

Degree programme	Type	Course
Biomedical Sciences	OP	4

Contact lecturer

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Group languages

You can consult this information at the [end](#) of the document.

Prerequisites

Have approved the subject of Estructure and Function of the Nervous System

Objectives

Know the basic concepts of ethology and the theoretical basis of different aspects of behavior in animals and humans

Know the neurobiological substrate that regulates behavior in animals and humans

Identify the keys of the behavior and understand the physiological mechanisms of regulation of the same

Train the student to understand the biological basis of behavioral alterations in animals and humans

Acquire the practical skills necessary to understand, program and carry out experiments related to the physiological regulation of behavior.

Learning outcomes

1. Work as part of a group with members of other professions, understanding their viewpoint and establishing a constructive collaboration.

2. Describe the organisation of the cerebral crust and the sensory and motor cortex.
3. Understand the behavioural and cognitive development of the human brain.
4. Understand the principal neuronal disorders.
5. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
6. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
7. Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
8. Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
9. Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
10. Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
11. Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
12. Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
13. Understand and critique scientific articles on biomedicine and society.
14. Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.

Contents

1. Foundations of behavioral research
2. Structure and function of the Nervous System
3. Methods and Strategies of Research
4. Neuroendocrine modulation of behavior
5. Sleep and Biological Rhythms
6. Motivation and reinforcement
7. Social behavior
9. Neurobiology of aggressive behavior
10. Reproductive and Parental Behavior

11. Learning and Memory

12. Higher cognitive functions.

Learning activities and methodology

Title	Hours	ECTS	Learning outcomes
Seminars	8	0.32	
study	60	2.4	
Laboratory Practices	12	0.48	
Problem resolution and analysis of data	28	1.12	
Theoretical classes	32	1.28	
Tutorial	5	0.2	

Theoretical classes:

Systematized exposition of the content of the subject, giving special relevance to the concepts related to the behavior (since they constitute the basis of what will be regulated), to the evolutionary flexibility of the behavior and to the biological mechanisms and areas of the nervous system involved in the regulation of normal and pathological behavior.

Seminars and problems:

Preparation and discussion of topics related to psychiatric pathologies

Practical classes:

Students will carry out various tasks related to learning, memory, biological rhythms, and emotions. The experimental results obtained will be analyzed and discussed during the practical session.

Use of AI:

In this course, the use of Artificial Intelligence (AI) technologies is permitted as an integral part of the work development, as long as the final result reflects a significant contribution from the student in terms of analysis and personal reflection. The student must clearly identify which parts were generated using such technology, specify the tools used, and include a critical reflection on how these tools influenced both the process and the final outcome of the activity. Lack of transparency in the use of AI will be considered academic dishonesty and may result in a penalty in the activity's grade or more serious sanctions in severe cases.

Tutorials:

They will be done in a personalized way in the teacher's office (hours to be arranged) or collectively at scheduled times. Their objectives are to clarify doubts and concepts.

Annotation: within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continuous assessment activities

Title	Weight	Hours	ECTS	Learning outcomes
Laboratory Practices	15%	0.5	0.02	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
Mid-term exam	35 %	2	0.08	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
Second mid-term	35 %	2	0.08	2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14
Seminars	15%	0.5	0.02	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

The evaluation will be based on theoretical exams (essay questions), seminars, and practical classes. Their contribution to the overall grade will be 70%, 15%, and 15% respectively. Theory, seminars, and practicals will be assessed separately. A minimum score of 4 is required in each part to pass the subject. There will be two partial exams for the theory, each of which must be passed independently with a minimum score of 4 for them to be averaged. In the final exam: (a) if a student takes one part of the subject, they must pass it independently of the grade obtained in the other part; (b) if the student takes the entire exam, the overall grade will be considered.

Attendance at practical sessions is mandatory. Students will receive a "Not Assessable" grade if their absence exceeds 20% of the scheduled sessions. To participate in the re-sit exams, students must have previously been assessed in a set of activities whose weight is equivalent to at least two-thirds of the total grade for the subject or module. Therefore, students will receive a "Not Assessable" grade if the assessment activities they have completed account for less than 67% of the final grade.

Practicals, seminars, and theory will be assessed separately.

The subject adheres to a single evaluation system, which will consist of an exam covering theory and seminars. Attendance at practicals is mandatory, and they will be assessed in the same way as in continuous assessment. The theory evaluation will consist of at least 5 essay questions, and the seminar evaluation will consist of one essay question. The theory exam contributes 70% of the total grade, and the seminar exam contributes 15%.

Any irregularity committed in an assessment activity (including academic fraud, plagiarism, or the improper use of AI, unless such use is explicitly authorized in the course guide) that may lead to a significant alteration of the assessment result will result in a grade of 0 for that assessment activity. If the course guide specifies that obtaining a minimum grade in that assessment activity is an essential requirement for passing the course, or if multiple irregularities occur in the assessment activities of the same course, the final grade for the course will be 0. In addition, disciplinary proceedings may be initiated against any student who commits any of these irregularities.

Bibliography

Eibl-Eibesfeldt I: Etología: introducción al estudio comparado del comportamiento, Ediciones Omega, Barcelona, 1979 (lecture book to understand ethology)

Carlson NR and Birkett MA: Physiology of Behavior, 12 ed., Pearson, 2017 (*)

Kalat JM: Biological Psychology, 10 ed., Cengage Learning, 2018 (*)

Breedlove SM, Watson NV, Rosenzweig MR: Biological Psychology: an introduction to behavioral, cognitive and clinical neuroscience, 10 ed., Sinauer Assoc., 2010

Squires LR et al: Fundamentals Neuroscience, Elsevier, 2013 (*).

Kandel ER et al: Principles of neural science, McGraw Hill, 2013 (*)

(*) Electronic access

Software

We do not use any software

Course groups and languages

The information provided is provisional until November 30. After this date, you will be able to consult the language of each group through this [link](#). To access the information, you will need to enter the course CODE