Universidad Zaragoza

Academic Year/course: 2021/22

31206 - Fundamentals of Neuroscience

Syllabus Information

Academic Year: 2021/22
Subject: 31206 - Fundamentals of Neuroscience
Faculty / School: 301 - Facultad de Ciencias Sociales y Humanas
Degree: 613 - Degree in Psychology
ECTS: 6.0
Year: 1
Semester: Second semester
Subject Type: Basic Education
Module:

1. General information

1.1. Aims of the course

The course of Fundamentals of Neuroscience is a basic subject that belongs to the subject Foundations of Behavioral Biology (Biology). It focuses on the principles of neuroscience, the mechanisms of neural plasticity, the neurobiological bases of perception, and the anatomical and functional principles of the limbic system, diencephalon, and the cerebral cortex.

1.2. Context and importance of this course in the degree

In the general description of the Degree in Psychology at the University of Zaragoza, it is indicated that the first objective is that "the student of Psychology has to achieve the scientific knowledge necessary to understand, interpret, analyze and explain the human behavior". Individuals are biopsychosocial beings, and therefore, we must integrate biological, psychological, and social factors to understand human behavior. Within this context, the subject of Fundamentals of Neuroscience contributes to the knowledge, understanding, and explanation of the biological factor of human behavior. In this subject, the student will have the opportunity to acquire the basic and necessary knowledge to understand, in later subjects, the brain mechanisms underlying human behavior, psychological processes, and disorders.

This subject is directly connected with the subjects Psychobiological Foundations, Biological Foundations II, and Neuropsychology.

1.3. Recommendations to take this course

It is recommended to have basic knowledge of biology acquired during the high school degree in health sciences and the subject Foundations of Psychobiological taken in the first semester. In addition, it is necessary to have basic computer skills. Furthermore, it is recommended that the student follow the study rhythm set in the face-to-face classes and attend them responsibly. Finally, it is essential to follow the course on the Moodle platform and, when necessary, communicate with the teacher via email, use the corporate email (NIA@unizar.es).

2. Learning goals

2.1. Competences

BASIC AND GENERAL

CG05-To demonstrate critical ability to make pertinent decisions

CB1-To possess and understand knowledge in an area of ??study that starts from the base of general secondary education and is at a level that, although supported by advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of your field of study.

CB2-To know how to apply their knowledge to their job professionally and possess the competencies that they usually demonstrate through the development and defense of arguments and solving problems in their area of ??study.

CB3-To be able to gather and interpret relevant data (usually within their study area) to make judgments that reflect relevant social, scientific, or ethical issues.

CB4-To transmit information, ideas, problems, and solutions to a specialized and non-specialized audience.

CB5-That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

TRANSVERSAL

CT01-To acquire an adequate understanding and oral and written expression of Spanish

CT04-To acquire essential notions of scientific thought

SPECIFIC

CE08-To use the different documentary sources in Psychology to show a command of the necessary strategies to access information and assess the necessity of document updating

CE09-To manage, analyze, and interpret data within the disciplinary knowledge frameworks typical of the different areas of Psychology.

2.2. Learning goals

To pass this course, the student must demonstrate the following results...

-To discriminate the field of study of Biopsychology and its disciplines; identifying research interests common to Psychology and Neurosciences.

-To identify and differentiate the main methods and techniques of Biopsychology.

-To interpret the results of applying methods and techniques in Biopsychology.

-To identify the location and functioning mechanisms of the main macro and microstructures of the nervous system relevant to the explanation of psychology behavior.

-To identify, differentiate and explain the relationship between the structural and functional elements of the nervous system and healthy and pathological behavior.

-To select the primary documentary sources of Biopsychology to complete and update their knowledge in Psychology.

-To discriminate and properly use the terminology of biopsychology in explaining behaviors.

2.3. Importance of learning goals

The training offered in this course aims for the student to know the principles of neuroscience, the mechanisms of neural plasticity, the neurobiological bases of perception, and the anatomical and functional principles of the limbic, diencephalon, and cerebral cortex.

All this knowledge will be the basis so that, in later subjects, students can understand the psychobiological mechanisms that underlie normal and pathological behavior, observable and unobservable.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The students will demonstrate that they have achieved the expected learning outcomes through the following activities:

Continuous work (grade from 0 to 10). The resulting grade may be derived from the completion of questionnaires, oral tests, practice reports, individual or group work, among other activities that will be determined on the Moodle platform. The grade will represent 100% of the final grade.

In any case, the student will have the right to a global evaluation on all the contents of the subject in which she will be able to opt for the highest grade.

Note: If, for health safety reasons, a change in teaching from face-to-face to an online system is required, the following modifications may be made in the evaluation of the subject:

Adaptations in the program (revision and adaptation of the contents of the subject)

Adaptations in the teaching methodology platform: The teaching methodology includes online classes and a forum for questions on the Moodle platform.

Adaptations in the evaluation: The same evaluation criteria established in the teaching guide. The test or tests may be carried out online on the Moodle platform. The student must have the following technological requirements: computer or similar device, and Internet connection.

If the students do not have the necessary technological means, they must inform the degree coordinator and the teaching staff responsible for the subject. The student who does not have the technological means will execute a global oral test when the physical match for the test is possible.

For more information, consult the Regulation of Learning Assessment Standards of the University of Zaragoza: http://www.unizar.es/sg/doc/6.1.Evaluaciondefinitivodia24_001.pdf.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives based on lectures and practice sessions.

The proposed activities imply that the student will have to work in order to reach some conclusions.

4.2. Learning tasks

1. Lectures
2. Practical activities of cases and problems
3. Seminars and workshops
4. Academic directed activities and self-study work
5. Submission of assignments
6. Tutorships
7. Evaluation

4.3. Syllabus

The course will address the following topics:

Topic 1. Neurosciences, methods and techniques.

Topic 2. Development and plasticity.

Topic 3. Neurosciences of the senses.

Topic 4. Circuits of movement.

Topic 5. The role of diencephalon in the sensory integration and behavior regulation.

Topic 6. The limbic system, main functions and relationships with other systems.

Topic 7. The importance of cortical function.

4.4. Course planning and calendar

The general planning of the course corresponds to the following student dedication:

Total hours: 150

Attendance hours, including assessment: 60 hours

Non-attendance hours of autonomous work: 90 hours

The schedule and key dates of the course can be found on the website of the Faculty of Social and Human Sciences (http://fcsh.unizar.es/) and in the Moodle platform (http://fyl.unizar.es, https://moodle2.unizar.es).

The schedule of the tutorships can be consulted in an updated way in the directory (https://directorio.unizar.es)

4.5. Bibliography and recommended resources

http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=31206