



**Course:** Pharmacology

**Course Coordinator:** Prof Kristina Pilipović, MD, PhD

**Course Collaborators:** Asst Prof Petra Dolenec, MA in Biol., PhD

Asst Prof Jelena Rajič Bumber, MA in Mol. Biol., PhD

Asst Prof Tamara Janković, MEPH, PhD

Iva Kristić, M.EPH

Silvestar Mežnarić, MEPH

**Department:** Department of Basic and Clinical Pharmacology and Toxicology

**Study program:** University Integrated Undergraduate and Graduate Study of Dental Medicine (in English)

**Study year:** 2

**Academic year:** 2026/2027

## SYLLABUS

**Course description (a brief description of the course, general instructions, where and in what form the lessons are organized, necessary equipment, instructions for attendance and preparation for classes, student obligations, etc.):**

The course **Pharmacology** is a compulsory course in the second year of the Integrated Undergraduate and Graduate University Study of Dental Medicine and consists of 20 hours of lectures, 10 hours of practicals, and 45 hours of seminars, which makes a total of 75 hours of teaching (6.0 ECTS).

### LEARNING OUTCOMES FOR THE COURSE

#### **I. COGNITIVE DOMAIN – KNOWLEDGE**

- Describe the basic concepts, divisions, and terminology of pharmacology.
- Explain the main pharmacokinetic and pharmacodynamic principles of drug action.
- Describe the factors that influence drug effects, adverse reactions, and toxicity.
- Explain the principles of drug development, safety evaluation, and clinical use.
- Describe the pharmacology of major drug groups affecting the autonomic, central nervous, cardiovascular, respiratory, digestive, endocrine, reproductive, hematopoietic, and infectious disease systems.
- Compare the mechanisms of action, indications, contraindications, and adverse effects of major drug groups.
- Relate pharmacological knowledge to physiological and pathological processes in the body.
- Describe the main antiseptics, disinfectants, fluoride preparations, and topical medicines used in dentistry and oral hygiene.
- Explain the principles of prescription writing, including magistral, galenic, and finished drug prescriptions.
- Classify medicines and describe the main rules for prescribing them.

#### **II. PSYCHOMOTOR DOMAIN – SKILLS**

- Search and use relevant pharmacological information sources independently.
- Analyze and compare drugs according to their mechanism of action, therapeutic use, and safety profile.
- Apply pharmacological knowledge to the interpretation of clinical situations and case-based problems.
- Present pharmacological information clearly in oral and written form.
- Write prescriptions correctly for finished drugs and medicinal preparations according to established rules.



- Apply prescription-writing rules in magistral and galenic formulations.

**Assigned reading:**

- Dowd FJ, Johnson BS, Mariotti AJ. Pharmacology and Therapeutics for Dentistry, 7th Edition, Mosby, St. Louis, MO, USA, 2017.
- Bradamante V, Klarica M, Šalković-Petrišić M, Edits. Pharmacology Manual, 1st Edition in English, Medicinska naklada, Zagreb, 2010.

**Optional/additional reading:**

- Katzung BG, Edit., Basic & Clinical Pharmacology, 14th Edition, McGraw-Hill Education, New York, USA, 2018.
- Ritter J., Flower R, Henderson G, Rang H. Rang & Dale's Pharmacology, 8th Edition, Elsevier, Churchill Livingstone, London, UK, 2015.

**COURSE TEACHING PLAN:**

**The list of lectures (with topics and descriptions):**

**Lecture 1**

**Introduction to Pharmacology: Scope, Divisions, and Drug Nomenclature**

Learning outcomes:

- Describe the scope, aims, and major divisions of pharmacology.
- Define key pharmacological disciplines.
- Explain the principles of drug naming and classification.

**Lecture 2**

**Pharmacokinetics I: Drug Absorption and Distribution**

Learning outcomes:

- List the main routes of drug administration and compare their advantages and limitations.
- Explain how drugs cross biological membranes.
- Describe the distribution of drugs in blood and tissues.

**Lecture 3**

**Pharmacokinetics II: Drug Biotransformation and Elimination**

Learning outcomes:

- Explain the main reactions involved in drug biotransformation.
- Describe the major routes of drug elimination.
- Relate biotransformation and elimination to drug duration and clearance.

