

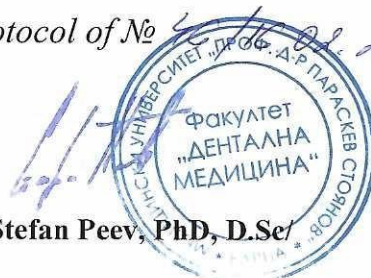


MEDICAL UNIVERSITY
“PROF. DR. PARASKEV STOYANOV” - VARNA
FACULTY OF DENTAL MEDICINE

Approved with a Protocol of № 4/16.04.2022

Approved:
DEAN:

/Prof. Dr. Stefan Peev, PhD, D.Sc/



EDUCATIONAL PROGRAMME
OF
“PHARMACOLOGY”

Specialty “DENTAL MEDICINE”

Educational-qualification degree “MASTER”

Discipline compulsory

Professional qualification “ PHYSICIAN IN DENTAL MEDICINE”

	Semester	Horarium weekly	Total horarium
Lectures	IV, V	1	30
Exercises	IV, V	2	60
Total			90
Monitoring and evaluation forms	Current control		Exam – V semester
Credits (ECTS)		2+3	5
Extracurricular employment			60

Varna, 2022

ANNOTATION:

The teaching of Pharmacology is given to 2nd and 3rd year medical students (IVth and Vth semester, correspondingly). In Part I, students are introduced to the general principles of drugs pharmacokinetics and pharmacodynamics. In Part II, a specific pharmacological knowledge on the different drug groups is provided.

The main tasks of Pharmacology teaching can be specified in the following directions:

- Pharmaceutical dosage forms
- General pharmacokinetics and pharmacodynamics and factors modifying drug action
- Pharmacological characteristics of drug groups: pharmacokinetics, pharmacodynamics, indications, side effects, and important drug interactions.

An emphasis on the dental applications of pharmacology relates drugs to dental considerations in clinical practice. Dental aspects of many drug classes are taught. Drug interactions include potential interactions between drugs a patient is taking for nondental conditions and drugs that may be used or prescribed during dental treatment.

The overall concept in Pharmacology teaching to dentistry students is that they acquire modern up to date basal knowledge on drug pharmacology which will allow them to provide a rational pharmacotherapy to their patients.

The Pharmacology course consists of lectures and seminars. There are two mid-term tests in each semester as a form of on-going assessment. The midterm examinations consist of a multiple choice test and classification of drugs (a minimum score of 50% to pass).

The overall assessment is based on final examination. It includes a permissive test and a main test. The permissive test is not required for the students with an average grade from the on-going assessment 5.00 or higher.

PLAN OF TOPICS OF LECTURES AND PRACTICAL CLASSES

LECTURES IV SEMESTER

№	Topic	Hours
1.	Basics of pharmacology. Definition of a drug. Development of a drug: Stages and phases. Pharmacokinetics. Transmembrane transport of drug molecules. Absorption, distribution, metabolism (biotransformation) and excretion of drugs.	2
2.	Pharmacodynamics. Drug action and drug effect. Drug targets. Specific and non-specific drug action. Drug-receptor interaction. Repeated and combined administration of drugs. Adverse drug reactions.	2
3.	Pharmacological aspects of autonomic neurotransmission. Drugs affecting cholinergic transmission.	2
4.	Drugs affecting adrenergic transmission. Pharmacology of histamine.	2
5.	Non-narcotic analgesics-antipyretics (non-opioid analgesics). Non-steroidal anti-inflammatory drugs. Opioid analgesics.	2
6.	Local anaesthetics. General anaesthetics. Sedative-hypnotic drugs. Anxiolytics. Antiepileptic drugs and anticonvulsants. Pharmacologic management of parkinsonism. Antipsychotic drugs (neuroleptics). Antidepressants.	2
7.	Calcium channel blockers (calcium antagonists). Antianginal drugs. Cardioinotropic drugs.	2
8.	Drugs acting on renin-angiotensin-aldosterone system. Diuretics. Antihypertensive drugs. Peripheral vasoactive drugs.	2
Total		16

