PHARMACOLOGY & TOXICOLOGY (3rd year, 5th semester)
2020 – 2021.

05th October 2020. – 15th January 2021.

Lecture Room: online	Lecture	Tuesday	9:00 – 10:30
Seminar Room: online	Seminar	Tuesday	10:30 – 12:00
		(Group I & II: 10:30-11:15)	
		(Group III & IV: 11:15-12:00)	
Laboratory Room: Library+ Classroom	Lab	Thursday	10:30 – 12:00
		(Group I & II: 10:30-11:00)	
		(Group III & IV: 11:15-11:45)	

Lecturers:
Prof Žigon Nina, MD, PhD
Prof. Zoran Todorović, MD, PhD
Prof. Dragan Obradović, MD, PhD,
Prof. Ljiljana Gojković-Bukarica, MD, PhD
Prof. Sonja Vučković, MD, PhD
Prof. Miroslav Radenković, MD, PhD
Assoc. Prof. Gordana Dragović Lukić, MD, PhD, Course Coordinator
Assoc. Prof Zorica Nešić, MD, PhD
Assoc. Prof Nevena Divac, MD, PhD
Assoc. Prof Janko Samardžić. MD, PhD
Asist. Prof Katarina Savić Vujović, MD, PhD
Asist. Prof Branislava Medić, MD, PhD
Asist. Prof Marko Stojanović, MD, PhD

Teaching Assistants:
Bojana Božić Cvijan, MD, PhD
Vladimir Đokić, MD, PhD
Dragana Srebro, MD, PhD
Miloš Đurić, MD
Božana Obradović, MD
Vladislav Pajović, MD
Maja Stojković, MD
Miloš Basailović, MD

	Date 2020.	**Topic**	**Lecturer/Teaching Assistant**
		Autonomic pharmacology	
Tue	6 Oct	**Lecture 1 (2 hrs):** Introduction to Pharmacology of neurotransmission (ANS and CNS). Cholinergic and anicholinergic drugs.	Prof. D. Obradović
Tue	6 Oct	**Seminar 1 (1 hr)**: Anticholinesterase substances	Prof. D. Obradović
Thu	8 Oct	**Lab 1 (1 hr)**: Cholinergic & anticholinergic drugs in blood pressure modulation (computer program Autonomic Pharmacology).	Asist. M. Đurić/ Asist. M. Stojković
Tue	13 Oct	**Lecture 2 (2 hrs):** Skeletal muscle relaxants. Histamine and H_1-antihistamines. Serotonin and serotonin antagonists.	Prof. G. Dragović Lukić

Tue	13 Oct	**Seminar 2 (1 hr)**: Anticholinesterase poisoning. Mushroom poisoning. Nicotine toxicity.	Prof. G. Dragović Lukić
Thu	15 Oct	**Lab 2 (1 hr)**: Skeletal muscle relaxants	Asist. M. Stojković / Asist. M. Đurić
Tue	20 Oct	**Lecture 3 (2 hrs):** Pharmacology of adrenergic transmission.	Prof. M. Radenković
Tue	20 Oct	**Seminar 3 (1 hr)**: Pharmacology of eicosanoids and inflammation.	Prof. S. Vučković
Thu	22 Oct	**Lab 3 (1 hr)**: Pharmacology of inflammation – computer simulation.	Asist. D. Srebro/ Asist. V. Djokić
Tue	27 Oct	**Lecture 4 (2 hrs)**: Adrenergic and antiadrenergic drugs.	Prof. M. Radenković
Tue	27 Oct	**Seminar 4 (1 hr)**: Non-steroid antiinflammatory drugs (NSAID).	Prof. S. Vučković
Thu	29 Oct	**Lab 4 (1 hr)**: Adrenoceptor agonists & antagonists in blood pressure modulation.	Asist. V. Djokić/ Asist. D. Srebro
		General pharmacology (basic principles)	
Tue	03 Nov	**Lecture 5 (2 hrs)**: Introduction: Development of pharmacology as scientific discipline; areas of pharmacology. The term drug, origin, drug development. Pharmacokinetics: Drug transport through biological membranes; absorption, bioavailability, distribution of drugs in the body.	Prof. Lj. Gojković-Bukarica
Tue	03 Nov	**Seminar 5 (1 hr)**: Pharmaceutical drug forms and routes of administration.	Prof. Lj. Gojković-Bukarica
Thu	05 Nov	**Lab 5 (1 hr)**: Pharmacokinetics – introductory class.	Asist. M. Basailović/ Asist. D. Srebro
Tue	10 Nov	**Lecture 6 (2 hrs)**: Biotransformation and drug elimination. Pharmacokinetic drug interactions.	Prof. Lj. Gojković-Bukarica
Tue	10 Nov	**Seminar 6 (1 hr)**: Understanding of basic pharmacokinetic parameters and modalities of kinetics having regulatory significance for drug dosage.	Doc. M. Stojanović
Thu	12 Nov	**Lab 6 (1 hr)**: Pharmacokinetics computer simulation (program Pharmatutor).	Asist. D. Srebro/ Asist. M. Basailović
Tue	17 Nov	**Lecture 7 (2 hrs)**: Pharmacodynamic: Drug classes. Characteristics of drug effects on various body levels (general, organs, tissues, cell, subcellular organelles). The mechanisms of drug action and receptor theory. Quantitative aspects of drug effects. Factors influencing drug effects. Repeated drug administration alterations.	Prof. Z. Nešić
Tue	17 Nov	**Seminar 7 (1 hr)**: Drug dependence and drug abuse (mechanisms of habituation, classes of abused drugs).	Doc. M. Stojanović
Thu	19 Nov	**Lab 7 (1 hr)**: Dose-response relationship.	Asist. M. Đurić/ Asist. B. Obradović
Tue	24 Nov	**Lecture 8 (2 hrs)**: Adverse drug reactions: causes, incidence and prevalence, types and significance. Risk-benefit ratio. Drug toxicity. Allergic reactions to	Prof. Z. Nešić