**Lecture 4**

**Pharmacokinetics in the narrow sense and drug dosing**

Learning outcomes:

- Define key pharmacokinetic parameters (bioavailability, volume of distribution, elimination half-life, clearance).
- Explain the kinetic processes of drug absorption, distribution and elimination from the body (zero- and first-order kinetics).
- Analyze the consequences of multiple drug dosing on blood concentration profiles and explain the mechanism of drug accumulation and the risks.



### Lecture 5

#### **Drug Development and Research; Adverse Drug Effects and Pharmacovigilance; Drug Interactions**

##### Learning outcomes:

- Describe the phases of the development and research process of new drugs (preclinical and clinical trials).
- Define and categorize adverse drug reactions and toxic effects.
- Classify types of drug hypersensitivity reactions and explain the mechanisms of their occurrence.
- Analyze the mechanisms of pharmacokinetic and pharmacodynamic interactions and assess their clinical consequences when drugs are used concomitantly.

### Lecture 6

#### **Factors Influencing Drug Action in the Body**

##### Learning outcomes:

- Analyze the influence of the physicochemical properties of a drug, its dose, route of administration, and pharmaceutical form on its biological activity in the body.
- Explain how physiological and demographic factors (age, gender, individual innate biological characteristics) modify the response to a drug.
- Describe the influence of various pathological conditions on the pharmacokinetic and pharmacodynamic parameters of a drug.
- Explain the influence of pregnancy on pharmacokinetic and pharmacodynamic processes.
- Assess the potential teratogenic risk of drugs used during pregnancy.
- Predict factors that influence the transfer of drugs into breast milk and identify drugs with a risk of adverse effects on the infant.

### Lecture 7

#### **Pharmacodynamics: Mechanisms of Drug Action**

##### Learning outcomes:

- Define the basics of drug mechanisms of action (receptors, agonists, antagonists).
- Interpret basic pharmacodynamic principles, dose-effect relationships, and concepts such as affinity, intrinsic activity, and therapeutic index.

### Lecture 8

#### **Local and General Anesthetics**

##### Learning outcomes:

- Compare the pharmacodynamic and pharmacokinetic properties of local and general anesthetics.
- Explain the main clinical uses of local and general anesthetics.
- Describe the most important adverse effects and safety concerns associated with these drugs.

The list of seminars with descriptions:

### Seminar 1

#### **Opioid Analgesics and Antagonists**

##### Learning outcomes:

- Explain the molecular mechanisms of action of opioid analgesics and antagonists.
- List the types of opioid receptors and describe their functional roles.
- Describe the main adverse effects, interactions, contraindications, tolerance, and dependence associated with opioids.

### Seminar 2



### **Non-Opioid Analgesics and Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)**

#### Learning outcomes:

- Compare the mechanisms of action of non-opioid analgesics and nonsteroidal anti-inflammatory drugs.
- Describe their main therapeutic uses, adverse effects, and toxicities.
- Distinguish between major NSAID groups and their clinical differences.

### **Seminar 3**

#### **Cholinergic Agonists, Muscarinic Antagonists, and Nicotinic Drugs**

#### Learning outcomes:

- Explain the effects of cholinergic agonists, muscarinic receptor antagonists, and drugs acting on nicotinic receptors.
- Describe the effects of indirect-acting drugs that modify cholinergic transmission.
- Compare the main therapeutic uses and adverse effects of these drug groups.

### **Seminar 4**

#### **Adrenergic Agonists and Antagonists**

#### Learning outcomes:

- Explain the effects of adrenergic receptor agonists and antagonists.
- Describe the action of indirect-acting drugs that modify adrenergic activity.
- Compare the main clinical uses and adverse effects of these drugs.

### **Seminar 5**

#### **Sedative-Hypnotics and Anxiolytics**

#### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of sedative-hypnotics and anxiolytic drugs.
- Describe their most significant adverse effects.
- Compare the main therapeutic applications of these drugs.

### **Seminar 6**

#### **Anticonvulsants. Treatment of Neurodegenerative Disorders. Antipsychotic and Antidepressant Drugs**

#### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of anticonvulsants and antiparkinsonian/anti-Alzheimer drugs.
- Describe their most important adverse effects.
- Compare the major therapeutic uses of these drug groups.
- Explain the main pharmacodynamic and pharmacokinetic characteristics of antipsychotics and antidepressants.
- Describe their most important adverse effects.
- Compare the principal clinical uses of these psychopharmacological agents.

