



**INTEGRATED ACADEMIC STUDIES OF PHARMACY  
FOURTH YEAR OF STUDIES**

school year 2023/2024.

**DRUG DEPENDENCE AND DRUG ABUSE**

Subject:

## DRUG DEPENDENCE AND DRUG ABUSE

The subject is valued at 7 ECTS. There are 5 hours of active teaching per week (2 hours of lectures, 1 hour of seminar, and 2 hours of work in a small group)

### TEACHERS AND ASSOCIATES:

	Name and surname	E-mail address	
1.	Mirjana Jovanovic	drminjaj@yahoo.com	Full Professor
2.	Goran Mihajlovic	drgoranmih@gmail.com	Full Professor
3.	Dragana Ignjatovic Ristic	draganaristic4@gmail.com	Full Professor
4.	Mihajlo Jakovljevic	jakovljevicm@medf..kg.ac.rs	Full Professor
5.	Vladimir Janjic	vladadok@yahoo.com	Full Professor
6.	Milica Borovcanin	milicaborovcanin@yahoo.com	Associate Professor
7.	Branimir Radmanovic	biokg2005@yahoo.com	Assistant Professor
8.	Nemanja Muric	nmuric91@gmail.com	Teaching Assistant
9.	Milena Stojkovic	milena-stojkovic94@live.com	Teaching associate
10.	Natasa Minic	natasaminic92@gmail.com	Teaching associate

### COURSE STRUCTURE:

Module	Week	Lectures weekly	Weekly seminars	Work in a small group weekly	Head of subject
Module 1	7	2	1	2	Prof. Mirjana Jovanovic
Module 2	8	2	1	2	Prof. Mirjana Jovanovic

$\Sigma 30+15+15=60$

**ASSESSMENT:**

Students master the subject through modules. The grade is equivalent to the number of points earned (see tables). Points are acquired in two ways:

**ACTIVITY DURING TEACHING:** In this way, the student can earn up to 30 points by answering 2 exam questions from that week's class in a special exercise and, based on the demonstrated knowledge, receives 0-2 points.

**MODULE TESTS:** In this way, the student can earn up to 70 points, according to the attached table.

<b>Module</b>		<b>MAXIMUM POINTS</b>		
		<b>activity during classes</b>	<b>final test of the module</b>	<b>Σ</b>
1	Module 1	14	34	<b>48</b>
2	Module 2	16	36	<b>52</b>
<b>Σ</b>		<b>30</b>	<b>70</b>	<b>100</b>

The final grade is formed as follows:

In order for a student to pass the subject, they must earn a minimum of 55 points and pass all modules.

To pass a module, a student must:

Earn more than 50% of the points in that module;

Earn more than 50% of the points designated for teaching activities in each module;

Pass the module test, i.e., have more than 50% correct answers.

<b>number of points</b>	<b>Grade</b>
0 - 50	<b>5</b>
51- 60	<b>6</b>
61- 70	<b>7</b>
71- 80	<b>8</b>
81- 90	<b>9</b>
91 - 100	<b>10</b>

**MODULE TEST 1**  
**0-34 POINTS**

**EVALUATION OF THE MODULE TEST**

The test has 34 questions.  
Each question is worth 1 point

**MODULE TEST 2**  
**0-36 POINTS**

**EVALUATION OF THE MODULE TEST**

The test has 36 questions.  
Each question is worth 1 point

All lectures are available on the Faculty of Medical Sciences website: [www.medf.kg.ac.rs](http://www.medf.kg.ac.rs)

## School programme:

### MODULE 1

#### TEACHING UNIT 1 (FIRST WEEK):

lectures 2 hours	seminar 1 hour	exercises 2 hours
History (prehistory and history of the use of psychoactive substances; modern aspects - from home production to high-tech production of medicines and drugs; )	Ethical identity and substance abuse; Socio-cultural perspective of substance abuse and addiction	History of the use of psychoactive substances (Summarizing information;)

#### TEACHING UNIT 2 (SECOND WEEK):

lectures 2 hours	seminar 1 hour	exercises 2 hours
Distinction between the concepts: acute intoxication and abuse (Risky and harmful use; Dependence and tolerance; Abstinence crisis;)	Conducting an interview with a patient (setting; style; possible characteristics of clinical picture;)	Interview with a patient (Practical aspects; Vignettes with clinical cases;)

#### TEACHING UNIT 3 (THIRD WEEK):

lectures 2 hours	seminar 1 hour	exercises 2 hours
Neurobiology of benzodiazepine dependence (CNS depressants; clinical picture of dependence: acute poisoning,	Withdrawal syndrome (due to high doses of sedatives/hypnotics; due to low doses; "Rebound" syndrome;)	Benzodiazepine dependence/oral presentation (Write a short essay using data from the internet;)

