



**INTEGRATED ACADEMIC  
PHARMACY STUDIES**

**Clinical pharmacy 2**

**FOURTH YEAR OF STUDIES**

2023/2024.

Subject:

## **CLINICAL PHARMACY 2**

The course is evaluated with 6 ECTS. There are 5 hours of active classes per week (3 hours of lectures and 2 hours of work in a small group)

**TEACHERS AND ASSOCIATES:**

	Name and surname	Email	Position
1.	Tamara Nikolić Turnić*	tamara.nikolic@medf.kg.ac.rs	Associate Professor
2.	Dušan Đurić	duca1duca@gmail.com	Professor
3.	Srđan Stefanović	sstefanovic@medf.kg.ac.rs	Associate Professor
4.	Olivera Kostić	olivera.milovanovic@medf.kg.ac.rs	Associate Professor
5.	Radisa Pavlovic	rpavlovic@medf.kg.ac.rs	Associate Professor
6.	Milena Jurisevic	milena.jurisevic@medf.kg.ac.rs	Docent
7.	Aleksandra Stojanović	vranicaleksandra90@gmail.com	Docent
8.	Marko Ravić	markoravic@hotmail.com	Assistant
9.	Nataša Mijailović	nacakg@gmail.com	Assistant with Ph.D
10.	Katarina Mihajlovic	katarina.radonjic@medf.kg.ac.rs	Assistant with Ph.D
11.	Katarina Djordjevic	kacka96kg@gmail.com	Assistant
12.	Bozidar Pindović	pindovic.bozidar@gmail.com	Teaching Associate

\*Course leader

**COURSE STRUCTURE:**

Module	Name of module	Week	Lecture/week	Practical work/week	Course leader
1.	Clinical pharmacy in the function of implementing rational pharmacotherapy	5	3	2	Prof. Dr. Tamara Nikolić Turnić
2.	Clinical pharmacy in the function of implementing rational pharmacotherapy	5	3	2	Prof. Dr. Tamara Nikolić Turnić
3.	Clinical pharmacy in the function of implementing rational pharmacotherapy	5	3	2	Prof. Dr. Tamara Nikolić Turnić
					$\Sigma 30+30=60$

## **ASSESSMENT:**

The final grade is formed based on the number of points gained through pre-exam activities and on the final exam. The grade is equivalent to the number of points earned (shown in the tables).

**ACTIVITY DURING THE LESSON:** In this way, the student can earn up to 30 points by answering 2 exam questions from that week's class in the last lesson of working in a small group, and in accordance with the demonstrated knowledge, he receives 0 - 2 points. If at the end of the semester the student does not achieve more than 50% of the points, he has not passed the pre-exam activity

**FINAL EXAM:** In this way, the student can gain up to 70 points. The student takes the final test, which has 70 questions and includes a check of knowledge from the entire material covered during class. If the student does not get more than 50% of the correct answers, he has not passed the final exam.

**The final grade is formed as follows:**

**In order to pass the course, the student must achieve a minimum of 51 points, pass pre-exam activities on all modules and pass the final exam (test).**

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

## LITERATURE

<b>Module</b>	<b>Book</b>	<b>Faculty of Medical Sciences</b>
Module 1-3	Katzung B, Trevor A. Basic & Clinical Pharmacology, 14th edition, 2018; McGraw-Hill Medical.	Has
Module 1-3	Clinical Pharmacy and Therapeutics. Cate Whittlesea & Karen Hodson, 6 <sup>th</sup> edition, 2018; Elsevier Science	Has
Module 1-3	Concepts in Clinical Pharmacokinetics, Joseph T. DiPiro, et al. American Society of Health Systems Pharmacists. Inc., 2005.	Has

## PROGRAMME:

### FIRST MODULE: CLINICAL PHARMACY IN THE FUNCTION OF IMPLEMENTING RATIONAL PHARMACOTHERAPY

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

Lectures 3 hours	Practical exercises 2 hours
The role of the clinical pharmacist in the clinical trial of drugs critical evaluation of the validity of the clinical study (double-blind, randomization, "intention-to-treat" analysis..	Students receive a copy of a published clinical study; they need to evaluate the validity and clinical significance.

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

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in disorders in the gastrointestinal tract. Peptic disease. Inflammatory bowel disease. Constipation and diarrhea. Adverse effects of drugs on the hepato-biliary system.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

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

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in disorders of the cardiovascular system. Hypertension, Ischemic heart disease; Dyslipidemia.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

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

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in hematological disorders. Anemia. Leukemia. Coagulation disorders.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

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

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in respiratory disorders. Asthma. Chronic obstructive pulmonary disease. Respiratory infections.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

SECOND MODULE: CLINICAL PHARMACY IN THE FUNCTION OF IMPLEMENTING RATIONAL PHARMACOTHERAPY

TEACHING UNIT 6 (SIXTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in neurological and psychiatric disorders. Pharmacotherapy of pain.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

TEACHING UNIT 7 (SEVENTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in infectious diseases 1.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

TEACHING UNIT 8 (EIGHTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in infectious diseases 2.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

TEACHING UNIT 9 (NINTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in endocrine disorders. Dysfunction of the thyroid and parathyroid glands. Diabetes mellitus. Menopause.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

TEACHING UNIT 10 (TENTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in renal disorders. Acute and chronic renal failure	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

## ТРЕЋИ МОДУЛ: КЛИНИЧКА ФАРМАЦИЈА У ФУНКЦИЈИ СПРОВОЂЕЊА РАЦИОНАЛНЕ ФАРМАКОТЕРАПИЈЕ

### TEACHING UNIT 11 (ELEVENTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in rheumatic disorders. Rheumatoid arthritis and osteoarthritis. Gout and hyperuricemia.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

### TEACHING UNIT 12 (Twelfth Week):

Lectures 3 hours	Practical exercises 2 hours
Rational application of pharmacotherapy in disorders of the urogenital tract. Infections of the urogenital tract. Diseases of the prostate.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

### TEACHING UNIT 13 (WEEK THIRTEEN):

Lectures 3 hours	Practical exercises 2 hours
Pharmacotherapy in neonatology and pediatrics.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

### TEACHING UNIT 14 (FOURTEENTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Chemotherapeutic agents. Clinical pharmacy of malignant diseases.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.