### **Seminar 7**

#### **Respiratory Drugs. Histamine, and Histamine Antagonists.**

#### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of drugs used in respiratory disease therapy.
- Describe the action of histamine and histamine receptor antagonists.
- Identify the most important adverse effects of these drugs.



### Seminar 8

#### **Antianemic, Hematopoietic, Anticoagulant, Antiplatelet, and Thrombolytic Drugs**

##### Learning outcomes:

- Describe the administration routes, mechanisms of action, and pharmacological effects of drugs acting on blood and hematopoietic organs.
- Explain the main indications, contraindications, adverse effects, and toxicities of representative drugs from these groups.
- Compare drugs within and across subgroups based on efficacy, safety, and clinical use.

### Seminar 9

#### **Drugs Affecting the Immune System; Oncological Pharmacotherapy**

##### Learning outcomes:

- Describe the mechanisms of action and adverse effects of immunosuppressants, immunomodulators, and basic forms of immunotherapy.
  - Classify antineoplastic agents according to their mechanism of action and explain the general principles of oncological pharmacotherapy.
- Recognize oral complications of immunosuppressive and oncological therapy.

### Seminar 10

#### **Drugs Acting on the Gastrointestinal Tract**

##### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of drugs used in gastrointestinal disease therapy.
- Describe their most important adverse effects.
- Relate drug choice to common gastrointestinal disorders.

### Seminar 11

#### **Cardiovascular Pharmacology I: Antiarrhythmics, Antianginals, and Lipid-Lowering Drugs**

##### Learning outcomes:

- Explain the mechanisms of action of the most commonly used antiarrhythmic and antianginal drugs.
- Describe the most important adverse and toxic effects of these drugs.
- Compare the classes of lipid-lowering drugs, including their mechanisms, effects on serum lipids, and advantages or disadvantages in combination therapy.

### Seminar 12

#### **Cardiovascular Pharmacology II: Diuretics, Antihypertensives, and Drugs for Heart Failure**

##### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of drugs used to treat heart failure.
- Explain the main pharmacodynamic and pharmacokinetic characteristics of antihypertensive drugs and diuretics.
- Describe the most significant adverse effects of these drug groups.

### Seminar 13

#### **Adrenal Corticosteroids and Bone Metabolism**

##### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of adrenal cortex hormones and their synthetic agonists and antagonists.



- Describe the most significant adverse effects of these drugs.
- Explain the main pharmacological principles of drugs affecting bone metabolism.

#### **Seminar 14**

##### **Pharmacotherapy of Diabetes; Thyroid Pharmacology.**

###### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of drugs used to treat diabetes mellitus.
- Describe the main adverse effects of insulin, oral hypoglycemics, and glucagon.
- Explain the main pharmacodynamic and pharmacokinetic characteristics of drugs used to treat thyroid disorders and their major adverse effects.

#### **Seminar 15**

##### **Steroid Hormones of Reproduction and Sexual Development**

###### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of gonadotropins and sex hormones.
- Describe their most significant adverse effects.
- Explain the pharmacology of drugs that affect the reproductive system.

#### **Seminar 16**

##### **Antibacterial Drugs I**

###### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of beta-lactam antibiotics, glycopeptides, sulfonamides, trimethoprim, and fluoroquinolones.
- Describe their most significant adverse effects.
- Compare the main therapeutic uses of these antibacterial groups.

#### **Seminar 17**

##### **Antibacterial Drugs II**

###### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of aminoglycosides, tetracyclines, chloramphenicol, macrolides, clindamycin, and metronidazole.
- Describe their most significant adverse effects.
- Compare the main therapeutic uses of these antibacterial groups.

#### **Seminar 18**

##### **Antitubercular, Antifungal, and Antiviral Drugs**

###### Learning outcomes:

- Explain the main pharmacodynamic and pharmacokinetic characteristics of antitubercular, antifungal, and antiviral drugs.
- Describe their most significant adverse effects.
- Compare the major therapeutic applications of these agents.

