



## COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Pharmacology II/II	FARM2115 FARM2215

Academic staff	Core academic unit
<b>Coordinating:</b> Lect. Armantas Gintautas	Pharmacy and pharmacology centre

Study cycle	Type of the course unit
Integrated studies (I and II parts)	Compulsory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Lectures, seminars face to face or remotely	5 <sup>th</sup> semester	English

Requisites	
<b>Prerequisites:</b> Student must have completed the following courses: anatomy, physiology, biochemistry, pathophysiology, microbiology	<b>Co-requisites (if relevant):</b>

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	132	66	66

Purpose of the course unit		
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> </ul>	Lectures (remotely learning environment), seminars (problem solving, discussions, demonstration of videos, presentations of students)	Test, closed or open questions, practical tasks (with computer, oral, in written, remotely)
<ul style="list-style-type: none"> <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> </ul>		
<ul style="list-style-type: none"> <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> </ul>		
<ul style="list-style-type: none"> <li>- Should know the principles how to write medicine prescription</li> <li>- To be able to find and interpret information about medicine</li> </ul>	Practical work, problem solving, search for information	

Content	Contact work hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
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		3	2			7	6	Preparation for the topic
9. Antiprotozoans, antihelmintics			3	2			5	6	Preparation for the topic
10. Rational use of antimicrobial drugs			2	2			4	4	Preparation for the topic
<b>Total</b>	<b>16</b>		<b>26</b>	<b>24</b>			<b>66</b>	<b>66</b>	

Assessment strategy	Weight (%)	Deadline	Assessment criteria
Assessment of knowledge and skills during every seminar (X)	10	During semester (before colloquium)	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 during seminars based on methodology agreed in centre: test, closed and open questions, practical tasks (with computer, oral, in written, remotely).
Colloquium (5 <sup>th</sup> semester); (Y).	30 (colloquium)	Until the end of pharmacology course. Colloquium from 1-6 topics. Preliminary dates of colloquiums and their structure are announced at the beginning of 5 <sup>th</sup>	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 centre: test, open or closed questions, practical tasks (with computer, oral, in written, remotely). Colloquium may consist of one or several parts: test, open or closed questions, practical tasks. The structure could be changed during semester with remaining assessing methods. Totally, 100 points (percentage) 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 (evaluation policy) and the official scheme of Vilnius university ( $\geq 92\%$ of correct points – score is 10,

		semester (during first lecture and seminar) and confirmed later during the course	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 colloquium is not less than 5. If student doesn't pass or doesn't attend the colloquium due serious reasons (ex. disease), it can be retaken once during the semester. 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	After pharmacology course. Date of exam and its preliminary structure is announced at the beginning of 5 <sup>th</sup> semester and confirmed later during the course	Student is eligible to take the exam, if has pharmacology credit of 4 <sup>th</sup> semester and colloquium of 5 <sup>th</sup> semester are passed. 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: $10\%X + 30\%Y + 60\%Z$

Author	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web 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.	Lippincot 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>				