



Educational objectives (max. 6 items)				
C1. to familiarize students with the principles of rational pharmacotherapy, presenting the benefits and risks associated with drug use				
C2. to teach students how to verify the sources of information about drugs and the evaluation (based on scientific evidences) of medical publications and advertisements about drugs				
C3. to teach students general concepts and issues of pharmacodynamics, pharmacokinetics and pharmacoconomics				
C4. to teach students the principles of drugs action and dosage, routes of administration, their mechanisms of action, pharmacological and clinical effects, basic pharmacokinetic properties, the indications, contraindications, adverse effects and main interactions				
C5. to teach students determining the dosage of medicines in children and adults in various clinical conditions				
C6. to teach students the general rules of order writing and practical drug prescribing and orders for nurses				
Education result matrix for module/course in relation to verification methods of the intended education result and the type of class				
Number of course education result	Number of major education result	Student who completes the module/course knows/is able to	Methods of verification of intended education results (forming and summarizing)	Form of didactic class <i>**enter the abbreviation</i>
W01, W02, W03	C.W.34,	characterizes separate groups of therapeutic agents;	written or oral exam, test, oral answer, oral presentation, practical training in multiple choice tests	L+MC
	C.W.35,	knows the main mechanisms of drugs' action and their changes in the system depending on age;		
	C.W.36,	determines the influence of disease on the metabolism and elimination of drugs;		
	C.W.37,	knows the basic rules of pharmacotherapy;		
	C.W.38,	knows important adverse effects of drugs, including those resulting from their interaction;		
	C.W.39,	understands the problem of drug resistance, including multidrug drug resistance;		
	C.W.40,	knows the indications for genetic tests carried out to individualize pharmacotherapy;		
	C.W.41,	knows the basic directions of therapy development, in particular the possibilities of cell therapy and gene therapy and targeted therapy in specific diseases;		



	C.W.42,	knows the basic concepts in the field of general toxicology;		
	C.W.43,	knows groups of drugs which use can lead to poisoning;		
	C.W.44,	knows the symptoms of the most common acute poisoning, including alcohol, drugs and other psychoactive substances, heavy metals and selected drug groups;		
	C.W.45	knows the basic principles of diagnostic procedures in poisoning;		
U01, U02	C.U.13,	performs simple pharmacokinetic calculations;	test, oral answer, oral presentation, practical training in multiple choice tests and drug calculations, exam in drug calculations	MC
	C.U.14,	orders drugs at appropriate doses to correct pathological phenomena in the body and in particular organs;		
	C.U.15,	designs a scheme of rational chemotherapy, empirical and targeted;		
	C.U.16,	correctly prescribes all forms of prescription of medicinal substances;		
	C.U.17,	uses pharmaceutical guides and databases on medicinal products;		
	C.U.18,	estimates toxicological hazard in specific age groups and in liver and kidney failure, and knows how to prevent drug poisoning;		
	C.U.19	interprets the results of toxicological tests		

** L - lecture; SE - seminar; AC – auditorium classes; MC – major classes (non-clinical); CC – clinical classes; LC – laboratory classes; SCM – specialist classes (magister studies); CSC – classes in simulated conditions; FLC – foreign language course; PCP practical classes with patient; PE – physical education (obligatory); VP – vocational practice; SS – self-study, EL – E-learning.