LECTURES V SEMESTER

№	Topic	Hours
1.	Antidysrhythmic (antiarrhythmic) drugs. Lipid-lowering (antidyslipidemic) drugs.	2
2.	Pharmacology of blood.	2
3.	Bactericidal antimicrobial drugs: antibiotics, fluoroquinolones. Bacteriostatic antimicrobial drugs: antibiotics and synthetic drugs.	2
4.	Antianaerobic antimicrobial drugs. Antifungal drugs. Drugs used to treat tuberculosis. Antiviral drugs.	2
5.	Drugs with endocrine-metabolic activity. Antidiabetic drugs. Drugs related to sex hormones.	2
6.	Drugs with endocrine-metabolic activity. Glucocorticosteroids. Drugs acting on bone and mineral homeostasis. Thyrotropic drugs.	2
7.	Specific drugs used in dental medicine.	2
Total		14

PRACTICAL CLASSES IV SEMESTER

№	Topic	Hours
1.	Definition of a drug. Dosage forms. The prescription. Measuring units in	2

	prescription. Solid dosage forms.	
2.	Semi-solid and liquid dosage forms.	2
3.	Pharmacokinetics of drugs. Routes of drug administration.	2
4.	Pharmacodynamics of drugs.	2
5.	Drugs affecting cholinergic transmission.	2
6.	Drugs affecting adrenergic transmission.	2
7.	Non-narcotic analgesics-antipyretics (non-opioid analgesics). Non-steroidal anti-inflammatory drugs.	2
8.	Mid-term examination: General pharmacology. Drugs acting on autonomic nervous system. Non-opioid analgesics and non-steroidal anti-inflammatory drugs.	2
9.	Pharmacology of histamine. Local anaesthetics.	2
10.	Opioid analgesics and antagonists. General anaesthetics.	2
11.	Sedative-hypnotic drugs. Anxiolytics.	2
12.	Mid-term examination: Histaminergic drugs. Local anaesthetics. Opioid analgesics. Sedative-hypnotic drugs. Anxiolytics.	2
13.	Antiepileptic drugs and anticonvulsants. Pharmacologic management of parkinsonism.	2
14.	Antipsychotic drugs (neuroleptics). Antidepressants.	2
15.	Drugs affecting the respiratory system.	2
	Total	30

PRACTICAL CLASSES V SEMESTER

No	Topic	Hours
1.	Drugs affecting renin-angiotensin-aldosterone system. Cardioinotropic drugs.	2
2.	Diuretics. Calcium channel blockers (calcium antagonists). Antihypertensive and antihypotensive drugs.	2
3.	Antidysrhythmic (antiarrhythmic) drugs. Lipid-lowering (antidyslipidemic) drugs.	2
4.	Antianginal drugs. Peripheral vasoactive drugs.	2
5.	Pharmacology of blood.	2
6.	Mid-term examination: Drugs affecting the cardiovascular system and blood.	2
7.	Bactericidal antimicrobial drugs: antibiotics, fluoroquinolones.	2
8.	Bacteriostatic antimicrobial drugs: antibiotics and synthetic drugs. Antianaerobic antimicrobial drugs.	2
9.	Antifungal drugs. Drugs used to treat tuberculosis. Antiviral drugs.	2
10.	Specific drugs used in dental medicine. Antiseptics. Vitamins.	2
11.	Mid-term examination: Antibacterial drugs. Drugs used in tuberculosis. Antifungal and antiviral drugs. Specific drugs used in dental medicine. Antiseptics and vitamins.	2
12.	Drugs affecting the gastrointestinal system.	2
13.	Drugs with endocrine-metabolic activity I.	2
14.	Drugs with endocrine-metabolic activity II.	2
15.	Drug toxicology: Adverse drug reactions and toxic drug effects.	2
	Total	30

MONITORING AND EVALUATION FORMS:

The final exam consists of a permissive test and a main test.

The final grade is assigned on the basis of the grades accumulated during the year from midterm exams (30 %), and the grade from the final main test (70%).

