Universitat Autònoma de Barcelona

2021/2022

Physiological Psychology II

Code: 102546
ECTS Credits: 6

Degree	Type	Year	Semester
2502443 Psychology	OB	2	2

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: Yes
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Other comments on languages

Group 5 in English (classes and exam statement)

Teachers

Laura Aldavert Vera
Gemma Guillazo Blanch
Jordi Silvestre Soto
Marta Portero Tresserra
Carles Soriano Mas

Prerequisites

There are no prerequisites, but the knowledge acquired in the subjects of 1st year Fundamentals of Psychobiology I and II is assumed, as well as it is recommended to have taken Physiological Psychology I (2on year, 1st semester).

It is advisable to have knowledge of English.

Objectives and Contextualisation

The general objective of the subject is learn about the biological bases of sleep and waking, motivated behaviours, emotions, and learning and memory processes.
At the end of the course, students will be able to do the following.

1. Describe the neurobiological bases of sleep and waking, sleep functions and some disorders of sleep.
2. Explain the neurobiological bases and the functions of the reward system, and identify the neurobiological changes underlying addiction.

3. Describe the neural and hormonal control of different motivated behaviours such as ingestive behavior and sexual and parental behaviours.
4. Explain the neurobiological bases of emotions and their functions.
5. Describe the neurobiological bases of the learning and memory processes.

Competences

- Analyse scientific texts written in English.
- Develop critical thought and reasoning and be able to communicate them effectively, both in your own language and second or third languages.
- Develop strategies for autonomous learning.
- Identify, describe and relate the biology of human behaviour and psychological functions.
- Identify, describe and relate the structures and processes involved in basic psychological functions.
- Maintain a favourable attitude towards the permanent updating through critical evaluation of scientific documentation, taking into account its origin, situating it in an epistemological framework and identifying and contrasting its contributions in relation to the available disciplinary knowledge.
- Recognise the determinants and risk factors for health and also the interaction between people and their physical and social environment.
- 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.
- 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.
- Use different ICTs for different purposes.
- Work in a team.

Learning Outcomes

1. Analyse scientific texts written in English.
2. Analyse the influence of the determinant physical and social factors on neurobiology of mental processes for the purpose of understanding the bases of health psychology.
3. Describe the changes in the in sleep-wake rhythms in relation to changes in the underlying neurophysiological and neurohormonal mechanisms.
4. Describe the neuronal circuits, the neurophysiological, neurochemical and hormonal mechanisms in motivated behaviours.
5. Describe the neuronal circuits, the neurophysiological, neurochemical and hormonal mechanisms involved in emotions.
6. Describe the neuronal circuits, the neurophysiological, neurochemical and hormonal mechanisms involved in learning from memory.
7. Describe the neuronal circuits, the neurophysiological, neurochemical and hormonal mechanisms involved in the rhythms of sleep and wakefulness.
8. Develop critical thought and reasoning and be able to communicate them effectively, both in your own language and second or third languages.
9. Develop strategies for autonomous learning.
10. Evaluate the contributions of a psychobiological approach to advancing understanding of the rhythms of sleep and wakefulness.
11. Evaluate the contributions of a psychobiological approach to advancing understanding of the rhythms of the neurobiological basis of learning and memory.
12. Evaluate the contributions of a psychobiological approach to advancing understanding of the rhythms of the neurobiological basis of motivated behaviours (hunger, thirst, sexual and parental behaviour).
13. Evaluate the contributions of psychobiological approach to advancing understanding of neurobiological basis of emotion.
14. Evaluate the interrelationship between the neurobiological, educational and social approaches to explaining normal and pathological human behaviour.
15. Identify and recognise the mutual interaction between the physical and social environment of the person and the genetic, hormonal and neural factors that affect health.

16. Maintain a favourable attitude towards the permanent updating through critical evaluation of scientific documentation, taking into account its origin, situating it in an epistemological framework and identifying and contrasting its contributions in relation to the available disciplinary knowledge.
17. Relate neuroanatomical, neurophysiological and neurohormonal alterations with disorders of sleep-wakefulness rhythms.
18. Relate neuroanatomical, neurophysiological and neurohormonal alterations with motivated behavioural disorders.
19. Relate neuroanatomical, neurophysiological, neurohormonal, and genetic alterations with emotional disorders.
20. Relate neuroanatomical, neurophysiological, neurohormonal, and genetic alterations with learning and memory disorders.
21. Relate sleep-wake rhythms to their neuronal bases and neurophysiological, hormonal and genetic underlying mechanisms.
22. 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.
23. 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.
24. Use different ICTs for different purposes.
25. Work in a team.

