

## DESCRIPTION OF THE COURSE OF STUDY

<b>Course code</b>	<b>0912-7LEK-C3.6-P</b>	
<b>Name of the course in</b>	Polish	<b>Farmakologia z toksykologią</b>
	English	<b>Pharmacology with toxicology</b>

### 1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

<b>1.1. Field of study</b>	medical
<b>1.2. Mode of study</b>	Full-time
<b>1.3. Level of study</b>	Uniform Master's studies
<b>1.4. Profile of study*</b>	practical
<b>1.5. Specialization*</b>	Lack
<b>1.6. Unit running the course of study</b>	Faculty of Medicine and Health Sciences
<b>1.7. Person/s preparing the course description</b>	dr hab. n. med. Ewa Orlewska, prof UJK
<b>1.8. Person responsible for the course of study</b>	dr hab. n. med. Ewa Orlewska, prof UJK, dr Piotr Rafalski
<b>1.9. Contact</b>	ewa.orlewska@ujk.edu.pl

### 2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

<b>2.1. Affiliation with the module</b>	Pre-clinical sciences(C)
<b>2.2. Language of instruction</b>	English
<b>2.3. Semesters in which the course of study is offered</b>	5 <sup>th</sup> and 6 <sup>th</sup> semester
<b>2.4. Prerequisites*</b>	Pharmacology and toxicology

### 3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

<b>3.1. Form of classes</b>	Lectures: 60h; classes: 100h
<b>3.2. Place of classes</b>	Lectures – courses in teaching rooms of the UJK classes – courses in teaching rooms of the UJK
<b>3.3. Form of assessment</b>	<p>Written final exam; classes - test from each semester + 2 tests from recipes</p> <p>Class completion s. 5 III r and s.6, III r: Students who have <math>\geq 50\%</math> absence from compulsory classes (classes, tests, lectures) do not receive credit Students are required to be prepared for classes (according to the specified outline). Students should actively participate in class discussions. Students at the end of each semester take the test of theoretical knowledge of a given module. Each semester students take recipe test.</p> <p><u>Subject completion semester V:</u> passing the recipe test 0 - 5 points; passing the test 0 - 10 points</p> <p><u>Subject completion semester VI</u> passing the recipe test 0 - 5 points; passing the test 0 - 10 points</p> <p>The student can receive a maximum of 15 points each semester (10 points for passing classes, 5 points for passing recipes). Students who have obtained at least 50% of the maximum number of points complete the semester. Subjects of pharmacology and toxicology ends with an exam after completing the 6th semester of III year. Students who have completed the 5th and 6th semester are admitted to the final exam.</p>
<b>3.4. Teaching methods</b>	Conversational lecture, discussion, case study.
<b>3.5. Bibliography</b>	<b>Required reading</b>
	<b>Further reading</b>
	<ol style="list-style-type: none"> <li>„Basic and clinical pharmacology” 14th Ed. B.C. Katzung 2017 published by McGraw Hill Education Lange</li> <li>“Brenner and Steven’s pharmacology”, G. M. Brenner and C. Stevens 5th Ed. (2017) Elsevier</li> <li>Lippincott's Illustrated Reviews: Pharmacology”, 6th Ed. (2014), Wolters Kluwer</li> </ol>

		4. "Goodman and Gilman's The Pharmacology Basis of Therapeutics" 13th Ed. (2017) Brunton et al., McGraw Hill
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#### 4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED TEACHING OUTCOMES

##### 4.1. Course objectives (including form of classes: lecture, classes)

The aim of the subject of "Pharmacology and Toxicology" is to teach medical students the principles of rational pharmacotherapy and to present the benefits and risks associated with pharmacotherapy. After completing the pharmacology course students should know the general concepts and issues of pharmacodynamics, pharmacokinetics, pharmacoeconomics, principles of drug reaction and have knowledge of various groups of drugs in terms of mechanisms of action, clinical effects in the system, indications and contraindications, side effects, interactions and principles of dosage. The student should be able to prescribe ready-made medications and recipe forms of drugs on the prescription.