#### TEACHING UNIT 4 (FOURTH WEEK):

lectures 2 hours	seminar 1 hour	exercises 2 hours
Treatment of benzodiazepine addiction and abuse	List of sedatives/hypnotics and basic pharmacological characteristics List of anxiolytics and basic pharmacological characteristics Abuse and addiction to barbiturates and other hypnotics (acute poisoning barbiturates ;)	Patient interview Examples from clinical practice- PTSD and abuse and addiction "Self-medication" and consequences (examples related to disasters and pandemics/COV 19)

**TEACHING UNIT 5 (FIFTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Abuse of anabolic-androgenic steroids (Intoxication; Addiction; Consequences of abuse and dependencies; Addiction pharmacology ;)	Power point presentation of diagnostic procedures (Examination of addicts; Mental status; Laboratory analyses; Differential diagnosis;)	Anticholinergic psychosis (Find and translate relevant texts related to anticholinergic psychosis-2 papers per group;)

**TEACHING UNIT 6 (SIXTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Neurobiology of opiate addiction (Opioid receptors; Endogenous opioid peptides; Neurotransmitters;)	Opiate addiction (Tolerance; Clinical characteristics of withdrawal syndrome; Overdose;)	Presentation in power point (Draw a scheme-map of the brain areas affected by opiates and neurotransmission pathways; Present it through power point display-work on exercises;)

**TEACHING UNIT 7 (SEVENTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Principles of opiate addiction treatment (Modern concepts of treatment; Detoxification; Substitution; "drug-free" programs; Concomitant medication;) Urgent conditions	The problem of relapse (High addictive potential of opiates; The role of pharmacists in prescribing psychotropic medications;)	Clinical studies and principles of Good Clinical Practice (Analysis of the given problem; Ten most common questions asked by addicts and associates in treatment;)

**MODULE 2****TEACHING UNIT 8 (EIGHTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Neurobiology of alcohol (Alcohol as a drug; Epidemiology; Etiological factors; Diagnosis of alcoholism ;)	Consequences of alcoholism (Somatic; Psychological; Social; Presentation of clinical problems ;)	Clinical vignettes (Solving clinical problems;)

**TEACHING UNIT 9 (NINTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Acute psychosis of alcoholics (Brain org. psychosyndrome - delirium tremens; Psychopharmacological treatment;)	delirium tremens (View of seminar papers on the topic of delirium tremens;)	Models of alcoholism treatment (Group work; Clinical vignettes;)

**TEACHING UNIT 10 (TENTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Principles of action of psychostimulants-MDMA (Pharmacological effects; Psychological effects; Neurotoxicity ;)	Psychobiological consequences of one dose of MDMA - ("power point"- presentation;)	An example from clinical practice (What substance is it about? Solving clinical problems related to PAS;)

**TEACHING UNIT 11 (ELEVENTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Neurobiology of marijuana (Receptors; Endogenous cannabinoid system; Psychoactive and behavioral effects; Marijuana-THC- like medicine ;)	Clinical syndrome (Addiction; Tolerance; Abstinence syndrome; Complications;) Treatment	Neurocognition and peer group influence in marijuana users

**TEACHING UNIT 12 (Twelfth Week):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Abuse of different drugs Pain and consequences (Physiological, pharmacological and sociological consequences ;)	Critical evaluation of drug dosage in Addiction and Psychiatry. Abuse of drugs in medicine Abuse of drugs in sports	Examples from clinical practice (finding a solution to a clinical problem; Adequate dosage; Interactions;) Supervision, public health, suicide prevention

**TEACHING UNIT 13 (WEEK THIRTEEN):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
New psychoactive substances -pharmacological and toxicological effects (prevalence and use, medical consequences	Therapeutic approaches to PAS addiction: pharmacotherapy, psychotherapy and sociotherapy Research	Solving clinical problems: emergency situations and new PAS

**TEACHING UNIT 14 (FOURTEENTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Pharmacoeconomic aspect of addiction	Treatment programs and pharmacoeconomic parameters (examples from the literature;)	Costs of treated and untreated addicts (Finding the costs of treated and untreated alcoholics and opiate addicts; Experiences of others countries; Source: internet;)

**TEACHING UNIT 15 (FIFTEENTH WEEK):**

lectures 2 hours	seminar 1 hour	exercises 2 hours
Public health issues and the approach to addiction	Global epidemiology, prevention, morbidity and mortality associated with PAS	Stigma