Content

Unit 1. SLEEP AND WAKING

1. Circadian rhythms

2. Behavioural and physiological characteristics of sleep and waking

3. Neural mechanisms

4. Functions of sleep

Unit 2. REWARD

1. Motivational systems

2. Neural mechanisms of reward systems

3. Addiction

Unit 3. INGESTIVE BEHAVIOUR

1. Digestion and metabolism

2. Peripheral regulation of mechanisms of eating

3. Neural control of eating

4. Thirst

Unit 4. SEXUAL AND PARENTAL BEHAVIOURS

1. Sexual hormones: organizational and activational effects

2. Pheromones

3. Neural control of sexual behaviour

4. Parental behaviour

Unit 5. EMOTION

1. Nature of emotions and feelings

2. Functions of emotions

3. Neural control of emotions

Unit 6. LEARNING AND MEMORY

1. Nature of learning and memory

2. Synaptic plasticity

3. Implicit learning and memory

4. Explicit learning and memory

5. Working memory

Methodology

DIRECTED ACTIVITY (30%)

a) Master Classes (WHOLE GROUP, 11 weeks).
• Master classes with ICT support and questions for debate.
• Practical exercises and problem solving.
• Viewing and discussing short videos.

b) Seminars (PAUL, 4 sessions).
• Development of cooperative team work.
• Reading of papers and other texts.
• Practical exercises and self-evaluation.
• Problem solving and debates.
• Presentation and discussion of cooperative team work.

c) Workshops (PLAB, 2 sessions).
• Evaluation of sleep records and comprehensive reading of somnigrams.
• Small-group exercises on learning and memory.

SUPERVISED ACTIVITY (5%)
Tutorials. Online and one-to-one.
• Correction and supervision of the key questions of the syllabus.
• Reflections on readings.
• Clarifying doubts.
• Individualized study strategies.

AUTONOMOUS ACTIVITY (60%)
• Documentation.
• Comprehensive reading of materials (books, scientific papers, outreach articles, webs).
• Study of basic concepts of the subject (conceptual maps, synthesis).
• Team project to create an oral presentation and discussion.
• Exercises and activities for continuous evaluation and self-evaluation.
• Regular participation in communication forums, and other spaces of the Moodle platform, coordinated by the teacher.

ASSESSMENT ACTIVITY (5%)
• Individual oral and/or written tests (multiple-choice, open questions and/or practical exercises).
• Oral presentation / debateand written abstract of cooperative team work.

• Tasks and activities (carried out in class or at home).

N.B. The proposed teaching and assessment methodologies may experience some modifications as a result of the restrictions on face-to-face learning imposed by the health authorities. The teaching staff will use the Moodle classroom or the usual communication channel to specify whether the different directed and assessment activities are to be carried out on site or online, as instructed by the Faculty.

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.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes with ICT support	33	1.32	2, 7, 6, 4, 5, 15, 18, 17, 20, 19, 14
Seminars (8h) and Workshops (4h)	12	0.48	1, 7, 6, 4, 5, 9, 8, 23, 18, 17, 20, 19, 25, 24
Type: Supervised			
Tutorials. Online and/or one-to-one	8	0.32	9, 16, 25, 24
Type: Autonomous			
Comprehensive reading of materials (books, scientific papers, outreach articles, webs)	20	0.8	1, 7, 6, 4, 5, 3, 9, 18, 17, 20, 19, 24, 13, 11, 12, 10
Documentation	11	0.44	1, 9, 24
Exercises and activities	20	0.8	2, 7, 6, 4, 5, 15, 23, 18, 17, 20, 19, 24, 14
Study of basic concepts of the subject (conceptual maps, synthesis)	30	1.2	2, 7, 6, 4, 5, 15, 14, 13, 11, 12, 10
Team project to create an oral presentation and discussion	12	0.48	1, 9, 8, 16, 22, 25, 24

