

COURSE OUTLINE
BIOPSYCHOLOGY OF MENTAL DISORDERS

1. GENERAL

SCHOOL	SOCIAL SCIENCES		
DEPARTMENT	PSYCHOLOGY		
LEVEL	UNDERGRADUATE		
COURSE CODE:	ΨΧ-2303	SEMESTER	4o
COURSE TITLE:	PSYCHOPHARMACOLOGY OF ADDICTION AND DRUGS OF ABUSE		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY HOURS	ECTS
Lectures		3	4
COURSE TYPE:	Specialized general knowledge (Elective)		
PREREQUISITES COURSES::	None		
INSTRUCTION/EXAM LANGUAGE:	Greek		
OFFERED TO ERASMUS STUDENTS	YES. Independent study of English literature and a final exam in English		
COURSE WEB PAGE (URL)	https://elearn.uoc.gr/course/view.php?id=310		

2. LEARNING OUTCOMES

Learning Outcomes
<p>The course builds on basic theoretical approaches in Biopsychology introduced in prerequisite courses such as Biological Bases of Behavior. Its aim is to introduce students to the neurobiological basis of addiction and the psychopharmacology of addictive substances, with an emphasis on understanding the mechanisms that lead to dependence, the chronic relapsing nature of addiction, and the effects of addictive substances on the brain and behavior.</p> <p>After completing the course, students should be able to:</p> <ul style="list-style-type: none"> • Describe the neurobiological basis of addiction and the main mechanisms leading to drug dependence. • Understand that addiction is a chronic, relapsing brain disorder. • Identify the major addictive substances, their pharmacological effects, and the impact of their use on neural and behavioral levels. • Apply theoretical knowledge to understand substance use behavior. • Understand the ethical, social, and practical implications of research and intervention in the field of substance use and addiction. • Evaluate and interpret scientific data on addiction, using current literature.
General Competences

- Search for, analyze and synthesize data and information, with the use of the necessary technology.
- Working independently.
- Respect for diversity and multiculturalism.
- Production of free, creative and inductive thinking.
- Criticism and self-criticism

3. COURSE CONTENT

The course's content is linked to the 5 main axes of the curriculum:

Scientific Foundations [1], Scientific Research and Critical Thinking [2], Ethical and Social Responsibility [3], Communication Ability [4], Basic Preparation for Career Decisions and Vocational Rehabilitation [5].

Week 1: Introduction to the Psychopharmacology of Addiction [1, 2, 3, 4, 5]

- Course aim and scope
- Addiction as a complex, multifactorial disorder
- Epidemiological data
- Impact on public health, society, and the economy
- Ethical, legal, medical, and psychological perspectives on addiction
- The biopsychosocial model (Engel)

Week 2: Understanding addiction as a disorder: Basic concepts, Features, Diagnostic Criteria, and Classification of Addictive Substances [1, 2, 3, 4, 5]

- Basic concepts and definitions
- Diagnostic criteria
- Physical vs. psychological dependence
- The “Gateway” theory
- Continuum and patterns of substance use
- Classification of addictive substances and their key properties
- Addictive potential and harm by category of substances

Week 3: Factors Influencing the Effects of Addictive Substances and Pharmacokinetics [1, 2, 3, 4]

- Factors influencing the effects of a psychotropic drug (biological, psychological, and environmental)
- Pharmacokinetics and pharmacodynamics
- Routes of administration and their relationship to the onset and magnitude of effects
- Dose-response curves, therapeutic index, and toxicity
- Effects of chronic administration: tolerance, sensitization, and withdrawal syndrome

Week 4: Dopamine, Reward, and Experimental Models for the Study of Addiction [1, 2, 3, 4]

- Experimental models for studying the addictive properties of psychoactive substances and drug addiction
- Brain reward systems
- The role of dopamine in addiction

Week 5: Genetic Factors and Vulnerability to Addiction [1, 2, 3, 4]

- Heredity and vulnerability to addiction
- Genes linked to addiction and polymorphisms
- Interaction of genetic and environmental factors
- Epigenetic effects

Week 6: Theories of Addiction: From Reinforcement to Neuroadaptations [1, 2, 3, 4]

- Positive reinforcement theory
- Physical dependence theory
- Incentive-sensitization theory
- Addiction as pathological learning

Week 7: Neurocognitive Deficits and the Role of the Prefrontal Cortex. Addiction as a Developmental Disorder [1, 2, 3, 4]

- Neurocognitive deficits and the role of prefrontal regions
- Addictive substances and the developing adolescent brain
- Relapse

Week 8: Therapeutic Approaches in Substance Use Disorders [1, 2, 3, 4, 5]

- Basic principles of addiction treatment
- Types of treatment programs and interventions
- The importance of prevention

Week 9: Opiates/Opioids [1, 2, 3, 4]

Week 10: Psychostimulants [1, 2, 3, 4]

Week 11: Psychedelics (Hallucinogens) [1, 2, 3, 4]

Week 12: Cannabinoids; Nicotine and Smoking [1, 2, 3, 4]

Week 13: Alcohol [1, 2, 3, 4]

4. INSTRUCTIONAL and LEARNING METHODS - EVALUATION

INSTRUCTION METHOD.	In class (face-to-face).		
INFORMATION AND COMMUNICATION TECHNOLOGIES USED	Use of ICT in teaching Support for learning (communication with students and delivery of all course material) via the UoC e-learn online platform (moodle)		
TEACHING ORGANIZATION	Activity	Semester Workload (hours)	ECTS
	Lectures	39	1,56
	Independent study	60	2,40
	Final exam	2	0,08
	Course total	101	4,04
STUDENT EVALUATION	<p>The evaluation (written exam with multiple choice questions and/or true false questions and/or open-ended questions) is in Greek for the students of UoC and in English for the Erasmus students.</p> <p>The evaluation criteria are presented during the 1st lecture of the semester. Moreover, all criteria are available to the students via the web-site of course on UoC e-learn platform.</p>		

5. BIBLIOGRAPHY

<p><i>Basic bibliography:</i></p> <ol style="list-style-type: none"> 1. Advocat, C. D., Comaty, J. E., & Julien, R. M. (2019). <i>Julien's Primer of Drug Action: A comprehensive guide to the actions, uses, and side effects of psychoactive drugs</i>. New York: Worth Publishers. 2. Carlson, N. R., & Birkett, M. A. (2021). <i>Physiology of Behavior (13th ed.)</i>. New York: Pearson. <p><i>Scientific Journals:</i></p> <p>Addiction Biology</p> <p>Addiction Neuroscience</p> <p>Biological Psychiatry</p> <p>Drug and Alcohol Dependence</p>
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