PHARMACOLOGY 2

PHARMACY
INTEGRATED ACADEMIC STUDIES

THIRD YEAR OF STUDY

2024/2025

Title of the course:

PHARMACOLOGY 2

This course is assigned 6 ECTS credits.
It consists of 3 active teaching hours per week: 2 hours of lectures and 1 hour of practical classes.

TEACHERS:

	Name and surname	E-mail	Title
1.	Natasa Djordjevic	natashadj2002@yahoo.com	Full professor
2.	Tamara Nikolic Turnic	tamara.nikolic@medf.kg.ac.rs	Assistant professor
3.	Radisa Pavlovic	r.pavlovic2407@gmail.com	Assistant professor

COURSE STRUCTURE:

Module No	Title	No of weeks	Hours of lectures per week	Hours of practical classes per week	Responsible teacher
1.	**Pharmacology of the gastrointestinal system and electrolytes**	4	2	1	Natasa Djordjevic
2.	**Pharmacology of the endocrine system, cytostatics and immunosuppressants**	6	2	1	Natasa Djordjevic
3.	**Pharmacology of antimicrobial drugs**	5	2	1	Natasa Djordjevic
					Σ 30+30=60

GRADING:

Students should master the course by modules. The grade will be equivalent to the number of points achieved (see the tables). The points will be awarded according to the following scheme:

Module No	Title	Maximal No of points			
		Pre-exam	Exam		Σ
		Activities	Written exam	Oral exam	
1.	**Pharmacology of the gastrointestinal system and electrolytes**	8	12	8	**28**
2.	**Pharmacology of the endocrine system, cytostatics and immunosuppressants**	12	14	12	**38**
3.	**Pharmacology of antimicrobial drugs**	10	14	10	**34**
Σ		**30**	**40**	**30**	**100**

FINAL EXAM:

To pass this course, student must pass all modules.
To pass the module, the student must achieve more than 50% of the maximal number of points for the module, i.e. at least 15, 20, and 18 points for module 1, 2, and 3, respectively.
The final grade will be formed according to the following table:

Grading system		
Grade	**Total No of points**	**Description**
10	91-100	Excellent
9	81-90	Exceptionally good
8	71-80	Very good
7	61-70	Good
6	51-60	Passing
5	< 51	Failing

Literature

Atkinson AJ, et al. Principles of Clinical Pharmacology. 2nd ed. Burlington: Elsevier; 2007.
Katzung B. Basic and Clinical Pharmacology. 10th ed. New York: McGraw-Hill; 2004.
Brunton LL, editor. Goodman & Gilman's The Pharmacological Basis of Therapeutics. 11th ed. New York: McGraw-Hill; 2006.
DiPiro JT, et al. Pharmacotherapy: a pathophysiologic approach. 7th ed. New York: McGraw-Hill; 2008.
Baxter K, editor. Stockley’s drug interactions. 8th ed. London, UK; Pharmaceutical Press; 2008.

Schedule

Module 1:
PHARMACOLOGY OF THE GASTROINTESTINAL SYSTEM AND ELECTROLYTES

COURSE UNIT 1 (WEEK 1):

Lectures: 2 hours	Practical classes: 1 hour
Antiulcer drugs Pharmacotherapy of gastroesophageal reflux disease Helicobacter pylori - detection and eradication Hydrochloric acid and enzymes of the digestive tract	Peptic ulcer (clinical problem)

COURSE UNIT 2 (WEEK 2):

Lectures: 2 hours	Practical classes: 1 hour
Antiemetics and emetics Antiemetic protocols depending on the cause of vomiting Enteral and parenteral nutrition	Diarrhea (clinical problem)

COURSE UNIT 3 (WEEK 3):

Lectures: 2 hours	Practical classes: 1 hour
Laxatives and antidiarrheals Pharmacotherapy of inflammatory bowel diseases Prokinetics, spasmolytics and other drugs	Constipation (clinical problem)

COURSE UNIT 4 (WEEK 4):

Lectures: 2 hours	Practical classes: 1 hour
Medicines in the therapy of coagulation disorders, water and electrolytes and blood preparations Medicines in the treatment of anemia Hematopoietic growth factors	Anemia (clinical problem)

Module 2:
PHARMACOLOGY OF THE ENDOCRINE SYSTEM, CYTOSTATICS AND IMMUNOSUPPRESSANTS

COURSE UNIT 5 (WEEK 5):

Lectures: 2 hours	Practical classes: 1 hour
Pharmacology of hypothalamic, pituitary, and sex hormones Thyroid hormones and antithyroid drugs Pharmacology of vitamins	Hyperthyroidism (clinical problem)

COURSE UNIT 6 (WEEK 6):

Lectures: 2 hours	Practical classes: 1 hour
Insulin and oral antidiabetics Hyperglycemic agents	Hyperglycemic coma (clinical problem)

COURSE UNIT 7 (WEEK 7):

