



## COURSE UNIT DESCRIPTION

Course unit title	Code
Pharmacology II/II	FARM2115 FARM2215

Lecturer(s)	Department(s)
Coordinating: Lect. Armantas Gintautas	Pharmacy and pharmacology centre

Cycle	Level of the course unit	Type of the course unit
Integrated studies (I and II parts)		Compulsory

Mode of delivery	Period of delivery	Language of instruction
Lectures, seminars in-person and/or remotely	4 <sup>th</sup> semester	English

Prerequisites and corequisites	
Prerequisites: student must have completed the following courses: anatomy, physiology, biochemistry, pathophysiology, microbiology. I part of pharmacology (3 <sup>rd</sup> semester)	Corequisites (if any):

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Individual work
5	132	66	69

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
<ul style="list-style-type: none"> <li>- Should know what medicines are, the basics of pharmacodynamics and pharmacokinetics</li> <li>- Should be able to describe these processes for medicines</li> <li>- Should know principles of drug development and basics of clinical trials</li> <li>- Should understand the principles of drug classification, to know classes of drugs and the main members of these classes</li> <li>- Should understand the reasons of classifying medicines</li> <li>- Should be able to describe mechanism of action of drugs and their classes, indications (based on mechanism of action), adverse drug reactions</li> <li>- should understand mechanism of drugs interaction (benefits and risks)</li> <li>- Should know the principles how to write medicine prescription</li> <li>- To be able to find and interpret information about medicine</li> </ul>	<p>Lectures (remotely learning environment), seminars (problem solving, discussions, demonstration of videos, simulation of clinical situations presentations of students)</p> <p>Practical work, problem solving, search for information</p>	Test, closed or open questions, practical tasks (with computer, oral, in written, remotely)

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. Steroidal and non-steroidal anti-inflammatory drugs. Drugs used for gout, migraine	2		2	2			6	6	Preparation for the topic
2. Drugs used for rheumatoid arthritis, autoimmune diseases. Drugs acting on gastrointestinal system	1		2	2			5	5	Preparation for the topic
3. Drugs acting on respiratory system. Antihistamines	1		2	2			5	5	Preparation for the topic
4. Drugs acting on cardiovascular system: antiarrhythmics, heart failure, ischemic heart disease	4		4	4			12	12	Preparation for the topic
5. Antihypertensives, diuretics	2		2	2			6	6	Preparation for the topic
6. Drugs acting on haemostasis, thrombosis. haemopoietic system	2		2	2			6	6	Preparation for the topic
7. Antibacterial drugs	2		4	4			10	12	Preparation for the topic
8. Antiviral, antifungal drugs	2		4	2			8	8	Preparation for the topic
9. Antiprotozoal, anthelmintic drugs			2	2			4	6	Preparation for the topic
10. Basic principles of antimicrobial therapy. Rational use of antimicrobial drugs			2	2			4	3	Preparation for the topic
<b>Total</b>	<b>16</b>		<b>26</b>	<b>24</b>			<b>66</b>	<b>69</b>	

Assessment strategy	Weight (%)	Assessment period	Assessment criteria
Assessment of knowledge and skills during every seminar (X)	10 (of final mark)	During semester (before each of colloquiums)	Preparation for seminars and workshops 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 during seminars based on methodology agreed in centre: test, closed and open questions, practical tasks (with computer, oral, in written, remotely). Passing score of any type of assessment is not less than 5 (50%), maximum score is 10 (100%). If student doesn't attend knowledge assessment of seminars (workshop) due serious and validated reason, that assessment is evaluated as negative score. If retake of assessment is needed (due previous negative score or not validated absence) an average score of all assessments is calculated
Colloquiums (three in 4 <sup>th</sup> semester); (Y)	40 (of final mark)	4 <sup>th</sup> colloquium of pharmacology is from 1-3 topics; 5 <sup>th</sup> colloquium of pharmacology is from 4-6 topics; 6 <sup>th</sup> colloquium of pharmacology is from 7-10 topics Preliminary dates of colloquiums and their structure are announced at	Only if all seminars and workshops are attended and knowledge level is acceptable (based on assessment score of each seminar and workshop), student is eligible to take the colloquium. Knowledge is assessed by methodology agreed in centre: test, open or closed questions, practical tasks (with computer, oral, in written, remotely). Every colloquium may consist of one or several parts: test, open or closed questions, practical tasks. The structure of colloquiums is introduced at the beginning of semester. Totally, 10 points (100%) may be collected. Final number of points (percentage) 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 centre

		the beginning of 4 <sup>th</sup> semester (during first lecture and seminar) and confirmed later during the course before each of colloquiums	(evaluation policy) and the official scheme of Vilnius university ( $\geq 92\%$ 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 (50%). If student doesn't pass or doesn't attend the colloquium due to serious reasons (ex. disease), it can be retaken once during the semester, then an average score of all assessments is calculated. Overall colloquium can be retaken three times. If student retakes the colloquium a third time, assessment could be done in oral and/or with commission.
Exam	50 (of final mark)	After pharmacology course. Date of exam and its preliminary structure is announced at the beginning of 4 <sup>th</sup> semester and confirmed later during the course	Student is eligible to take the exam, if he/she has pharmacology credit of 3 <sup>rd</sup> semester and passing scores from all three colloquiums of 4 <sup>th</sup> semester. Exam consists of one and/or two parts: test and/or open questions (the structure 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 centre (evaluation policy) and the official scheme of Vilnius university ( $\geq 92\%$ 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			The final mark calculated according to formula: $10\%X + 40\%Y + 50\%Z$ (mathematical average of all scores)

Author	Year of publication	Title	No of periodical or vol. of publication	Publication place and publisher or Internet link
<b>Required reading</b>				
Rang H.P. et al.	2019 2015	Pharmacology	9 ed. 8 ed.	Elsevier Churchill Livingstone
Katzung B.G.	2021 2018	Basic and clinical pharmacology.	15 ed. 14 ed.	McGraw Hill
Richard A. et al.	2022 2018	Pharmacology	8 ed. 7 ed.	Lippincott Illustrated Reviews
<b>Recommended reading</b>				
Laurence L. et al.	2022	Goodman & Gilman's The Pharmacological basis of therapeutics	14 ed.	McGraw-Hill
<b>Vilnius University Library Electronic resources – subscribed databases:</b> ClinicalKey Student, 5MinuteConsult, AccessMedicine, European Pharmacopoeia, MedicinesComplete <b>Selected publications relevant for particular topic (provided by lecturer)</b>				