

Faculty of Medicine / PHARMACY / CLINICAL PHARMACY

Course:	CLINICAL PHARMACY			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
7635	Mandatory	9	8	3+0+3
Programs	PHARMACY			
Prerequisites	Pharmacotherapy I, II, Pharmacokinetics			
Aims	Adopting the principles of clinical pharmacy (rationalization of therapy) in order to improve efficiency, safety, precision and economical use of medicines by patients and society.			
Learning outcomes	1. Understand and apply the concept of pharmaceutical medicines based on evidence 2. Evaluate sources of information about drugs 3. Apply the principles of clinical pharmacokinetics to implement rational pharmacotherapy 4. Identify, evaluate and develop strategies to solve problems that are related to the use of a product 5. Understand the need for an individual approach to the patient 6. Have detailed product knowledge and ability to advise a patient on the application 7. Inform health professionals and patients on rational pharmacotherapy and health promotion 8. Evaluate and propose modifications to a given therapy in order to provide efficient, safe and economically rational pharmacotherapy.			
Lecturer / Teaching assistant	Dr sci. med. Miloš Krivokapić			
Methodology	Interactive lectures, practical classes (input-exit test, case workshops - Workshop, presentations of solving cases by topic).			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Introduction to clinical pharmacy: definition, history, place and role of the clinical pharmacist.			
I week exercises	Introduction to Clinical Pharmacy: Differences between Clinical Pharmacy and Clinical Pharmacology.			
II week lectures	The concept of health care: primary, secondary and tertiary.			
II week exercises	Medication errors; EBM.			
III week lectures	Applied pharmacokinetics.			
III week exercises	Application of national guidelines for the treatment of certain diseases.			
IV week lectures	Development of new drugs and clinical testing of drugs, clinical audit.			
IV week exercises	Pharmacovigilance; drug interactions.			
V week lectures	Evidence-based pharmacy (EBP, EBM), drug information resources.			
V week exercises	Clinical case workshop.			
VI week lectures	Analysis and interpretation of laboratory results.			
VI week exercises	Clinical case workshop.			
VII week lectures	Week off.			
VII week exercises	Week off.			
VIII week lectures	Colloquium I. Rational pharmacotherapy (specificities by groups of drugs), compliance (adherence), part I.			
VIII week exercises	Clinical case workshop.			
IX week lectures	Rational pharmacotherapy (specificities by groups of drugs), compliance (adherence), part II.			
IX week exercises	Clinical case workshop.			
X week lectures	Pharmacotherapy of special age groups, special physiological and pathophysiological conditions.			
X week exercises	Clinical case workshop.			
XI week lectures	Drug interaction and medical error.			
XI week exercises	Clinical case workshop.			
XII week lectures	Communication skills - counseling patients.			
XII week exercises	Clinical case workshop.			

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XIII week lectures	Medication dispensing regimens; self-medication.					
XIII week exercises	Clinical case workshop.					
XIV week lectures	Colloquium II. Pharmacovigilance - drug safety; falsified medicines.					
XIV week exercises	Visit to the hospital pharmacy of the Clinical Center in Podgorica.					
XV week lectures	Final exam.					
XV week exercises	Analysis and discussion of therapy/possible interactions/possible substitution with other drugs in certain cases patients after visiting the hospital pharmacy.					
Student workload	In the semester Teaching and final exam: (10.66 hours) x 16 = 170.56 hours Necessary preparations before the start semester (administration, registration, certification): (10.66 hours) x 2 = 21.32 hours Total workload for the course: 8 x 30 = 240 hours Load structure: 170.56 hours (classes and final exam) + 21.32 hours (preparation) + 48 hours (supplementary work).					
Per week			Per semester			
8 credits x 40/30=10 hours and 40 minuts 3 sat(a) theoretical classes 3 sat(a) practical classes 0 excercises 4 hour(s) i 40 minuts of independent work, including consultations			Classes and final exam: 10 hour(s) i 40 minuts x 16 =170 hour(s) i 40 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 10 hour(s) i 40 minuts x 2 =21 hour(s) i 20 minuts Total workload for the subject: 8 x 30=240 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 48 hour(s) i 0 minuts Workload structure: 170 hour(s) i 40 minuts (courses), 21 hour(s) i 20 minuts (preparation), 48 hour(s) i 0 minuts (additional work)			
Student obligations			Attendance and active participation in theoretical and practical classes, as well as all forms of knowledge testing mandatory.			
Consultations			The subject teacher and professional associates hold consultations with students once a week at term that is defined at the beginning of the study year.			
Literature			1. Walker R., Edwards C., editors Clinical Pharmacy and therapeutics - translation of the textbook Clinical Pharmacy and therapeutics, 2nd edition, Zagreb: Školska knjiga, 2004; 2. Remington: Science and Practice of Pharmacy, Lippincott Williams and Wilkins, 20th edition (2000). 3. Cipolle RJ, Strand LM Morley PC. Pharmaceutical care practice, The Clinicians Guide 2nd edition, Mc Graw-Hill, New York 2004, 4. Golochorbin-Kon S., Mikov M. Selected chapters from Clinical Pharmacy, 2010.			
Examination methods			Attendance at lectures: (0-5 points) Attendance and activity at exercises: (0-10 points) Colloquium I, II: (0-10) + (0-10) points Seminar paper: (0-15 points) Final exam : (0-50 points). A passing grade is obtained if a cumulative minimum of 50 points is collected.			
Special remarks						
Comment						
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points