Lectures: 2 hours	Practical classes: 1 hour
Adrenal cortex hormones Inhibitors of adrenal cortex hormone synthesis Corticosteroids for systemic and local use	Addison's disease (clinical problem)

COURSE UNIT 8 (WEEK 8):

Lectures: 2 hours	Practical classes: 1 hour
Calcium, parathyroid hormone and vitamin D Other medicines for bone metabolism disorders Bisphosphonate preparations - comparative pharmacology	Osteoporosis (clinical problem)

COURSE UNIT 9 (WEEK 9):

Lectures: 2 hours	Practical classes: 1 hour
Chemotherapy of malignant diseases Adverse effects of cytostatics and their treatment Preparation of cytotoxic drugs and protective measures	Leukemia (clinical problem)

COURSE UNIT 10 (WEEK 10):

Lectures: 2 hours	Practical classes: 1 hour
Immunosuppressive drugs Immunostimulants and monoclonal antibodies	Skin carcinoma lesion (clinical problem)

Module 3:
PHARMACOLOGY OF ANTIMICROBIAL DRUGS

COURSE UNIT 11 (WEEK 11):

Lectures: 2 hours	Practical classes: 1 hour
Basic principles of antibiotic therapy Inhibitors of cell wall synthesis Antibiotics for local application Antiseptics and disinfectants - production and preparation	Pneumonia (clinical problem)

COURSE UNIT 12 (WEEK 12):

Lectures: 2 hours	Practical classes: 1 hour
Inhibitors of protein synthesis Sulfonamides, quinolones, uroantiseptics	Pyelonephritis (clinical problem)

COURSE UNIT 13 (WEEK 13):

Lectures: 2 hours	Practical classes: 1 hour
Other antibacterial drugs Antituberculotic drugs	Osteomyelitis (clinical problem)

COURSE UNIT 14 (WEEK 14):

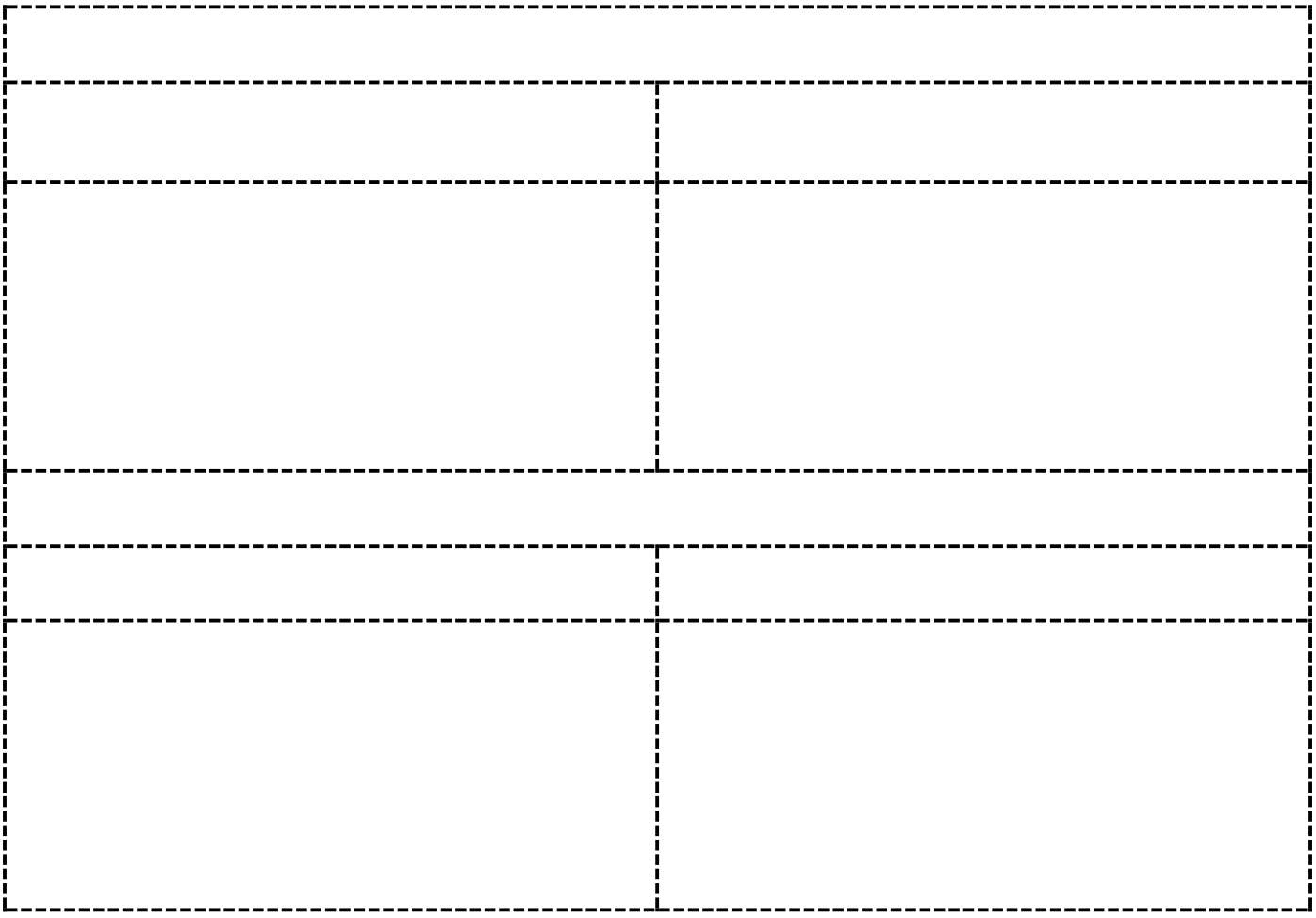
Lectures: 2 hours	Practical classes: 1 hour
Antiviral drugs Antifungal drugs	Candidiasis (clinical problem)