		drugs.	
Tue	24 Nov	**Seminar 8 (1 hr)**:Drug interactions (pharmacokinetic and pharmacodynamic drug interactions).	Prof. Z. Nešić
Thu	26 Nov	**Lab 8 (1 hr)**: Antagonism & synergism -computer simulation. **Colloquium I**	Asist. B. Obradović/ Asist. M. Đurić
		Cardiovascular pharmacology	
Tue	01 Dec	**Lecture 9 (2 hrs)**: Antihypertensive drugs.	Prof. N. Žigon
Tue	01 Dec	**Seminar 9 (1 hr)**: Diuretic agents.	Prof. N. Žigon
Thu	03 Dec	**Lab 9 (1 hr)**: Hypertension – computer simulation (presentation of hypertension, EpharNet) **Colloquium I (re-test)**	Asist. V. Đokić/ Asist. B. Božić Cvijan
Tue	08 Dec	**Lecture 10 (2 hrs)**: Drug treatment of ischemic heart disease.	Prof. N. Žigon
Tue	08 Dec	**Seminar 10 (1 hr)**: Drugs used in hyperlipidemia.	Prof. S. Vučković
Thu	10 Dec	**Lab 10 (1 hr)**: Drugs affecting cardiac blood flow (isolated heart-computer simulation, program Langendorff Heart). Vasoactive drugs.	Asist. B. Božić Cvijan/ Asist. V. Đokić
Tue	15 Dec	**Lecture 11 (2 hrs)**: Inotropic drugs. Drugs used in treatment of acute and chronic heart failure. Anti-dysrhythmic drugs.	Prof. N. Žigon
Tue	15 Dec	**Seminar 11 (1 hr)**: Pharmacology of shock. Fluid and electrolite replacement therapy.	Doc. B. Medić
Thu	17 Dec	**Lab 11 (1 hr)**: Drugs affecting cardiac contractillity and rhythmicity (isolated atria , digitalis - computer simulation, program Langendorff Heart).	Asist. V. Pajović/Asist. B. Obradović
		Chemotherapy	
Tue	22 Dec	**Lecture 12 (2 hrs)**: Introduction to antimicrobial chemotherapy. Beta-lactam antibiotics: penicillins, cephalosporins.	Doc. K. Savić-Vujović
Tue	22 Dec	**Seminar 12 (1 hr)**: Basic principles of antibacterial chemotherapy (susceptibility testing, postantibiotic effect, empirical and causal antimicrobial therapy).	Doc. K. Savić-Vujović
Thu	24 Dec	**Lab 12 (1 hr)**:) Allergic drug reactions and treatment	Asist. B. Obradović/ Asist. V. Pajović
Tue	29 Dec	**Lecture 13 (2 hrs)**: Antituberculosis drugs. Antiviral and antifungal drugs	Prof. G. Dragović Lukić
Tue	29 Dec	**Seminar 13 (1 hr)** Antimalarial agents	Prof. G. Dragović Lukić

Thu	31 Dec	**Lab 13 (1 hr)**:) Antiseptics and disinfectans	Asist. M. Basailović/ Asist. B. Božić Cvijan
Tue	05 Jan	**Lecture 14 (2 hrs):** Macrolides and lincosamides; Chloramphenicol. Tetracyclines. Sulfonamides .	Prof. Nevena Divac
Tue	05 Jan	**Seminar 14 (1 hr)** : Antiparasitic chemotherapy (antiprotozoal drugs, antihelmintics)	Prof. dr N. Divac
Tue	12 Jan	**Lecture 15 (2 hrs):** Glycopeptide antibiotics. Aminoglycosides	Doc. K. Savić-Vujović
Tue	12 Jan	**Seminar 15 (1 hr):** Basic principles of antibacterial chemotherapy (antimicrobial drug combinations, resistance to antimicrobial agents).	Doc. K. Vujović Savić
Thu	14 Jan **From: 9:00-10:30**	**Lab 14 (1 hr):** Pharmacokinetics of antibiotics – computer simulation (program Microlabs)	Asist. B. Božić Cvijan/ Asist. M. Basailović
Thu	14 Jan **From: 10:30-12:00**	**Lab 15 (1 hr):** Make up class	Asist. M. Đurić

Course co-ordinator: **Prof. dr Gordana Dragović Lukić**