#### **The list of practicals with descriptions:**

##### **Practical 1**

##### **Topical Drugs in Dental Medicine: Antiseptics and Disinfectants, Dental Topicals, Drugs for Topical Treatment of the Oral Mucosa, Oral Hygiene Preparations**

###### Learning outcomes:



- List and describe the most important antiseptics and disinfectants.
- Explain the main characteristics and the most significant side effects of topical medications in dentistry, fluoride and oral hygiene products.

## Practical 2

### Prescription Writing I

#### Learning outcomes:

- Explain what a recipe is, its parts, ways of prescribing recipes.
- Define general guidelines and rules for prescribing medications.
- List types of pharmacological preparations.
- Explain rules on prescribing recipes for magistral and galenic preparations.

## Practical 3

### Prescription Writing II

#### Learning outcomes:

- Define the classification of medicines.
- Prescribe prescriptions for finished drugs and for various forms of medicinal preparations.

### Students' obligations:

Students are obligated to regularly attend and actively participate in classes. It is compulsory to follow and act in accordance with notifications and rules regarding attendance, absence, partial exams, corrections of partial exams, final exam, etc., which will be presented at the first lecture. Additional information and rules will be announced on a regular basis and on time on the Merlin platform.

### Assessment (exams, description of written/oral/practical exam, the scoring criteria):

During the classes, students can achieve a maximum of 50% (50 points) of the final grade from the course, and the other 50% of the grade (50 points) is achieved at the final exam.

From the classes, different activities are scored:

**A.** acquired knowledge on partial tests: it is possible to achieve 15 points at each of the partial tests, which makes a maximum of 45 points in total, and

**B.** colloquium in pharmacography: 5 points maximum.

The total maximum sum of points that can be achieved during classes and at the final exam is as follows:

|                       |                              |            |
|-----------------------|------------------------------|------------|
| <b>Classes</b>        | Partial test I               | 15         |
|                       | Partial test II              | 15         |
|                       | Partial test III             | 15         |
|                       | Colloquium in Pharmacography | 5          |
| <b>Total (course)</b> |                              | <b>50</b>  |
| <b>Final exam</b>     |                              | <b>50</b>  |
| <b>Total points</b>   |                              | <b>100</b> |

### A. Partial tests

**Test I** covers topics in the Syllabus L1-7. Test I will be taken on **June 6, 2027**.

**Test II** covers topics in the Syllabus L8, S1-7. Test II will be taken on **June 16, 2027**.

**Test III** covers topics in the Syllabus S8-18, P1. Test III will be taken on **June 28, 2027**.

On partial tests, points will be earned according to the following schemes:



| Number of correct answers | Number of points |
|---------------------------|------------------|
| 20                        | 15               |
| 19                        | 14               |
| 18                        | 13               |
| 17                        | 12               |
| 16                        | 11               |
| 14-15                     | 10               |
| 12-13                     | 9                |
| 10-11                     | 8                |
| 0-9                       | 0                |

**Corrections of partial tests** will be organized for students who did not pass them as well as for students who want to improve the number of points gained by taking previous tests. In the latter case, the number of points earned on the correction will be counted as the final result! Test corrections will also be organized for students who did not access them, for which they should have a justifiable reason. Corrections of the tests will be organized **July 7-9, 2027**, in the same form as the tests themselves, and the exact time and manner of holding the corrections will be agreed upon subsequently with the students.

### B. Colloquium in Pharmacography

The pre-exam colloquium in Pharmacography includes the material of practicals **P2-P3**. This exam is **written** and consists of a part in which students will have to write 5 prescriptions (0.5 points per prescription, maximum 2.5 points) and a part in which students will have to answer questions related to the theoretical part of Pharmacography (maximum number of points 2.5). In order to be considered passed, the student will need to correctly write at least 2 prescriptions and answer at least 40% of the theoretical questions correctly.

Students who are not satisfied with the result achieved at the pre-exam colloquium in Pharmacography can try to correct it only once, in one of the scheduled terms. In that case, the number of points earned on the correction will be counted as the final result! The terms for the pre-exam colloquia in Pharmacography are **July 1, 2027, July 15, 2027, August 23, 2027, September 6, 2027, and September 20, 2027**. The times and places will be announced later on the Merlin e-learning platform.