COURSE UNIT 15 (WEEK 15):

Lectures: 2 hours	Practical classes: 1 hour
Medicines against helminths Drugs against protozoa and ectoparasites	Amebiasis (clinical problem)

LECTURES SCHEDULE

PRACTICALS SCHEDULE



PHARMACOLOGY 2: COURSE SCHEDULE

Module	Week	Type	Title	Teacher
1	1	**L**	Antiulcer drugs Pharmacotherapy of gastroesophageal reflux disease Helicobacter pylori - detection and eradication Hydrochloric acid and enzymes of the digestive tract	Natasa Djordjevic
		P	Peptic ulcer (clinical problem)	
	2	**L**	Antiemetics and emetics Antiemetic protocols depending on the cause of vomiting Enteral and parenteral nutrition	Radisa Pavlovic
		P	Diarrhea (clinical problem)	
	3	**L**	Laxatives and antidiarrheals Pharmacotherapy of inflammatory bowel diseases Prokinetics, spasmolytics and other drugs	Tamara Nikolic Turnic
		P	Constipation (clinical problem)	
	4	**L**	Medicines in the therapy of coagulation disorders, water and electrolytes and blood preparations Medicines in the treatment of anemia Hematopoietic growth factors	Natasa Djordjevic
		P	Anemia (clinical problem)	
2	5	**L**	Pharmacology of hypothalamic, pituitary, and sex hormones Thyroid hormones and antithyroid drugs Pharmacology of vitamins	Natasa Djordjevic
		P	Hyperthyroidism (clinical problem)	
		E	**WRITTEN EXAM 1**	

PHARMACOLOGY 2: COURSE SCHEDULE

Module	Week	Type	Title	Teacher
2	6	**L**	Insulin and oral antidiabetics Hyperglycemic agents	Natasa Djordjevic
		P	Hyperglycemic coma (clinical problem)	
	7	**L**	Adrenal cortex hormones Inhibitors of adrenal cortex hormone synthesis Corticosteroids for systemic and local use	Natasa Djordjevic
		P	Addison's disease (clinical problem)	
	8	**L**	Calcium, parathyroid hormone and vitamin D Other medicines for bone metabolism disorders Bisphosphonate preparations - comparative pharmacology	Natasa Djordjevic
		P	Osteoporosis (clinical problem)	
	9	**L**	Chemotherapy of malignant diseases Adverse effects of cytostatics and their treatment Preparation of cytotoxic drugs and protective measures	Radisa Pavlovic
		P	Leukemia (clinical problem)	
	10	**L**	Immunosuppressive drugs Immunostimulants and monoclonal antibodies	Tamara Nikolic Turnic
		P	Skin carcinoma lesion (clinical problem)	
3	11	**L**	Basic principles of antibiotic therapy Inhibitors of cell wall synthesis Antibiotics for local application Antiseptics and disinfectants - production and preparation	Natasa Djordjevic
		P	Pneumonia (clinical problem)	

PHARMACOLOGY 2: COURSE SCHEDULE

Module	Week	Type	Title	Teacher
		E	**WRITTEN EXAM 2**	
3	12	**L**	Inhibitors of protein synthesis Sulfonamides, quinolones, uroantiseptics	Natasa Djordjevic
		P	Pyelonephritis (clinical problem)	
	13	**L**	Other antibacterial drugs Antituberculotic drugs	Natasa Djordjevic
		P	Osteomyelitis (clinical problem)	
	14	**L**	Antiviral drugs Antifungal drugs	Natasa Djordjevic
		P	Candidiasis (clinical problem)	
	15	**L**	Medicines against helminths Drugs against protozoa and ectoparasites	Natasa Djordjevic
		P	Amebiasis (clinical problem)	
		E	**WRITTEN EXAM 3**	
		E	**ORAL EXAM**	

L-lectures; P – Practical classes, E-exam