RECOMMENDED LITERATURE:

1. Blackboard – Full lecture course and materials for the practical seminars
2. Pharmacology workbook for Dental Students – authors and editors M. Zhelyazkova-Savova, S. Valcheva-Kuzmanova, Medical University – Varna, 2015.
3. Lippincott Illustrated reviews Pharmacology 8th Edition, K. Whalen, Wolters Kluwer, 2021.
4. Rang & Dale's Pharmacology, 9th edition, J. Ritter, R. Flower, G. Henderson, Y. K. Loke, D. MacEwan, H. Rang, Elsevier, 2019
5. Basic & Clinical Pharmacology, 15th Edition, B. Katzung, McGraw-Hill Education LANGE, 2021.
6. Katzung & Trevor's Pharmacology Examination and Board Review, 13th Edition, B. Katzung, M. Knudering-Hall, A. Trevor, McGraw-Hill Education LANGE, 2021
7. Basic and Clinical Pharmacology with Toxicology. Ed. N. Boyadjieva, ARSO, 2015.

QUESTIONNAIRE 2021/2022

1. Basics of pharmacology. Definition of a drug. Development of a drug – stages and phases.
2. Transmembrane transport of drug molecules. Passive and active transport of drugs. Transporters.
3. Drug absorption and distribution. Routes of drug administration.
4. Metabolism (biotransformation) of drugs. Phase I and phase II reactions.
5. Excretion of drugs and their metabolites.
6. Drug action and drug effect. Types of drug effects. Non-specific drug action.
7. Specific drug action. Main drug receptor superfamilies.
8. Drug-receptor interaction. Dose-response relationship – types.
9. Body factors capable of modifying drug responses: Age. Gender.
10. Repeated administration of drugs.
11. Drug combinations. Levels and mechanisms of drug interactions.
12. Drug toxicology: Adverse drug reactions and toxic drug effects.
13. Autonomic nervous system – pharmacological aspects.
14. Drugs affecting cholinergic transmission. Cholinomimetic drugs.
15. Drugs affecting cholinergic transmission. Cholinoblocking drugs.
16. Drugs affecting adrenergic transmission. Adrenomimetic drugs.
17. Drugs affecting adrenergic transmission. Adrenoblocking drugs.
18. Non-narcotic analgesics-antipyretics (non-opioid analgesics).
19. Non-steroidal anti-inflammatory drugs.
20. Pharmacology of histamine. H₁ and H₂ receptor blocking drugs.

21. Local anesthetics.
22. Opioid analgesics and antagonists. General anesthetics.
23. Sedative-hypnotic drugs. Anxiolytics.
24. Antiepileptic drugs. Anticonvulsants.
25. Pharmacologic management of parkinsonism.
26. Antipsychotic drugs (neuroleptics).
27. Antidepressants.
28. Drugs affecting the respiratory system.
29. Drugs affecting renin-angiotensin-aldosterone system.
30. Cardioinotropic drugs.
31. Diuretics.
32. Calcium channel blockers (calcium antagonists).
33. Antihypertensive and antihypotensive drugs.
34. Antidysrhythmic (antiarrhythmic) drugs.
35. Lipid-lowering (antidyslipidemic) drugs.
36. Antianginal drugs.
37. Peripheral vasoactive drugs.
38. Pharmacology of blood: Drugs used in anemias. Drugs used in bleeding disorders.
39. Pharmacology of blood: Antithrombotic drugs (anticoagulants, fibrinolytics and antiplatelet drugs).
40. Beta-lactam antibiotics: Penicillins. Cephalosporins. Carbapenems.
41. Glycopeptides. Aminoglycosides. Fluoroquinolones.
42. Tetracyclines. Amphenicols.
43. Macrolides. Lincosamides.
44. Synthetic bacteriostatic antimicrobial drugs: Sulfonamides. Oxazolidinones.
45. Antifungal drugs.
46. Drugs used in tuberculosis. Antianaerobic drugs.
47. Antiviral drugs.
48. Antimicrobial drugs used in orodental infections.
49. Specific drugs used in dental medicine: Devitalisers. Fluorides.
50. Specific drugs used in dental medicine: Antibacterial and anti-inflammatory drugs. Drugs used in dentin hypersensitivity. Whitening agents.
51. Antiseptics.
52. Vitamins.
53. Drugs affecting the gastrointestinal system.
54. Glucocorticosteroids.
55. Antidiabetic drugs.
56. Drugs related to sex hormones.
57. Drugs acting on bone and mineral homeostasis.
58. Thyrotropic drugs.

Department's council protocol № 2 / 27.01.2022

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HEAD OF DEPARTMENT: Prof. Stefka Valcheva-Kuzmanova, MD, PhD, DSc 