### C. Final exam

Only students who have achieved **at least 25 points** during the course can take the final exam in Pharmacology, in accordance with the Regulations on Studies of the University of Rijeka. Students who have achieved less than 50% of the possible points during the course (i.e., less than 25 points) are not entitled to take the final exam and are given an **F (failed) grade**, cannot earn ECTS points and must re-enroll in the course.

The final oral exam in Pharmacology is conducted in the form of a **structured oral exam using exam cards**. At the final oral exam, the student, depending on the knowledge demonstrated on the exam card, achieves fixed point weights:

- A grade of **Sufficient (2)** in the oral exam brings **25 points**.
- A grade of **Good (3)** in the oral exam brings **35 points**.
- A grade of **Very Good (4)** in the oral exam brings **43 points**.
- A grade of **Excellent (5)** in the oral exam brings **50 points**.

### Final grade

The final grade is formed based on the results obtained during the class, and the grade obtained at the final exam as follows:



| Percent/credits for the acquired knowledge, skills and competences (course + final exam) | Numerical grading system | ECTS system |
|------------------------------------------------------------------------------------------|--------------------------|-------------|
| 90 – 100 %                                                                               | 5 (excellent)            | A           |
| 75 – 89,9 %                                                                              | 4 (very good)            | B           |
| 60 – 74,9 %                                                                              | 3 (good)                 | C           |
| 50 – 59,9 %                                                                              | 2 (sufficient)           | D           |
| 0 – 49,9 %                                                                               | 1 (insufficient)         | F           |

**Other important information regarding to the course:**

Course content and information related to the course will be regularly published via Merlin e-learning platform.



### **COURSE SCHEDULE (for the academic year 2026/2027)**

| <b>Date</b> | <b>Lectures<br/>(time and place)</b>                                                      | <b>Seminars<br/>(time and place)</b>                                                     | <b>Practicals<br/>(time and place)</b> | <b>Instructor</b>                                       |
|-------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------|
| 02/06/2027  | L1 (8:30-10:00)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology  |                                                                                          |                                        | Prof Kristina Pilipović, MD,<br>PhD                     |
|             | L2 (10:15-12:30)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology |                                                                                          |                                        | Asst Prof Tamara Janković,<br>MEPH, PhD                 |
| 03/06/2027  | L3 (8:30-10:00)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology  |                                                                                          |                                        | Asst Prof Tamara Janković,<br>MEPH, PhD                 |
|             | L4 (10:15-12:30)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology |                                                                                          |                                        | Prof Kristina Pilipović, MD,<br>PhD                     |
| 04/06/2027  | L5 (8:30-10:00)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology  |                                                                                          |                                        | Prof Kristina Pilipović, MD,<br>PhD                     |
|             | L6 (10:15-12:30)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology |                                                                                          |                                        | Prof Kristina Pilipović, MD,<br>PhD                     |
| 07/06/2027  | L7 (8:30-10:00)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology  |                                                                                          |                                        | Asst Prof Jelena Rajič Bumber,<br>MA in Mol. Biol., PhD |
| 08/06/2027  | Partial test I (8:00-9:00)                                                                |                                                                                          |                                        |                                                         |
| 08/06/2027  | L8 (9:15-10:30)<br>Department of Basic<br>and Clinical<br>Pharmacology and<br>Toxicology  |                                                                                          |                                        | Asst Prof Tamara Janković,<br>MEPH, PhD                 |
| 09/06/2027  |                                                                                           | S1 (8:30-10:45)<br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology |                                        | Silvestar Mežnarić, MEPH                                |
| 10/06/2027  |                                                                                           | S2 (8:30-10:45)<br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology |                                        | Silvestar Mežnarić, MEPH                                |



