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|  | | | **UNIVERSITY OF EAST SARAJEVO**  Faculty of Medicine Foča | | | | | | | | | | | logo | | |
| ***Study program: Nursing*** | | | | | | | | | | |
| I study cycle | | | | | | II study year | | | | |
| **Full subject title** | | | PHARMACOLOGY AND TOXICOLOGY | | | | | | | | | | | | | |
| **Department** | | | Department of Pharmacology, Faculty of Medicine Foča | | | | | | | | | | | | | |
| **Subject code** | | | | | | **Subject status** | | | | | **Semester** | | | **ECTS** | | |
| NU-05-1-016-3 | | | | | | compulsory | | | | | III | | | 6 | | |
| **Professor/ -s** | | Associate professor Dragana Sokolović, PhD, associate professor Dragana Drakul, PhD | | | | | | | | | | | | | | |
| **Associate/ - s** | | Senior assistant Milica Radanović | | | | | | | | | | | | | | |
| **Number of lectures/ teaching workload (per week)** | | | | | | | **Individual student workload**  **(in hours per semester)** | | | | | | | | **Coefficient of student workload So[[1]](#footnote-1)** | |
| **L** | **E** | | | | **SP** | | **L** | | | **E** | | **SP** | | | **So** | |
| 2 | 1 | | | | 0 | | 90 | | | 45 | | 0 | | | 3 | |
| total teaching workload (in hours, per semester) 30+15+0=45 | | | | | | | | total student workload (in hours, per semester)  90+45+0=135 | | | | | | | | |
| Total subject workload (teaching + student): 45+ 135= 180 hours per semester | | | | | | | | | | | | | | | | |
| **Learning outcomes** | | Upon completing and passing the exam:   1. Students should acquire essential knowledge and skills in fundamental and clinical pharmacology to successfully perform their professional duties. 2. They should become proficient, with a particular focus on the clinical application of medications for the diseases and conditions most commonly encountered in general practice. 3. This primarily refers to the clinical application of local anaesthetics; the use of analgesics; medications affecting blood coagulation; drugs for the treatment of cardiovascular, respiratory, and gastrointestinal system diseases; pharmacology of hormones; and anti-infective drugs. 4. Students should recognise contraindications of medications, understand drug safety comprehensively, and know the proper methods of prescribing medications. | | | | | | | | | | | | | | |
| **Preconditions** | | No preconditions | | | | | | | | | | | | | | |
| **Teaching methods** | | Lectures, exercises, seminar | | | | | | | | | | | | | | |
| **Subject content per week** | | **Lectures:**   1. General Pharmacology. History of pharmacology. Division into disciplines. Drugs and poisons. Introduction of new drugs (preclinical and clinical drug testing). The role of professional nurses/therapists/laboratory technicians (non-physicians) in clinical trials. Drug dosing. Dosages. Therapeutic index and therapeutic range of a drug. Drug movement through the body. Passage through biomembranes. Drug absorption. Special absorption pathways. Bioavailability and bioequivalence.. 2. The importance of pharmaceutical formulations. Drug distribution. Drug binding to plasma proteins. Drug metabolism. Factors affecting drug metabolism. Drug excretion. Pathways of drug elimination. Specific considerations for drug use in the elderly, children, and pregnant women. 3. Modes and sites of drug action. Mechanisms of drug action. Receptors. Polypharmacy. Drug interactions and adverse effects. Synergism and antagonism. 4. Special Pharmacology – Neurotransmitters and receptors in the central and autonomic/vegetative nervous system. Cholinergic/parasympathomimetic drugs (Choline esters, Cholinesterase inhibitors and reactivators, Poisoning with mushrooms and botulinum toxin). 5. Anticholinergic/parasympatholytic drugs (Atropine and its derivatives, Ganglionic stimulants and blockers, Neuromuscular blockers). 6. Adrenergic/sympathomimetic drugs (Catecholamines, stimulants, and blockers of adrenergic receptors and their therapeutic significance). 