



COURSE UNIT (MODULE) DESCRIPTION

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

Academic staff	Core academic unit
Coordinating: 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	4 th semester	English

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

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"> - 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 (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"> - 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 		
<ul style="list-style-type: none"> - 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) 		
<ul style="list-style-type: none"> - Should know the principles how to write medicine prescription - To be able to find and interpret information about medicine 	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. The subject of pharmacology. Pharmaceutical substance and preparation. Development and clinical trials. Dosage and method of use of medicines	2		2				6	8	Preparation for the topic
2. Pharmacodynamics	2		1	2			5	3	Preparation for the topic
3. Pharmacokinetics, pharmacogenetics	2		1	2			5	3	Preparation for the topic
4. Drugs acting on cholinergic and adrenergic synapses			4	2			6	6	Preparation for the topic
5. Local anaesthetics. General anaesthetics. Opioid analgesics	2		2	2			6	6	Preparation for the topic
6. Anxiolytics, hypnotics. Antipsychotic drugs	1		2	2			5	5	Preparation for the topic
7. Antidepressants and drugs for treatment of mania	1		2	2			5	5	Preparation for the topic
8. Drugs for treatment of neurodegenerative disorders (Alzheimer, Parkinson, Huntington diseases). Antiepileptics	2		4	4			10	10	Preparation for the topic
9. Drugs acting on metabolism	4		6	6			16	15	Preparation for the topic
10. Hormones and drugs acting on endocrine system			2				2	5	Preparation for the topic
Total	16		26	24			66	66	

Assessment strategy	Weight (%)	Deadline	Assessment criteria
Assessment of knowledge and skills during seminars (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).
Colloquiums (two in 4 th semester); (Y).	30 (colloquiums and control work)	First colloquium - from 1-4 topics, second colloquium – from 5-8 topics. Preliminary dates of colloquiums and their structure are announced at	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). Every 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,

		the beginning of 4 th semester (during first lecture and seminar) and confirmed later during the course	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, 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 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.
Control work (one in 4 th semester); (Y).	20 (colloquiums and control work)	One until the end of May. Preliminary date and structure announced at the beginning of semester	Only if all seminars of control work topics are attended and knowledge level is acceptable (based on assessment score of each seminar), student is eligible to take the control work. Knowledge is assessed by methodology agreed in centre: test, open or closed questions, practical tasks (with computer, oral, in written, remotely). Control work consists of test, open or closed questions and practical tasks (the structure could be changed with remaining assessing methods). Passing score of control work is not less than 5. If student doesn't pass or doesn't attend the control work due serious reasons (ex. disease), it can be retaken once during the semester (written). Overall control work can be retaken three times. If student retakes the control work a third time, assessment will be oral and/or with commission.
End of 4 th semester		May 31 st (cumulative)	Student gets pharmacology credit of 4 th semester if both 4 th semester colloquiums and control work are passed. If student doesn't have pharmacology credit of 4 th semester he/she is not eligible to continue pharmacology studies in 5 th semester.

Author	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Required reading				
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
Recommended reading				
Laurence L. et al.	2022	Goodman & Gilman's The Pharmacological basis of therapeutics	14 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)				