### TEACHING UNIT 15 (FIFTEENTH WEEK):

Lectures 3 hours	Practical exercises 2 hours
Pharmacotherapy in geriatrics.	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up.



## **SCHEDULE OF LECTURES AND SEMINARS**

**WEDNESDAY**

**BIG HALL**

**15:15-17:30**

## **SCHEDULE OF EXERCISES**

**YELLOW ROOM**

**FRIDAY**

**8.00-9.30 am**

**9.30-11.00 am**

## LESSON SCHEDULE FOR CLINICAL PHARMACY COURSE 2

Module	week	date	time	place	type	method unit name	Lecturer/Assistant
1	1			C3	L	Clinical pharmacy of the new age. Personalized medicine.	prof. Dr. Radiša Pavlović
	1				E	Practical examples of personalized medicine methods. Activity during class	Assist. Katarina Djordjevic
	2			C3	L	Rational application of pharmacotherapy in disorders in the gastrointestinal tract. Peptic disease. Inflammatory bowel disease. Constipation and diarrhea. Adverse effects of drugs on the hepato-biliary system.	prof. Dr. Dušan Đurić
	2				E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Marko Ravić
	3			C3	L	Rational application of pharmacotherapy in disorders of the cardiovascular system. Hypertension, Ischemic heart disease; Dyslipidemia.	Prof. Dr. Srđan Stefanović
	3				E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Katarina Mihajlovic
	4			C3	L	Rational application of pharmacotherapy in hematological disorders. Anemia. Leukemia. Coagulation disorders.	Prof. Dr. Srđan Stefanović
	4				E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Nataša Mijailović

## LESSON SCHEDULE FOR CLINICAL PHARMACY COURSE 2

Module	week	date	time	place	type	method unit name	Lecturer/Assistant
1	5			C3	L	Rational application of pharmacotherapy in respiratory disorders. Asthma. Chronic obstructive pulmonary disease. Respiratory infections.	prof. Dr. Radiša Pavlović
	5				E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Bozidar Pindovic
2	6			C3	L	Rational application of pharmacotherapy in neurological and psychiatric disorders. Pharmacotherapy of pain.	prof. Dr. Dušan Đurić
	6				E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Katarina Đorđević
	7			C3	L	Rational application of pharmacotherapy in infectious diseases 1.	Prof. Dr. Marko Folić
	7				E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Katarina Mihajlovic
	8			C3	L	Rational application of pharmacotherapy in infectious diseases 2.	Prof. Dr. Marko Folić
	8				E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Marko Ravic
2	9			C3	L	Rational application of pharmacotherapy in endocrine disorders. Dysfunction of the thyroid and parathyroid glands. Diabetes mellitus. Menopause.	Ass. Prof. Aleksandra Stojanović

## LESSON SCHEDULE FOR CLINICAL PHARMACY COURSE 2

Module	week	date	time	place	type	method unit name	Lecturer/Assistant
	9			<b>C44</b>	<b>E</b>	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Natasa Mijailovic
	10			<b>C3</b>	<b>L</b>	Rational application of pharmacotherapy in renal disorders. Acute and chronic renal failure.	prof. Dr. Dušan Đurić
	10			<b>C44</b>	<b>E</b>	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Bozidar Pindović
<b>3</b>	11			<b>C3</b>	<b>L</b>	Rational application of pharmacotherapy in rheumatic disorders. Rheumatoid arthritis and osteoarthritis. Gout and hyperuricemia.	Ass. Prof. Aleksandra Stojanović
	11			<b>C44</b>	<b>E</b>	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Katarina Djordjevic
<b>3</b>	12			<b>C3</b>	<b>L</b>	Rational application of pharmacotherapy in disorders of the urogenital tract. Infections of the urogenital tract. Diseases of the prostate.	prof. Dr. Radiša Pavlović
	12			<b>C44</b>	<b>E</b>	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Katarina Mihajlovic
<b>3</b>	13			<b>C3</b>	<b>L</b>	Pharmacotherapy in neonatology and pediatrics.	Ass. Prof. Aleksandra Stojanović
	13			<b>C44</b>	<b>E</b>	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan"	Assist Marko Ravic

## LESSON SCHEDULE FOR CLINICAL PHARMACY COURSE 2

Module	week	date	time	place	type	method unit name	Lecturer/Assistant
						therapy follow-up plan should be drawn up. Activity during class	
	14			C3	L	Chemotherapeutic agents. Clinical pharmacy of malignant diseases.	Ass. Prof. Aleksandra Stojanović
	14			C44	E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Natasa Mijailovic
	15			C3	L	Pharmacotherapy in geriatrics.	Ass. Prof. Aleksandra Stojanović
	15			C44	E	The assistant assigns the students several tasks with clinical problems for which a "Pharmacist's Care Plan" therapy follow-up plan should be drawn up. Activity during class	Assist. Bozidar Pindovic
				C5	E	<b>EXAM (JUNE)</b>	