotransmission, the first, second and third transmission messengers' systems.

Central Nervous System organization. Central NS and the somatic and the autonomic systems. The Neuroendocrine system. Relations between NS and the Immune System.

II. Neuropsychology of the main functional systems and neuropsychological syndromes related.

– Brain control of behavior: movement. The Prefrontal Cortex and the regulation of behavior.

- The autonomic nervous system.

- The somatic sensory system.

- The auditory system.

- The visual system.

III. Neuropsychology of psychological functions and clinical syndromes.

- Neuropsychology of Memory.

- Synaptic Plasticity- neuronal circuitry, synaptic and molecular processes related to memory formation.

- Rhythms of the brain. Circadian rhythms.

- Neuropsychology of attention.

- Neuropsychology of emotion.

- Neuropsychology of motivation.

- Neuropsychology of language.

IV. Clinical applications of Neuropsychology – introduction of psychological assessment in the context of diagnose, management and rehabilitation of neuropsychological dysfunctions.

Bibliography

The textbooks will be complemented by other references that will be indicated in the classes.

Bear, M. F., Connors, B. W., Paradiso, M. A. (2016). *Neurociência : Desvendando o Sistema Nervoso* (4ª Ed.), Artmed Ed.

Gazzaniga, M. S., Ivry, R. B., Mangun, G. (2019). *Cognitive Neuroscience. The biology of mind* (5th Ed.), W. W. Norton.

Kandel, E.R., Koester, J.D., Mack, S. H., Siegelbaum, S. A. (2021). *Principles of Neural Science* (6th Ed.), Mcgraw Hill.

Teaching methods

Expositive in theoretical classes and practical classes where student's work will be developed.



Evaluation Regimes (General and/or Alternative)

General

Evaluation Elements

(Dates due, weights, minimum required grades)

The evaluation will be carried out through a multiple choice exam about all contents of the theoretical classes (70% of the classification) and the oral and written presentation of (30% of the classification) of a scientific article by a group of students. The participation in studies as a volunteer will receive the classification of 1 added to the individual exam classification (which, in this case, will have the maximum value of 19).

Rules for grade improvement

Not applicable.

Rules for students having previously failed the course unit *

Not applicable.

Requirements on attendance and punctuality

Not applicable.

Rules for special students

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

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