Please mark on scale 1-5 how the above effects place your classes in the following categories: communication of knowledge, skills or forming attitudes:

Knowledge: +++

Skills: ++

Student's amount of work (balance of ECTS points)

Student's workload (class participation, activity, preparation, etc.)	Student Workload (h)
1. Contact hours:	150
2. Student's own work (self-study):	135
Total student's workload	285
ECTS points for module/course	10
Comments	

Content of classes

Lecture – winter semester (15 x 90 minutes) – 30 lecture hours

1. General pharmacology - introduction
2. General pharmacology - LADME
3. General pharmacology – LADME – cont., pharmacokinetics
4. General pharmacology - variation in drugs' action. Adverse and toxic reactions
5. Autonomic nervous system – physiology, drugs acting on ganglia, endogenous catecholamines
6. Autonomic nervous system – synthetic adrenomimetics, adrenergic antagonists
7. Autonomic nervous system – cholinergic system
8. Hormones of hypothalamus, pituitary gland. Hormones of thyroid gland and antithyroid drugs.
9. Insulin and other hypoglycemic drugs
10. Hormones of adrenal gland (glucocorticoids, mineralocorticoids, adrenocortical antagonists)
11. Sex hormones.
12. Bone homeostasis.
13. Iron and hematopoiesis
14. Respiratory tract
15. Gastrointestinal tract

Lectures – summer semester (14 x 97 minutes) – 30 lecture hours

1. Diuretics
2. Lipid-lowering drugs
3. Heparins, oral anticoagulants. Antiplatelet drugs. Thrombolytic agents.
4. Therapy of chronic heart failure (RAA system - ACEI, ARB, RI, cardiac glycosides and other inotropic agents)
5. Therapy of ischemic heart disease (BB, CCB, vasodilators)
6. Therapy of arterial hypertension. Pulmonary hypertension.
7. Antiarrhythmic drugs.
8. Eicosanoids. NSAIDS. Non-opioid analgesics. Therapy of gout and rheumatoid arthritis.
9. Opioid analgesics and antagonists.
10. Autacoids – histamine, serotonin and ergot alkaloids.
11. Toxicology. Therapeutic and toxic potential of OTC drugs. Herbal preparations and dietary supplements.
12. Vitamins, mineral substances.
13. Selected aspects of drug-induced toxicity.
14. Selected aspects in pharmacology – review lecture.



Classes – winter semester (15 x 135 minutes) – 45 lecture hours

1. Regulations of the classes and lectures in Pharmacology and Toxicology. General rules of order writing. Drug development and regulation.
2. Introduction to chemotherapy - clinical use of antimicrobial agents (Chapter 51). Management of anaphylactic shock. Dosage forms of drugs. Drug calculations.
3. Cell wall synthesis inhibitors and daptomycin. Dosage forms of drugs. Drug calculations.
4. Protein synthesis inhibitors. Dosage forms of drugs. Drug calculations.
5. Quinolones, sulphonamides, co-trimoxazole. Other drugs and antiseptics. Antimycobacterial drugs. Dosage forms of drugs. Drug calculations.
6. Antifungal drugs. Dosage forms of drugs. Drug calculations.
7. Antiviral drugs. Dosage forms of drugs. Drug calculations.
8. Practical training in multiple choice tests – part 1
9. Antiprotozoal drugs. Anthelmintic drugs. Dosage forms of drugs. Drug calculations.
10. Anticancer chemotherapy. Dosage forms of drugs. Drug calculations.
11. Immunomodulators. Biological treatment and gene therapy. Dosage forms of drugs. Drug calculations.
12. Review class. Dosage forms of drugs. Drug calculations
13. Practical training in multiple choice tests – part 2.
14. Practical training in drug calculations and prescription writing – part 1.
15. Made-up classes. Possibility to obtain positive degrees.

Classes – summer semester (15 x 135 minutes) – 45 lecture hours

1. General anesthetics. Dosage forms of drugs. Drug calculations.
2. Local anesthetics. Dosage forms of drugs (local anesthetics). Drug calculations.
3. Spasmolytics, myorelaxants, drugs affecting neuromuscular transmission. Dosage forms of drugs. Drug calculations.
4. The alcohols and drugs abuse. Dosage forms of drugs. Drug calculations.
5. Antipsychotic drugs and lithium. Dosage forms of drugs. Drug calculations.
6. Review class. Dosage forms of drugs. Drug calculations.
7. Mood disorders, antidepressants. Drug calculations.
8. Practical training in multiple choice tests – part 3.
9. Hypnotic-sedative and anxiolytic drugs. Dosage forms of drugs. Drug calculations.
10. Neurodegenerative disorders. Dosage forms of drugs. Drug calculations.
11. Antiepileptic drugs. Dosage forms of drugs. Drug calculations.
12. Review class. Dosage forms of drugs. Drug calculations.
13. Practical training in multiple choice tests – part 4.
14. Practical training in drug calculations and prescription writing – part 2.
15. Made-up classes. Possibility to obtain positive degrees.

