Course title: Psychopharmacology: neuroscientific bases and practical applications
Language of instruction: English
Professor: Elena Martín García and Rafael Maldonado
Professor's contact and office hours: elena.martin@upf.edu
Course contact hours: 45
Recommended credit: 6 ECTS credits
Course prerequisites: there are no prerequisites for this course

Language requirements: Recommended level in the European Framework B2 (or equivalent).
Course focus and approach: The objective of this course is to understand the essential foundations of psychopharmacology from a neurobiological perspective. It is intended that the student understands the functioning of psychopharmaceuticals, understands their mechanism of action, distinguishes between therapeutic effects and secondary effects, understands the main drugs that are abused, knows the addictive and neurotoxic potential of some psychopharmaceuticals, or knows the current treatments for mental disorders.
Course description: include here a brief description of the course contents (about 100 words)
A neural circuit vision will be used, and behavioral alterations in psychopathology and the genetic basis of normal and pathological behavior will be considered. The competencies that will be acquired involve identifying, describing, and relating the neurobiology of behavior with psychopharmacology, using the different information and communication technologies for various purposes, working in groups, and presenting the main ideas of a topic in an oral presentation. The course will cover both neurobiological mechanisms and the treatment of psychiatric illnesses such as schizophrenia, depression, anxiety, and addiction. In order to understand the neurobiological substrate of behavior and mental processes, it is necessary to know the components and functioning of the nervous system.
Learning objectives: The course aims to provide the knowledge needed to understand how the brain works in health and disease. This will include the study of the neuron and its neurochemical physiology. At the end of this course, the student will gain valuable knowledge of psychopharmacology and valuable neuroscience for daily life.

Course workload: The course will include teamwork, readings, lectures, exams and oral presentations.

Teaching methodology: The course is structured in both lecture and on-site classes. There is a final course project that the student will present orally in groups.

Assessment criteria:
This course uses a continuous evaluation method by performing 3 learning evidences. These 3 exams will be written, and the final presentation will be oral. The contents evaluated in these tests will be cumulative, thus, each test will evaluate aspects of the subject already evaluated

in previous tests. The final mark of the continuous evaluation of the subject will be obtained from the weighted average score of the evaluated activities.
The relative weight of each of the learning evidences or exams is specified below:
a) Evidence of learning 1: 30% (Unit 1 and 2, class 1 to 3).
b) Evidence of learning 2: 30% (evaluation of all the contents of Unit 1, 2, 3, 4 and classes 7-8 of part 5. All classes 1 to 8).
c) Evidence of learning 3: 40% (Oral group presentation: final oral presentation of a project prepared throughout the course. Characteristics of the Final course project: ·
- Groups of 3 to 4 students.
- Presentation (10' group talk + 10' individual questions).
- Each group must select, investigate and present a specific mental disorder focusing on the main alterations observed in neurotransmitter or neuromodulator systems. Disorders must be selected from the following DSM-5 list (Diagnostic and Statistical Manual of Mental Health Disorders, fifth edition):

- Schizophrenia
- Bipolar and Related Disorders.
- Depressive Disorders.
- Anxiety Disorders.
- Obsessive-Compulsive and Related Disorders.
- Trauma- and Stressor-Related Disorders.
- Feeding and Eating Disorders.
- Substance-Related and Addictive Disorders.
- Other disorders.

The grades will span from 0 to 10. To pass the course it is necessary to obtain more than 5 points. There is no possibility to re-evaluate.

BaPIS absence policy

* Class attendance must be at least 80%.

Attending class is mandatory and will be monitored daily by professors. Missing classes will impact on the student's final grade as follows:

Absences	**Penalization**
Up to two (2) absences	No penalization
Three (3) absences	1 point subtracted from final grade (on a 10-point scale)
Four (4) absences	2 points subtracted from final grade (on a 10-point scale)
Five (5) absences or more	The student receives an INCOMPLETE ("NO PRESENTADO") for the course

The BaPIS attendance policy **does not distinguish between justified or unjustified absences**. The student is deemed responsible to manage his/her absences.

Only absences for medical reasons will be considered justified absences. The student is deemed responsible to provide the necessary documentation. Other emergency situations will be analyzed on a case by case basis by the Academic Director of the BaPIS.

The Instructor, the Academic Director and the Study Abroad Office should be informed by email without any delay.

Classroom norms:

- No food or drink is permitted in class.
- Students will have a ten-minute break after one one- hour session.

Weekly schedule:

1. What is Psychopharmacology?
2. Synaptic transmission.
3. Macroscopic anatomy of the central and peripheric nervous system
4. How does the brain control behavior?
5. Psychopharmacology of schizophrenia.
6. Psychopharmacology of depression.
7. Psychopharmacology of Bipolar disorders.
8. Psychopharmacology of anxiety.
9. Psychopharmacology of addiction.
10. Psychpharmachology of chronic pain
11. Psychopharmacology of dementia.

Last revision: May 2022.

Required readings:

- Stahl, S. M. Stahl's essential psychopharmacology: neuroscientific basis and practical applications. – 5th ed. Cambridge University Press. 2021. ISBN 978-1-108-97163-8.

Recommended bibliography:

- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders, DSM-5. (5th ed.). Washington, DC:
- Carlson NR. (2013) Physiology of Behavior, 11th Edition. Pearson.
- Martín-García E; Robledo P; Gutiérrez-Cuesta J; Maldonado R. Substance Abuse and Dependence (Chapter 8). In vivo models for Drug Discovery. pp. 169 - 192. (Germany): Wiley, 2014. ISBN 9783527333288.
- Stahl, S. M. Stahl's essential psychopharmacology: neuroscientific basis and practical applications. - 3rd ed. Cambridge University Press. 2008. ISBN 978-0-521-67376-1.