Assessment

The evaluation of the subject is based on a continuous assessment through different tests and activities in which the students have to demonstrate that they have achieved the corresponding competences and learning results. It consists of 4 learning evidences:
1. EV1. Learning Evidence 1 (compulsory). Written or oral individual test (multiple-option, development and/or short questions). Topics of master, seminar and workshop classes on Units 1, 2 and 3 (40% of final grade; first assessment period).
2. EV2. Learning Evidence 2 (compulsory). Written or oral individual test (multiple-option, development and/or short questions). Topics of master, seminar and workshop classes on Units 4, 5 and 6 (40% of final grade; second assessment period).
3. EV3. Learning Evidence 3 (optional, seminars). Teamwork: Short oral presentation, discussion, and written abstract (20% of final grade).
4. EV4. Learning Evidence 4 (optional): Exercises and tasks, carried out in class or at home (5% of final grade).

The evaluation criteria will be the following:

a) Provision of compulsory learning evidences, EV1 and EV2.

b) Students providing learning evidences with a weight equal to or greater than 40% will be considered evaluable.

c) The final grade will be obtained from the weighted average of all the assessment activities carried out.

d) The subject will be passed with a weighted average (of all the evidences provided) equal to or greater than 5 points out of 10, with a minimum of 3.5 points (on a scale of 0 to 10) in each of the 2 compulsory evidences (EV1 and EV2). If the established requirements are not fulfilled, the highest grade that may be included in the academic record is 4.5 points.

e) Only those students who have completed the compulsory evidences (EV1 and EV2) but have obtained a continuous assessment grade (EV1 + EV2 + EV3 + EV4) of less than 5 points and equal to or greater than 3.5 points out of 10can opt for the reassessment test. Resit will consist of the repetition of one of the compulsory learning evidences (usually the lower graded one) according to the teacher's criteria. The criterion to pass the reassessment will be the same as for section d, by replacing the grade of the reassessed evidence. Thus, a minimum score of 3.5 in the evidence to be reassessed (EV1 or EV2) must be obtained in order to be able to pass the subject (overall grade greater than 5). The highest possible grade will be 7 out of 10.

f) Students of second or subsequent enrolments may choose, before the date specified at the beginning of the course, to follow the continuous assessment or take an integrative test, which will consist of a written test with questions on the whole subject, with no option to be reassessed.

g) In groups 1, 2, 3 and 4 the statement of the exams will be in Catalan and in English in group 5. As indicated in the document of the Faculty of Psychology on translation criteria for assessment tests, can request that the exam be translated into Spanish as long as, in a justified manner, it is formally and in writing addressed to the coordination before week 4 of the semester.

Link to the Evaluation Guidelines and to the Translation Criteria for Assessment Test of the Faculty of Psychology: https://www.uab.cat/web/estudiar/graus/graus/avaluacions-1345722525858.html

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
EV1. Written or oral individual test (multiple-option, open question and/or short questions)	40%	2	0.08	2, 1, 7, 4, 3, 9, 8, 15, 21, 18, 17, 14, 12, 10
EV2. Written or oral individual test (multiple-option, development and/or short questions)	40%	2	0.08	2, 1, 6, 4, 5, 9, 8, 15, 18, 20, 19, 14, 13, 11, 12
EV3 (Optional). Teamwork: Short oral presentation, discussion, and written abstract	20%	0	0	2, 1, 7, 6, 4, 5, 3, 9, 8, 15, 16, 22, 23, 21, 18, 17, 20, 19, 25, 24, 14, 13, 11, 12, 10
EV4 (Optional). Exercises and tasks, carried out in class or at home	5%	0	0	1, 9, 16, 23, 24, 13, 11, 12, 10

Bibliography

- Bear, Mark F.; Connors Barry W.; Paradiso, Michael A. (2016) Neuroscience: Exploring the brain (4th ed) Philadelphia: Wolters Kluwer.
- Carlson Neil R.; Birkett, Melissa A. (2017). Physiology of Behavior (12 edition). Madrid: Pearson (versió online: https://ebookcentral.proquest.com/lib/uab/reader.action?docID=5186462)

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Software

None specific