COURSE DATA

DATA SUBJECT

Code: 42466
Name: Neurobiology of drug dependence
Cycle: Master's Degree
ECTS Credits: 15
Academic year: 2025-26

STUDY (S)

Degree	Center	Acad. year	Period
2225 - Master's Degree in Research, Treatment and Associated Pathologies in Drug A	Facultat de Psicologia i Logopèdia	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
2225 - Master's Degree in Research, Treatment and Associated Pathologies in Drug A	Neurobiology of drug dependence	COMPULSORY

COORDINATION

MIÑARRO LOPEZ JOSE

SUMMARY

The basic concepts in drug dependence are studied, a classification is offer, and the pharmacology and mechanisms of action of the main substances of abuse, both legal and illegal are explain.

The main preclinical models in drug dependence are also explain: self-administration, place preference conditioning, intracranial electrical stimulation, and discrimination of stimuli. Preclinical models are apply to the study of specific aspects of addiction such as sensitization and tolerance.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

Be completing module 42465

COMPETENCES / LEARNING OUTCOMES

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Aportar técnicas de investigación en el ámbito de la investigación básica y su posible traslado como modelo explicativo en la investigación con seres humanos.

Conocer los diferentes mecanismos de acción específicos de las diferentes drogas que se estudien y relacionarlos con las teorías neurobiológicas, genéticas y sociales que se han aprendido anteriormente.

Conocer los diferentes modelos preclínicos, modelos animales experimentales que se utilizan en la investigación en drogodependencias.

Demostrar una comprensión sistemática del campo de las drogodependencias y el dominio de las habilidades y métodos de investigación relacionados con dicho campo.

Diseñar e identificar áreas o tema prioritarios necesarios para ser investigados en el ámbito de las drogodependencias.

Poder relacionar las diferentes teorías neurobiológicas que explicar la etiología y el desarrollo de la adicción a las drogas.

Poseer las habilidades de aprendizaje para proponer estrategias y diseños experimentales de acuerdo con los resultados de los diferentes experimentos que se han comentado y que son paradigmáticos en el área de las drogodependencias.

Saber clasificar y conocer los mecanismos básicos de las diferentes drogas con capacidad adictiva, legales e ilegales.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

DESCRIPTION OF CONTENTS

Basic concepts in drug dependence: Classification and mechanisms of action of drugs with addictive capacity (legal and illegal).

Preclinical models in drug dependence: Animal models in the study of drug dependence. Self-administration, Place Preference Conditioning. Sensitization models.

Substances of abuse: Specific mechanisms of the main drugs of abuse: Absorption, metabolism and specific mechanism of action of each drug.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	105,00
Total hours	**105,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	15,00
Independent study and work	18,00
Preparation for assessment activities	237,00
Total hours	**270,00**

TEACHING METHODOLOGY

Face-to-face sessions. They consist of the presentation of the corresponding theoretical topic. The lecture model allows the teacher to present the most relevant aspects of each topic. Participation will be encouraged, as knowledge is offered. Likewise, in these face-to-face sessions, the student who will have worked autonomously on different theoretical and practical aspects related to the topics studied, will be able to present and expose his work in the classroom. Also in these classroom sessions, the students will carry out practical activities related to the theoretical contents acquired.

Non-face-to-face sessions. They are intended to encourage the construction of knowledge by the student. The activity may consist of a search for specialized documentary information, a contrasted and justified reflection on a certain topic, or the application of classroom knowledge.

Tutorials. The student has a large number of hours of tutorials in which the professor guides the student individually or in small groups in the construction of his knowledge. He guides the student in the elaboration of the works, solves doubts or difficulties related to the subject. The Virtual Classroom forum is also available for consultation.

In addition, in this virtual space, students can find documents, information or relevant news about the subjects of the different modules.

In addition to these learning methods, Complementary Activities are carried out to complement the training of students with Conferences, Expert Panel, Seminars-workshops, Visits, Cineforum.

EVALUATION

The knowledge, skills and competences acquired are continuously evaluated through the student's participation in the individual and group training activities of the subjects of the module, which corresponds to 20% (class activity) and 10% (individual activity) of the grade of the subject. In addition to the continuous evaluation of the student's theoretical and practical work in the different subjects of the module, at the end of the course the student takes a performance test on the level of the competences, their contents and training activities, which corresponds to 70% of the grade for the course.

The module is passed by obtaining a 5 in the total sum of the subjects. Each subject has a certain weight in the total grade according to the teaching hours assigned and averages from 4 points. A score lower than 4 in a subject will result in the failure of the whole module.

The syllabus of the different subjects included in the module specifies, if any, the differences in the evaluation between the first and the second call, as well as the sections that are or are not recoverable and the existence of the minimum requirements to pass the subject.

The awarding of an Honor's Degree in the module will be based on the regulations of the University of Valencia, which takes into account the number of Honor's Degrees per group. It will be granted only when the grade is 9 points or higher in the average of the module and will be awarded to the highest grade.

REFERENCES

BASIC REFERENCES

- Aguilar MA, Miñarro J, Rodríguez M (coordinadores) (2017). *Neurobiología de las Drogodependencias para estudiantes del Master Oficial Investigación, Tratamiento y Patologías Asociadas en Drogodependencias (DITPA). Ed. Gráficas Alhorí. Valencia.*
- Koob G, Arends M, Le Moal M (2015). *Drugs, Addiction and the Brain*. Academic Press.
- Manzanedo C (2020) *Neurobiología de las drogodependencias (42466) Conceptos básicos en drogodependencias.* Máster Oficial DIPTA. Ed. Ángeles Carrillo Baeza. Valencia.
- Pérez de los Cobos J, Valderrama JC, Cervera G, Rubio G (2006). *Tratado SET de Trastornos Adictivos*. Médica Panamericana, Madrid.

COMPLEMENTARY REFERENCES

- Belin-Rauscent A, Fouyssac M, Bonci A, Belin D (2015) How Preclinical Models. Evolved to Resemble the Diagnostic Criteria of Drug Addiction. *Biological Psychiatry*, In Press Corrected Proof. Published online: January 28, 2015.
- Carlson NR. (2018). Fisiología de la conducta. Ed. Pearson. (12ª edición)
- Golstein A (1995). *Adicción*. Ediciones en Neurociencias. Barcelona.
- Koob GF, Le Moal M (2006). *Neurobiology of addiction*. Academic press.
- Lorenzo P, Ladero JM, Leza JC, Lizasoain I (2009). *Drogodependencias*. Ed. Médica Panamericana. Madrid.
- Ikemoto S, Bonci A (2014) Neurocircuitry of drug reward. *Neuropharmacology*, 76:329-341.
- Redolar Ripoll D (2008). *Cerebro y adicción*. Editorial UOC. Barcelona.