

COURSE SYLLABUS

(1) GENERAL

SCHOOL	Social Sciences		
ACADEMIC UNIT	Department of Psychology		
LEVEL OF STUDIES	Graduate Program: Clinical Interventions in Addictions		
COURSE CODE	KPE-01	SEMESTER	1 st
COURSE TITLE	Neurobiology, psychopharmacology, and pathophysiology of addiction		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	CREDITS
Lectures		3	5.0
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Special background		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	In Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	No		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</i></p> <p><i>Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i> <p>This course is intended to provide graduate students with fundamental information on the neurobiological bases of substance use, abuse, and dependence as well as behavioral addictions. The course provides information on how the brain is affected by addictive substances. It introduces the neural circuits and mechanisms that subserve healthy brain function and how long-term drug exposure combined with genetic/epigenetic and environmental factors can dysregulate the brain, leading to addiction. The neuropsychopharmacology of all major classes of addictive substances will be covered. After successful completion of this course students should have a basic understanding of:</p> <ol style="list-style-type: none"> 1. Principles of drug pharmacology 2. Strengths and limitations of the current models/approaches to investigate processes mediating addiction 3. The brain circuits underlying different aspects of addictive behavior 4. Contribution of genetics and epigenetics in vulnerability to addiction 5. Mechanisms of action and pharmacological effects for the most common drugs of abuse. <p>General Competences</p> <p><i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?</i></p>

<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i> <i>Team work</i> <i>Working in an international environment</i> <i>Working in an interdisciplinary environment</i> <i>Production of new research ideas</i>	<i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> <i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> <i>Others...</i>
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- Basic understanding of biopsychological theories and integration of neuroscientific data and information on drug use, abuse and dependence.
- Search for, analysis and synthesis of data and information, with the use of the necessary technology.
- Working independently.
- Team work.
- Decision-making.
- Criticism and self-criticism.
- Production of free, creative and inductive thinking.

(3) COURSE OUTLINE

- 1 In this course, the main neurobiological and biopsychological theories of drug use, abuse and dependence will be presented,
 2. The underlying neurobiological and behavioral mechanisms thought to lead to addiction and the frequent relapses will be studied,
 3. The pharmacology and behavioral effects of the most common addictive substances and the short- and long-term effects of their use on physical and mental health will be presented.
- Class schedule
1. What is addiction? Addictive substances: classification, effects, and risks
 2. Animal models of addiction
 3. Basic pharmacology
 4. Neural circuits and neurotransmitters related with the acute rewarding effects of drugs of abuse
 5. Neural circuits and neurotransmitters related with drug withdrawal
 6. Neurocognitive deficits associated with chronic drug misuse and addiction
 7. Neurobiology of relapse
 8. Influence of genes and genetic vulnerability of substance abuse and addiction
 9. Interaction between stress, the hypothalamic pituitary-adrenal (HPA) axis, drug addiction and relapse.
 10. Opiates/opioids – Harm reduction – Opioid substitution treatment
 11. Psychostimulants: cocaine, amphetamine, methamphetamine, MDMA
 12. Alcohol
 13. Cannabis and synthetic cannabinoids
 14. Nicotine – Smoking cessation

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	Use of digital information sources (via elearn), use of ICT in teaching.	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i> <i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>	Activity	Semester workload
	Lectures	39 hours (1.56 ECTS)
	Individual learning	41hours (1.64 ECTS)
	Student presentations	55 hours (2.20 ECTS)
	Course total	125 hours – 5 ECTS
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	1. Group presentations of the major classes of addictive drugs (50%) 2. Summary and analysis of a scientific research article (50%)	

(5) BIBLIOGRAPHY

<p>- Suggested bibliography:</p> <ol style="list-style-type: none"> 1. Koob, G.F., Arends, M., & Le Moal, M. (2014). <i>Drugs, addiction, and the brain</i>. Amsterdam: Academic Press. 2. Meyer, J.S., & Quenzer, L.F. (2005). <i>Psychopharmacology: Drugs, the brain and behavior</i>. Sunderland, Massachusetts: Sinauer. 3. Advocat, C.D., Comaty, J.E., & Julien, R.M. (2020). <i>A primer of drug action (14th ed.)</i>. New York, NY: Worth/Macmillan. 4. Selected review papers uploaded in the e-learn. <p>- Related academic journals: <i>Addiction Biology, Neuropsychopharmacology, Psychopharmacology</i></p>