7. Antiadrenergic drugs/sympatholytics (α- and β-blockers and other drugs). 8. Sedatives and hypnotics; Neuroleptics; Antidepressants; Lithium; Epilepsy therapy. General and local anesthetics. Analgesics and antiparkinsonian drugs. 9. Pharmacology of the cardiovascular system (antiarrhythmic and antihypertensive drugs, drugs for the therapy of angina pectoris). 10. Cardiotonic glycosides and other drugs for heart failure, pharmacology of blood, water, and electrolytes. 11. Pharmacology of the digestive tract (pharmacotherapy of peptic ulcers, therapy for diarrhoea, antiemetics, digestives, appetite stimulants and suppressants, and laxative drugs). 12. General principles of vitamin application; Pharmacology of hormones - Mechanism of action of hormones and their application; Anti-infective drugs; Antiseptics and disinfectants; 13. Immunopharmacology (immunosuppressive and immunostimulatory drugs); Chemotherapy of malignant diseases; 14. Pharmacology of the respiratory tract (oxygen, antitussives, expectorants, and other drugs); 15. Clinical toxicology, general principles of poisoning treatment; Most common classical poisonings.   **Exercises:**   1. Dose-effect relationship of a drug (experimental exercise) 2. Competitive antagonism (experimental exercise) 3. Non-competitive antagonism, synergy, and interactions (experimental exercise) 4. Origin of drugs, pharmacopoeia, prescription, and methods of prescribing drugs 5. Cholinergic and anticholinergic drugs (experimental exercise) 6. Adrenergic and antiadrenergic drugs (experimental exercise) 7. Seminars – Drug application for specific patient groups 8. Drug forms and methods of drug administration, storage, and distribution of drugs 9. Anti-Parkinsonian drugs 10. Effects of drugs on the CNS and peripheral muscle relaxants 11. Antimicrobial therapy (Rational use of antibiotics) 12. Hypertension and myocardial infarction or "live" experimental exercise: "Application of antihypertensive drugs on isolated blood vessels" 13. Diabetes therapy or "live" experimental exercise: "Application of uterotonics/tocolytics on an isolated uterus" 14. Analgesics: seminar/experimental exercise 15. Therapy for allergic reactions and anaphylactic shock. | | | | | | | | | | | | | | |
| **Compulsory literature** | | | | | | | | | | | | | | | | |
| **Author/s** | | | | **Publication title/Publisher** | | | | | | | | | **Year** | | **Pages (from-to)** | |
| Kažić T. | | | | *Farmakologija. Belgrade. Faculty of Medicine* | | | | | | | | | 2005 | |  | |
| **Additional literature** | | | | | | | | | | | | | | | | |
| **Author/s** | | | | **Publication title/Publisher** | | | | | | | | | **Year** | | **Pages (from-to)** | |
|  | | | |  | | | | | | | | |  | |  | |
| **Student responsibilities, types of student assessment and grading** | | **Grading policy** | | | | | | | | | | | **Points** | | | **Percentage** |
| Pre-exam activities | | | | | | | | | | | | | | |
| Lecture / exercise attendance | | | | | | | | | | | 20 | | | 20% |
| seminar paper | | | | | | | | | | | 10 | | | 10% |
| colloquium | | | | | | | | | | | 20 | | | 20% |
| Final exam | | | | | | | | | | | | | | |
| written | | | | | | | | | | | 50 | | | 50% |
| TOTAL | | | | | | | | | | | 100 | | | 100 % |
| **Certification date** | | December 2024. | | | | | | | | | | | | | | |

1. The coefficient of student workload So is calculated as it follows:

   а) for the study programs not going through the licensing process: So = (total workload in semester for all of the subjects 900 hrs – total teaching workload L+E in semester for all of the subjects 870 hrs)/ total teaching workload L+E in semester for all of the subjects \_\_\_\_\_ hrs = \_\_\_\_. Consult form content and its explanation.

   b) for the study programs going through the licensing process, it is necessary to use form content and its explanation. [↑](#footnote-ref-1)