COURSE UNIT DESCRIPTION

Course unit title	Code
Pharmacology II/II	**FARM2115** **FARM2215**

Lecturer(s)	Department(s)
Coordinating: Lect. Armantas Gintautas **Others:** Lect. Dr. Tomas Janušonis	Department of Pathology, Forensic medicine and Pharmacology

Cycle	Level of the course unit	Type of the course unit
cycle (integrated studies)		Compulsory

Mode of delivery	Period of delivery	Language of instruction
Lectures, seminars	5th semester	English

Prerequisites and corequisites	
Prerequisites: A student must have completed the following courses: anatomy, physiology, biochemistry, pathophysiology, microbiology. I part of pharmacology (4th semester)	**Corequisites (if any):**

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Self-study hours
5	134	67	67

Purpose of the course unit Programme competences to be developed		
To give the basics of pharmacology, drug classification system, main groups of drugs, their mechanism of action, desired and side effects, drug action on pathological processes and drug pharmacokinetics; teach to write drug prescription. After completing the course students will know in which cases it is necessary to assign the appropriate medicines in medical practice.		
Learning outcomes of the course unit	**Teaching and learning methods**	**Assessment methods**
- Should know what medicines are, the basics of pharmacodynamics and pharmacokinetics - Should be able to describe these processes for medicines - Should know principles of drug development and basics of clinical trials	Lectures (virtual learning environment), seminars (problem solving, discussions, demonstration of videos, presentations of students)	Test, closed and open questions, practical tasks (oral, in written, virtual)
- Should understand the principles of drug classification, to know classes of drugs and the main members of these classes - Should understand the reasons of classifying medicines		
- Should be able to describe mechanism of action of drugs and their classes, indications (based on mechanism of action), adverse drug reactions - should understand mechanism of drugs interaction (benefits and risks)		
- Should know the principles how to write medicine prescription - To be able to find and interpret information about medicine	Practical work, problem solving, prescription writing, search for information	

Topics	Contact work hours							Time and tasks of self-study	
	Lectures	Consultations	Seminars	Practice	Laboratory work	Practical training	**Total contact hours**	**Self-study**	**Tasks**
1. Nonsteroidal anti-inflammatory drugs, drugs used in migraine, rheumatic diseases, gout	2		2	2			**6**	**5**	Preparation for the topic
2. Diuretics. Infusion solutions	2		2	2			**6**	**5**	Preparation for the topic
3. Drugs acting on cardiovascular system: antiarrhythmics', inotropics', drugs for ischemic drug disease, antihypertensive drugs	4		4	4			**12**	**12**	Preparation for the topic
4. Drugs acting on respiratory system. Antihistamines	1		2	2			**5**	**5**	Preparation for the topic
5. Drugs acting on haemostasis and thrombosis. Drugs acting on haemopoietic system	2		2	2			**6**	**6**	Preparation for the topic
6. Drugs acting on gastrointestinal system	1		2	2			**5**	**5**	Preparation for the topic
7. Antibiotics	2		4	4			**10**	**12**	Preparation for the topic
8. Antivirals, antifungals	2		2	2			**6**	**6**	Preparation for the topic
9. Antiprotozoans, antihelmintics	2	1	2	2			**7**	**6**	Preparation for the topic
10. Rational use of antimicrobial drugs			2	2			**4**	**5**	Preparation for the topic
Total	**18**	**1**	**24**	**24**			**67**	**67**	

Assessment strategy	Weight (%)	Assessment period	Assessment criteria
Assessment of knowledge and skills during every seminar (X)	20	During semesters	Preparation for seminar is assessed, as well as ability to use knowledge and facts in practice and problem solving, ability to choose right medicine for certain indication (disease or clinical situation), write a prescription. Knowledge of topics is assessed every seminar based on methodology agreed in department of pharmacology: test, closed and open questions, practical tasks (oral, in written, virtual).
Colloquiums (two in 5th semester); (Y).	20 (colloquiums and control work)	Until the end of December. First colloquium- from 1-6 topics, second colloquium – from 7-10 topics. Colloquiums dates are announced	Only if all seminars and practical classes are attended and knowledge level is acceptable (based on assessment score of each seminar and practical class), student is eligible to take the colloquium. Knowledge is assessed by methodology agreed in department of pharmacology: test, closed and open questions, practical tasks (oral, in written, virtual). Every colloquium consists of two parts: multi choice questions and open questions (the format could be changed with remaining assessing methods). Totally, 75 points may be collected. Final number of points is based on correct (correct answer is evaluated as positive point) and incorrect (incorrect answer is evaluated as negative point) answers, and is converted to the final score according methodology agreed in department of pharmacology (evaluation policy)

		at the beginning of 5th semester (during first lecture and seminar).	and the official scheme of Vilnius university (≥ 92% of correct points – score is 10, 82 - 91% - score is 9, 74 - 81% - score is 8, 66 - 73% - score is 7, 58 - 65% - score is 6, 50 - 57% - score is 5). Passing score of colloquiums is not less than 5. If student doesn't pass or doesn't attend the colloquium duo serious reasons (ex. disease), it can be retaken once during the semester (written). Overall colloquium can be retaken three times. If student retakes the colloquium a third time, assessment will be oral and/or with commission.
Exam	60	On January	Student is eligible to take the exam, if has pharmacology credit of 4th semester and both colloquiums of 5th semester are passed. Exam consists of two parts: multi choice questions and open questions (the format could be changed with remaining assessing methods). Totally, 100 points may be collected. Final number of points is converted to the final mark according methodology agreed in department of pharmacology (evaluation policy) and the official scheme of Vilnius university (≥ 92% of correct points – score is 10, 82 - 91% - score is 9, 74 - 81% - score is 8, 66 - 73% - score is 7, 58 - 65% - score is 6, 50 - 57% - score is 5). Overall exam can be retaken three times.
Final mark			Student is eligible to get final mark, if has pharmacology credit of 4th semester, both colloquiums of 5th semester are passed, all seminars are assessed and passed, exam is passed. The final mark calculated according to formula: 20%X+20%Y+60%Z. Passing final mark of pharmacology is not less than 5.

Author	**Year of publication**	**Title**	**No of periodical or vol. of publication**	**Publication place and publisher or Internet link**
Required reading				
Rang H.P. et al.	2019 2015	Pharmacology	9 ed. 8 ed.	Elsevier Churchill Livingstone
Katzung B.G.	2018	Basic and clinical pharmacology.	14 ed.	McGraw Hill
Richard A., Harvey Karen Whalen Pharm D	2018 2014	Pharmacology	7 ed. 6 ed.	Lippincot Illustrated Reviews
Recommended reading				
Laurence L., Brunton, Bruce A. Chabner, Björn C. Knollmann	2018	Goodman & Gilman's The Pharmacological basis of therapeutics	13 ed.	McGraw-Hill
Vilnius University Library Electronic resources – subscribed databases: ClinicalKey Student, 5MinuteConsult, AccessMedicine, European Pharmacopoeia, MedicinesComplete **Selected publications relevant for particular topic (provided by lecturer)**				