|            |                                   |                                                                                                   |  |                                                         |
|------------|-----------------------------------|---------------------------------------------------------------------------------------------------|--|---------------------------------------------------------|
|            |                                   | <b>S3 (11:00-12:30)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology  |  | Silvestar Mežnarić, MEPH                                |
| 11/06/2027 |                                   | <b>S4 (8:30-10:45)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology   |  | Silvestar Mežnarić, MEPH                                |
|            |                                   | <b>S5 (11:00-12:30)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology  |  | Silvestar Mežnarić, MEPH                                |
| 14/06/2027 |                                   | <b>S6 (8:30-10:45)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology   |  | Silvestar Mežnarić, MEPH                                |
|            |                                   | <b>S7 (11:00-12:30)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology  |  | Silvestar Mežnarić, MEPH                                |
| 16/06/2027 | Partial test II (8:00-9:00) P3+P9 |                                                                                                   |  |                                                         |
| 16/06/2027 |                                   | <b>S8 (9:15-11:30)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology   |  | Iva Kristić, M.EPH                                      |
|            |                                   | <b>S9 (11:45-13:15)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology  |  | Iva Kristić, M.EPH                                      |
| 17/06/2027 |                                   | <b>S10 (8:30-10:45)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology  |  | Iva Kristić, M.EPH                                      |
|            |                                   | <b>S11 (11:00-12:30)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology |  | Asst Prof Jelena Rajič Bumber,<br>MA in Mol. Biol., PhD |
| 18/06/2027 |                                   | <b>S12 (8:30-10:45)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology  |  | Asst Prof Tamara Janković,<br>MEPH, PhD                 |
|            |                                   | <b>S13 (11:00-12:30)</b><br>Department of Basic and<br>Clinical<br>Pharmacology and<br>Toxicology |  | Iva Kristić, M.EPH                                      |
| 23/06/2027 |                                   | <b>S14 (8:30-10:45)</b>                                                                           |  | Iva Kristić, M.EPH                                      |



|            |                                    |                                                                                   |                                                                                  |                                  |
|------------|------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------|
|            |                                    | Department of Basic and Clinical Pharmacology and Toxicology                      |                                                                                  |                                  |
|            |                                    | S15 (11:00-12:30)<br>Department of Basic and Clinical Pharmacology and Toxicology |                                                                                  | Iva Kristić, M.EPH               |
| 24/06/2027 |                                    | S16 (8:30-10:45)<br>Department of Basic and Clinical Pharmacology and Toxicology  |                                                                                  | Iva Kristić, M.EPH               |
|            |                                    | S17 (11:00-12:30)<br>Department of Basic and Clinical Pharmacology and Toxicology |                                                                                  | Iva Kristić, M.EPH               |
| 25/06/2027 |                                    | S18 (8:30-10:45)<br>Department of Basic and Clinical Pharmacology and Toxicology  |                                                                                  | Iva Kristić, M.EPH               |
|            |                                    |                                                                                   | P1 (11:00-13:15)<br>Department of Basic and Clinical Pharmacology and Toxicology | Silvestar Mežnarić, MEPH         |
| 28/06/2027 | Partial test III (8:00-9:00) P3+P9 |                                                                                   |                                                                                  |                                  |
| 28/06/2027 |                                    |                                                                                   | P2 (9:15-11:30)<br>Department of Basic and Clinical Pharmacology and Toxicology  | Prof Kristina Pilipović, MD, PhD |
| 29/06/2027 |                                    |                                                                                   | P3 (8:30-11:30)<br>Department of Basic and Clinical Pharmacology and Toxicology  | Prof Kristina Pilipović, MD, PhD |



**List of lectures, seminars and practicals:**

|    | <b>LECTURES (Topics)</b>                                                                                  | <b>Teaching hours</b> | <b>Location/Lecture room</b>                                 |
|----|-----------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------|
| L1 | Introductory Lecture: Definition and Division of Pharmacology; Origin, Names, and Classification of Drugs | 2                     | Department of Basic and Clinical Pharmacology and Toxicology |
| L2 | Pharmacokinetics: Absorption and Distribution of Drugs                                                    | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
| L3 | Pharmacokinetics: Biotransformation and Elimination of Drugs                                              | 2                     | Department of Basic and Clinical Pharmacology and Toxicology |
| L4 | Factors Affecting Drug Activity in the Body                                                               | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
| L5 | Drug Research and Development. Side effects and toxicology                                                | 2                     | Department of Basic and Clinical Pharmacology and Toxicology |
| L6 | Pharmacodynamics: Mechanisms of Drug Action                                                               | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
| L7 | Use of Drugs in Pregnant and Lactating Women                                                              | 2                     | Department of Basic and Clinical Pharmacology and Toxicology |
| L8 | Local Anesthetics; General Anesthesia                                                                     | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
|    | <b>TOTAL TEACHING HOURS</b>                                                                               | <b>20</b>             |                                                              |

