COURSE DATA

DATA SUBJECT

Code: 33296
Name: Foundations of biopsychology
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1319 - Degree in Psychology	Facultat de Psicologia i Logopèdia	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1319 - Degree in Psychology	Biology	BASIC

COORDINATION

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SUMMARY

Foundations of Psychobiology is a fundamental course that covers three major areas: behavioral genetics, neurophysiology, and neuroanatomy. In this course, students acquire the necessary knowledge to pursue subsequent courses in the field of Psychobiology. It is clearly connected to the courses Physiological Psychology I and II, where knowledge of neuroanatomy and neurophysiology is required to properly understand these subjects. Similarly, it is strongly connected to Psychopharmacology and Psychoendocrinology, where students need to have acquired knowledge of neurotransmission and hormonal systems. Lastly, the three elective courses in the Psychobiology knowledge area also require the basic knowledge and competencies developed in Foundations of Psychobiology. Additionally, students acquire knowledge and skills that will be useful in other courses within the Psychology degree, as it provides the biological basis for processes studied in other areas (motivation, learning, language, clinical, etc.).

Although the fundamental nature of the course makes it difficult to establish a direct connection with professional fields, the course Foundations of Psychobiology is essential for the acquisition of a scientific thinking style indispensable for the correct development of professional activities in various fields such as clinical psychology, developmental psychology, social intervention, or research activities.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

There are no specified enrollment restrictions on other subjects of the curriculum.

COMPETENCES / LEARNING OUTCOMES

1319 - Degree in Psychology

Be able to describe and measure variables (personality, intelligence, attitudes, aptitudes, etc.) and cognitive, emotional, psychobiological and behavioural processes.

Be able to plan the assessment of programmes and interventions.

Know and comply with professional ethics of Psychology.

Know how to analyse and interpret the results of assessment.

Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.

Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.

Understand the biological foundations of human behaviour and psychological functions.

DESCRIPTION OF CONTENTS

1. Introduction to Biopsychology

1. Introduction
Historic frame of Biopsychology : past and present. Method and techniques of research in Biopsychology . A biological explanation of the human mind.

2. Genetics of behavior, Evolution and Ethology

2. Genetics of behavior
Cellular and molecular bases of Genetics. Types of genetic transmission. Mendelian Genetics. Polygenic inheritance. Gene-environment interaction.

3. Evolution

History of theories of evolution. Theory of evolution by natural selection. Theory of evolution at present. Psychology and theory of evolution.

4. Ethology
Definition and history. Ethology and Comparative Psychology. Function of behavior.

3. Cells of the nervous system: estructure and function

5. Cells of the nervous system
Hierarchical organization of life. Control systems. Anatomy of neurons. Glial cells. Histological techniques for the study of the central nervous system.

6. Bases of information processing in nervous cells
Resting membrane potential. Action potential: ionic basis, generation, conduction. Types of nerve fibers.

4. Chemical communication

7. Neuronal communication
Structure and types of synapses. Synaptic transmission. Types of receptors. Postsynaptic potentials.

8. Neurotransmission systems
Chemical messengers: neurotransmitters and neuromodulators. Types of neurotransmitters. Acetylcholine. Dopamine. Adrenaline. Noradrenalin. Serotonin. GABA. Glutamate. Neuropeptides. Other neurotrans-mitters. Mechanisms of action of psychotropic medications.

5. Nervous System anatomy

9. General layout of the human nervous system
Directions in the vertebrate nervous system. Protections of the central nervous system: meninges, ventricles, cerebrospinal fluid, and blood-brain barrier. Cerebrovascular system.

10. Anatomical and functional organization of the nervous system
Macroscopic anatomy of the central and peripheral nervous system. Spinal cord. Myelencephalon. Metencephalon. Mesencephalon. Diencephalon. Telencephalon.

11. Autonomic nervous system Sympathetic nervous system. Parasympathetic nervous system. Similarities and differences between them. Vegetative functions.

12. Relationship of nervous system with other control systems
Anatomy and messengers of the endocrine system. Anatomy and messengers of the immune system. Relationship among the nervous, endocrine and immune systems.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours

Theoretical and practical classes	60,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	30,00
Independent study and work	30,00
Preparation of lessons	15,00
Preparation for assessment activities	15,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

Active and participatory methodology, integrating various instructional approaches to promote meaningful learning of the subject matter and the development of course-specific competences.

(1) Theoretical-practical classes supported by audiovisual materials, links to relevant websites, textbooks, scientific articles, and other readings and resources.
(2) Practical sessions in behavioral teaching labs, including anatomical models and the use of light microscopes.
(3) Scheduled group tutorials.
(4) Independent preparation of assignments, and the drafting and presentation of practice reports (individually and in groups).
(5) Formative and summative assessment.

EVALUATION

Assessment System

AS1- Exam

1. Theoretical Component: performance tests evaluating the level of theoretical knowledge acquired by the student, through a multiple-choice exam (50%). A minimum score of 4.5 out of 10 in this part is required in order to proceed with the grading of the practical component of the exam and to be able to calculate the average with the practical part.

2. Practical Component: performance tests evaluating the level of practical knowledge acquired by the student, through an exam involving problem-solving tasks similar to those addressed in face-to-face classes and neuroanatomy sheet identification (30%). To average with the theoretical part, a minimum score of 4.5 out of 10 is also required.

AS2- Continuous Assessment: Reports and Activities throughout the Course (20%)

Evaluation of assignments demonstrating that the student has developed knowledge, comprehension, and application of the course content. The activities included in SE2 are considered non-recoverable in the first call due to their experiential nature and the work dynamics involved.

Minimum requirements

To pass the course, it is necessary to reach 50% of the maximum score.

To pass AS1, the student must achieve a minimum final grade of 50%, calculated as a weighted average of the theoretical and practical components, provided the minimum requirements for both. If the student does not obtain a Pass in the first call, they must be re-evaluated in the second call.

To pass AS2, the student must obtain a minimum grade of 40%. If it is not achieved in the first call, the student must take an exam in the second call based on the practical content of the course.

Honors with distinction may be awarded to students who obtain a final grade of 9 or higher, based on ranking from highest to lowest. If the number of eligible students exceeds the available slots, an additional assignment or exam may be required to determine the final recipients.

WARNING:

(1) Evidence of copying or plagiarism in any of the assessable tasks will result in failure to pass the subject and in appropriate disciplinary action being taken. In fact, fraudulent practices will be dealt with according to what is determined by the Protocol of action against fraudulent practices at the University of Valencia (ACGUV 123/2020): https://www.uv.es/sgeneral/Protocols/C83sp.pdf

(2) GRADING SCHEME Grades shall be subject to the provisions of the University of Valencia Regulations on Marks (ACGUV 108/2017). (http://www.uv.es/graus/normatives/2017_108_Reglament_avaluacio_qualificacio.pdf).

(3) Review of and appeals against assessment results shall be subject to the Regulations for Appealing against Marks (ACGUV108/2017) .(http://www.uv.es/graus/normatives/2017_108_Reglament_avaluacio_qualificacio.pdf)

REFERENCES

BASIC REFERENCES

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SUPPLEMENTARY REFERENCES

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