##### 4.2. Detailed syllabus (including form of classes)

###### Lectures

1. Introduction to pharmacology
2. Basic pharmacoeconomics
3. Pharmacodynamics.
4. Pharmacokinetics
5. Autacoids
6. Pharmacology of autonomic nervous system
7. Drugs acting at synaptic and neuroeffector junctional sites
8. Drugs acting on the central nervous system
9. Drugs affecting renal and cardiovascular function
10. Drugs used in respiratory diseases, therapy of asthma
11. Pharmacogenetics, pharmacogenomics and personalized medicine
12. Drugs affecting gastrointestinal function
13. Drugs acting on the blood and blood forming organs
14. Hormones and hormone antagonists
15. Chemotherapy of parasitic, bacterial, viral and fungal infections
16. Chemotherapy of neoplastic diseases
17. Immunotherapy
18. Vitamins and diet supplements
19. Clinical toxicology

###### Classes

1. Sources of drug information.
2. Prescription. Prescription elements. General rules for prescribing medication. Rules for prescribing medicine from the N list. Dosage of medicines to children.
3. Adverse effects of drugs. Pharmacovigilance
4. Analgesic-antipyretic and anti-inflammatory drugs.
5. Opioid analgesics and cannabinoids.
6. Local anaesthetics, general anaesthetics
7. Therapy of Parkinson disease and epilepsies,
8. Antiarrhythmic drugs, therapy of heart failure, myocardial ischemia
9. Therapy of hypercholesterolemia and dyslipidemia
10. Drugs used for control of gastric acidity, treatment of peptic ulcers, prokinetic drugs, antiemetic drugs, drugs used in diarrhea, constipation
11. Anticoagulant, thrombolytic, antiplatelet drugs, hematopoietic agents, blood and blood derivatives
12. Pituitary hormones, thyroid and antithyroid drugs, estrogens and progestins, androgens, adrenocortical hormones, insulin, glucagon, agents affecting calcification and bone turnover.
13. Drug addiction and drug abuse.

##### 4.3. Education outcomes in the discipline

Code	A student, who passed the course	Relation to teaching outcomes
within the scope of <b>KNOWLEDGE:</b>		
W01	knows genetic mechanisms, the acquisition of drug resistance by microorganisms and tumor cells;	C.W11.
W02	defines individual groups of drugs;	C.W34.
W03	knows the main mechanisms of the effects of drugs and their transformations in the organism depending on the age;	C.W35.



U02		+																		
U03		+																		
U04		+																		
U05		+	+																	
U06			+																	
U07			+																	

\*delete as appropriate

4.5. Criteria of assessment of the intended teaching outcomes		
Form of classes	Grade	Criterion of assessment
lecture (L)	3	61%-68% Learning programme content on the basic level, replies chaotic, leading questions necessary.
	3,5	69%-76% Learning programme content on the basic level, answers systematized, requires assistance from the teacher.
	4	77%-84% Learning programme content on the basic level, answers systematized, independent. Solving of problems in typical situations.
	4,5	85%-92% The scope of presented knowledge exceeds the basic level based on the supplementary literature provided. Solving of problems in new complex situations
	5	93%-100% The scope of presented knowledge exceeds the basic level based on independently acquired scientific sources of information.
classes (C)*	3	61%-68% Learning programme content on the basic level, replies chaotic, leading questions necessary.
	3,5	69%-76% Learning programme content on the basic level, answers systematized, requires assistance from the teacher.
	4	77%-84% Learning programme content on the basic level, answers systematized, independent. Solving of problems in typical situations.
	4,5	85%-92% The scope of presented knowledge exceeds the basic level based on the supplementary literature provided. Solving of problems in new complex situations
	5	93%-100% The scope of presented knowledge exceeds the basic level based on independently acquired scientific sources of information.

- **Thresholds are valid from 2018/ 2019 academic year**

#### 5. BALANCE OF ECTS CREDITS – STUDENT’S WORK INPUT

Category	Student's workload
	Full-time studies
<i>NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/</i>	
<i>Participation in lectures*</i>	<b>60</b>
<i>Participation in classes, seminars, laboratories*</i>	<b>100</b>
<i>Preparation in the exam/ final test*</i>	
<i>Others*</i>	
<i>INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/</i>	
<i>Preparation for the lecture*</i>	
<i>Preparation for the classes, seminars, laboratories*</i>	<b>100</b>
<i>Preparation for the exam/test*</i>	<b>40</b>
<i>Gathering materials for the project/Internet query*</i>	
<i>Preparation of multimedia presentation</i>	
<i>Others*</i>	
<b>TOTAL NUMBER OF HOURS</b>	<b>300</b>
ECTS credits for the course of study	<b>12</b>

Accepted for execution (date and signatures of the teachers running the course in the given academic year)

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