|    | <b>SEMINARS (Topics)</b>                                                                      | <b>Teaching hours</b> | <b>Location/Lecture room</b>                                 |
|----|-----------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------|
| S1 | Cholinergic Agonists and Muscarinic Receptor Antagonists; Drugs Affecting Nicotinic Receptors | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
| S2 | Adrenergic Agonists and Antagonists                                                           | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
| S3 | Opioid Analgesics and Antagonists                                                             | 2                     | Department of Basic and Clinical Pharmacology and Toxicology |
| S4 | Non-Opioid Analgesics; Nonsteroidal Anti-inflammatory and Antirheumatic Drugs                 | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |



|                             |                                                                                                                  |           |                                                              |
|-----------------------------|------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------|
| S5                          | Anticonvulsants; Antiparkinsonian Drugs                                                                          | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S6                          | Psychopharmacology: Antipsychotic and Antidepressant Drugs                                                       | 3         | Department of Basic and Clinical Pharmacology and Toxicology |
| S7                          | Sedative-Hypnotics and Antianxiety Drugs                                                                         | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S8                          | Antianemic and Hematopoietic Stimulating Drugs; Anticoagulant, Antiplatelet, and Thrombolytic Drugs              | 3         | Department of Basic and Clinical Pharmacology and Toxicology |
| S9                          | Drugs Acting on the Respiratory System; Histamine and Histamine Antagonists                                      | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S10                         | Drugs Acting on the Gastrointestinal Tract                                                                       | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S11                         | Drugs Acting on Cardiovascular Diseases I: Antiarrhythmic Drugs; Antianginal Drugs; Lipid-Lowering Drugs         | 3         | Department of Basic and Clinical Pharmacology and Toxicology |
| S12                         | Drugs Acting on Cardiovascular Diseases II: Diuretic Drugs; Antihypertensive Drugs; Drugs Used in Heart Failure; | 3         | Department of Basic and Clinical Pharmacology and Toxicology |
| S13                         | Adrenal Corticosteroids; Bone Metabolism                                                                         | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S14                         | Steroid Hormones of Reproduction and Sexual Development                                                          | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S15                         | Insulin, Oral Hypoglycemics, and Glucagon; Pituitary, Thyroid and Parathyroid Pharmacology                       | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S16                         | Antibacterial Drugs I: Beta-Lactams, Glycopeptides, Sulfonamides, Trimethoprim, Fluoroquinolones                 | 2         | Department of Basic and Clinical Pharmacology and Toxicology |
| S17                         | Antibacterial Drugs II: Aminoglycosides, Tetracyclines, Chloramphenicol, Macrolides, Clindamycin, Metronidazole  | 3         | Department of Basic and Clinical Pharmacology and Toxicology |
| S18                         | Antibacterial Drugs III: Antituberculotics; Antifungals; Antivirals                                              | 3         | Department of Basic and Clinical Pharmacology and Toxicology |
| <b>TOTAL TEACHING HOURS</b> |                                                                                                                  | <b>45</b> |                                                              |



|    | <b>PRACTICALS (Topics)</b>                                                                                         | <b>Teaching hours</b> | <b>Location/Lecture room</b>                                 |
|----|--------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------|
| P1 | Antiseptics and Disinfectants; Medicines for Topical Use in Dentistry; Fluorides and Preparations for Oral Hygiene | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
| P2 | Prescription Writing I                                                                                             | 3                     | Department of Basic and Clinical Pharmacology and Toxicology |
| P3 | Prescription Writing II                                                                                            | 4                     | Department of Basic and Clinical Pharmacology and Toxicology |
|    | <b>TOTAL TEACHING HOURS</b>                                                                                        | <b>10</b>             |                                                              |

|    | <b>FINAL EXAM DATES</b> |
|----|-------------------------|
| 1. | July 6, 2027            |
| 2. | July 20, 2027           |
| 3. | August 25, 2027         |
| 4. | September 8, 2027       |
| 5. | September 22, 2027      |

|              | <b>Lectures</b> | <b>Seminars</b> | <b>Practicals</b> | <b>Total</b> |
|--------------|-----------------|-----------------|-------------------|--------------|
| Total number | 20              | 45              | 10                | 75           |
| Online       |                 |                 |                   |              |
| Percentage   |                 |                 |                   |              |