## **SCHEDULE OF LECTURES AND SEMINARS**

**PHARMACOLOGY HALL (S5)**

Monday

## **SCHEDULE OF EXERCISES**

**PSYCHIATRY CLINIC  
TUESDAY**



## LESSON SCHEDULE FOR THE SUBJECT DRUG DEPENDENCE AND DRUG ABUSE

Module	Week	type	method unit name	teacher
1	1	<b>L</b>	History	Prof. Mirjana Jovanovic
		<b>S</b>	Ethical identity and substance abuse	
		<b>P</b>	History of the use of psychoactive substance	Prof. Mirjana Jovanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	2	<b>L</b>	Distinction between the concepts: acute intoxication and abuse	Prof. Dragana Ignjatovic Ristic
		<b>S</b>	Conducting an interview with a patient	
		<b>P</b>	Interview with a patient	Prof. Dragana Ignjatovic Ristic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	3	<b>L</b>	Neurobiology of benzodiazepine dependence	Prof. Goran Mihajlovic Asst.prof.Branimir Radmanovic
		<b>S</b>	Withdrawal syndrome	
		<b>P</b>	Benzodiazepine dependence	Prof. Goran Mihajlovic Asst.prof.Branimir Radmanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	4	<b>L</b>	Treatments for benzodiazepine dependence and abuse	Prof. Goran Mihajlovic
		<b>S</b>	List of sedatives/hypnotics and basic pharmacological characteristics. List of anxiolytics and basic pharmacological characteristics.	
		<b>P</b>	Interview with a patient	Prof. Goran Mihajlovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic

Module	Week	Type	method unit name	teacher
1	5	L	Abuse of anabolic-androgenic steroids	Prof. Vladimir Janjic
		S	PowerPoint presentation on diagnostic procedures	
		P	Anticholinergic psychosis	Prof. Vladimir Janjic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	6	L	Neurobiology of opioid dependence	Prof. Mirjana Jovanovic
		S	Opioid dependence	
		P	PowerPoint presentation	Prof. Mirjana Jovanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	7	L	Principles of treating opioid dependence	Prof. Mirjana Jovanovic доц.др Бранимир Радмановић
		S	Problem of relapse	
		P	Clinical studies and principles of Good Clinical Practice	Prof. Mirjana Jovanovic Asst.prof.Branimir Radmanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
			<b>MFE1</b>	<b>MODULE 1 FINAL EXAM</b>

Module	Week	type	method unit name	teacher
2	8	L	Neurobiology of alcohol	Prof. Dragana Ignjatovic Ristic
		S	Consequences of alcoholism	
		P	Clinical vignettes	Prof. Dragana Ignjatovic Ristic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	9	L	Acute psychosis in alcoholics	Prof. Milica Borovcanin
		S	<i>Delirium tremens</i>	
		P	Models of alcoholism treatment	Prof. Mirjana Jovanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	10	L	Principles of action of psychostimulants-MDMA	Prof. Mirjana Jovanovic
		S	Psychobiological consequences of a single dose of MDMA	
		P	Example from clinical practice	Prof. Mirjana Jovanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	11	L	Neurobiology of marijuana	Prof. Mirjana Jovanovic
		S	Clinical syndrome; treatment	
		P	Neurocognition and the influence of peer groups on individuals who use marijuana	Prof. Mirjana Jovanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic

Module	Week	type	method unit name	teacher
2	12	<b>L</b>	Abuse of various drugs. Pain and consequences (Physiological, pharmacological, and sociological consequences)	Prof. Mirjana Jovanovic
		<b>S</b>	Critical assessment of drug dosages in Addiction Medicine and Psychiatry. Drug abuse in medicine. Drug abuse in sports	
	12	<b>P</b>	Examples from clinical practice: Supervision, public health, suicide prevention	Prof. Mirjana Jovanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	13	<b>L</b>	New psychoactive substances - pharmacological and toxicological effects (prevalence and use, medical consequences)	Prof. Mirjana Jovanovic
		<b>S</b>	Therapeutic approaches to addiction to NPS: pharmacotherapy, psychotherapy, and socioterapy.	
		<b>P</b>	Resolving clinical problems: urgent conditions and new NPS	Prof. Mirjana Jovanovic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	14	<b>L</b>	Pharmacoeconomic aspects of substance use disorders	Prof. Mihajlo Jakovljevic
		<b>S</b>	Treatment programs and pharmacoeconomic parameters	
		<b>P</b>	Costs of treated and untreated addicts	Prof. Mihajlo Jakovljevic Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic
	15	<b>L</b>	Public health questions and addiction approaches	Prof. Milica Borovcanin
		<b>S</b>	Global epidemiology, prevention, morbidity and mortality related to PAS	
		<b>P</b>	Stigma  Summary and consolidation of the covered material	Prof. Milica Borovcanin Ta. Nemanja Muric dr Natasa Minic dr Milena Stojkovic

<b>module</b>	<b>week</b>	<b>type</b>	<b>method unit name</b>	<b>teacher</b>
		<b>MFE2</b>	<b>MODULE 1 FINAL EXAM</b>	
		<b>E</b>	<b>EXAM</b>	