Guía docente de la asignatura

Neurociencia Cognitiva

Fecha última actualización: 20/07/2021
Fecha de aprobación por la Comisión Académica: 20/07/2021

Máster	Máster Universitario en Neurociencia Cognitiva y del Comportamiento
MÓDULO	Neurociencia Cognitiva y del Comportamiento
RAMA	Ciencias de la Salud
CENTRO RESPONSABLE DEL TÍTULO	Escuela Internacional de Posgrado

Semestre	Segundo	**Créditos**	4	**Tipo**	Optativa	**Tipo de enseñanza**	Presencial

PRERREQUISITOS Y/O RECOMENDACIONES

All classes and readings would take place in English.

Basic knowledge about cognitive processes and experimental design in Psychology and Neuroscience is required.

BREVE DESCRIPCIÓN DE CONTENIDOS (Según memoria de verificación del Máster)

The course begins with an introduction to Cognitive Neuroscience.

The treatment of research methods focuses on the use of functional magnetic resonance imaging, magnetoencephalography and electroencephalography, and techniques for disrupting / stimulating brain activity. Analysis strategies cover analysis of patterns, functional connectivity, and brain rhythms.

The themes of the research articles are chosen to represent different areas of study and techniques within Cognitive Neuroscience.

COMPETENCIAS

COMPETENCIAS BÁSICAS

- CB6 - Poseer y comprender conocimientos que aporten una base u oportunidad de ser originales en desarrollo y/o aplicación de ideas, a menudo en un contexto de investigación.
- CB7 - Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio.
- CB8 - Que los estudiantes sean capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios.
- CB9 - Que los estudiantes sepan comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades.
- CB10 - Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.

RESULTADOS DE APRENDIZAJE (Objetivos)

The student will understand:

• The relation between cognitive functions and their underlying brain mechanisms.

The student will be able to:

• Read and understand articles from the main scientific journals in the field.

• Prepare a summary / reflection / questions of at least one article corresponding to each session of the course.

• Present at least one topic of the program in public and answer questions.

PROGRAMA DE CONTENIDOS TEÓRICOS Y PRÁCTICOS

TEÓRICO

Introduction and organization of the course

Inferences, statistical approaches and replicability in Cognitive Neuroscience

Techniques for recording and stimulating brain activity and data analysis strategies

Structural and functional organization of the brain

Representation of information

Predictive coding

Emotion

Memory

Attentional selection

Cognitive control

Intelligence

Consciousness

Decision making and will

Neurofeedback

[This list could be partially altered depending on the new articles that appear in the discipline]

PRÁCTICO

Reading and discussion of scientific articles. Scientific outreach activities.

BIBLIOGRAFÍA

BIBLIOGRAFÍA FUNDAMENTAL

• Cognitive Neuroscience: The Biology of Mind (Fourth Edition). Gazzaniga, M.S Ivry, R.B and Mangun, G.M. New York: Norton & Company, 2014.

• The Cognitive Neurosciences (Sixth Edition). Poeppel, D., Mangun, G. M., and Gazzaniga, M.S. (Eds.) New York: MIT Press, 2020

BIBLIOGRAFÍA COMPLEMENTARIA

• Functional Magnetic Resonance Imaging (Third Edition). Huettel, S.A Song, A.W McCarthy, G. Sunderland, Ma. USA: Sinauer Associates, Inc. 2014.

• Rhythms of the Brain. György Buzsäki. New York: Oxford University Press. 2006.

• Tooby, J., & Cosmides, L. (2000) Toward mapping the evolved functional organization of mind and brain. En M. S. Gazzaniga (Ed.) The New Cognitive Neurosciences. Bradford Books, MIT Press. 1167-1178

• Tomasello, M., Carpenter, M., Call, J., Behne, T. And Moll, H. (2005) Understanding and sharing intentions: The origins of cultural cognition. Behavioral and Brain Sciences 28, 675-735.

• Marcel Mesulam, M. (1998) From sensation to cognition. Brain, 121, 1023-1052.

• Principles of Frontal Lobe Function. (Second Edition). Stuss, D.T. and Knight, R.T. New York: Oxford University Press. 2013.

ENLACES RECOMENDADOS

• http://www.med.harvard.edu/aanlib/home.html

• https://bigbrain.loris.ca/main.php

• http://fcon_1000.projects.nitrc.org/

• http://practicalfmri.blogspot.com.es/

•https://www.ted.com/talks

EVALUACIÓN (instrumentos de evaluación, criterios de evaluación y porcentaje sobre la calificación final)

EVALUACIÓN ORDINARIA

"Article 17 of the UGR Assessment Policy and Regulations establishes that the ordinary assessment session (convocatoria ordinaria) will preferably be based on the continuous assessment of students, except for those who have been granted the right to a single final assessment (evaluación única final), which is an assessment method that only takes a final exam into account."

• Written tests (open questions and critical essays) (35%)

• Oral presentations (25%)

• Contributions to class discussions and student attitude (20%)

• Elaboration of questions about the contents of the subject (20%)

EVALUACIÓN EXTRAORDINARIA

Article 19 of the UGR Assessment Policy and Regulationsestablishes that students who have not passed a course in the ordinary assessment session (convocatoria ordinaria) will have access to an extraordinary assessment session (convocatoria extraordinaria). All students may take part in this extraordinary assessment session, regardless of whether or not they have followed continuous assessment activities. In this way, students who have not carried out continuous assessment activities will have the opportunity to obtain 100% of the grade with a written exam ((open questions and critical essays) covering the entire subject of the course. The material will be available on the PRADO platform. This exam will be done online, using the UGR PRADO platform.

EVALUACIÓN ÚNICA FINAL

Article 8 of the UGR Assessment Policy and Regulationsestablishes that students who are unable to follow continuous assessment methods due to justifiable reasons shall have recourse to a single final assessment (evaluación única final), which is an assessment method that only takes a final exam into account.

In order to opt for a single final assessment (evaluación única final), students must send a request, using the corresponding online procedure, to the coordinator of the master's programme, in the first two weeks of the course or in the two weeks following their enrolment (if the enrolment has taken place after the classes have already begun). The coordinator will communicate this information to the relevant teaching staff members, citing and verifying the reasons why the student is unable to follow the continuous assessment system.

The evaluation will consist of a written exam (open questions and critical essays) covering the entire subject of the course. The material will be available on the PRADO platform. This exam will be done online, using the UGR PRADO platform.

INFORMACIÓN ADICIONAL

The teaching methodology and evaluation will be adapted to students with specific needs (NEAE), in accordance with Article 11 of the Regulations for the evaluation and qualification of students of the University of Granada, published in the Official Gazette of the University of Granada, nº 112, November 9, 2016.