Basic literature (list according to importance, no more than 3 items)

1. Basic & Clinical Pharmacology, Katzung BG, Mc Graw Hill, 13th Ed, 2015.
2. Katzung & Trevor's Pharmacology Examination and Board Review, 11th Ed, 2015
3. Brenner GM: Pharmacology 4th Ed, Saunders/Elsevier, 2013

Additional literature and other materials (no more than 3 items)

1. Wecker L: Brody's human pharmacology. 5th Ed, Mosby/Elsevier, 2010
2. Rang and Dale's Pharmacology. HP Rang, MM Dale, JM Ritter, RJ Flower, Churchill Livingstone Elsevier, 8th Ed, 2015.
3. Howland RD, Mycek MJ, Harvey RA, Champe PC: Lippincott's illustrated reviews: pharmacology, Lippincott Williams and Wilkins, 6th Ed, 2014

Didactic resources requirements (e.g. laboratory, multimedia projector, other...)

multimedia projector, interactive board



Preliminary conditions (minimum requirements to be met by the student before starting the module/course) – basic knowledge of selected aspects in anatomy, physiology, pathophysiology, microbiology and biochemistry

Conditions for completing the course: specify the terms and conditions for completing the classes included in the subject's scope, specify the requirements the student must meet to be allowed to sit in the theoretical and/or practical exam, specify the form of the exam and the requirements for passing the exam, specify the criteria for particular grades

Conditions for completing the individual classes:

Presence on classes is obligatory.

Conditions for completing each semester:

Besides required presence on classes (missed not more than 10%) student is obliged to gain in each semester 2 positive marks from multiple choice test, 1 positive mark from practical drug calculations and 1 positive mark from oral answer.

To take the final exam:

Completing both semesters within time according to the regulations of the study.

Final theoretical exam:

Final is exam is in a form of test – 100 questions in the first term and during the first retake. To pass the test 60% of correct answers are required. The level may be only decreased in some situations. Theoretical exam may be in written (open questions) or oral form (to pass the oral exam correct answers on all of 3 chosen questions are required) in case of a smaller number of students during e.g. first or second retake or commission exam.

Final practical exam (drug calculation and order writing):

Final practical exam is written before theoretical test and is required to take theoretical part of the exam. To pass drug calculation test correct calculations and writing of the 2 prescriptions and 1 order for the nurse are required.

Grade:	Criteria (only for courses/modules ending with an examination)
Very Good (5.0)	92%
Good Plus (4.5)	84%
Good (4.0)	76%
Satisfactory Plus (3.5)	68%
Satisfactory (3.0)	60%

Name and address of module/course teaching unit, contact: telephone and e-mail address

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Coordinator / Person responsible for module/course, contact: telephone and e-mail address

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List of persons conducting specific classes: full name, degree/scientific or professional title, discipline, performed profession, form of classes.

Classes:

Anna Merwid-Ląd MD, PhD;
Tomasz Sozański MD, PhD,
Dorota Książczyńska, MD, PhD
Monika Skrzypiec-Spring MD, PhD,
Beata Nowak MD, PhD

Lectures

Anna Merwid-Ląd MD, PhD

Date of Syllabus development

30.06.2017

revised 08.03.2018

Syllabus developed by

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Signature of Head of teaching unit

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FACULTY OF MEDICINE
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