



Pharmacology

1. IMPRINT	
Academic Year	2022/2023
Department	Faculty of Dental Medicine
Field of study	English Dentistry Division
Main scientific discipline <i>(in accord with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)</i>	Medical Science
Study Profile <i>(general academic / practical)</i>	General academic
Level of studies <i>(1st level / 2nd level / uniform MSc)</i>	Uniform Master's studies
Form of studies	Stationary
Type of module / course <i>(obligatory / non-compulsory)</i>	Obligatory
Form of verification of learning outcomes <i>(exam / completion)</i>	Exam
Educational Unit / Educational Units <i>(and address / addresses of unit / units)</i>	Chair and Department of Experimental and Clinical Pharmacology Centre for Preclinical Research and Technology CePT, Banacha 1b, 02-927 Warsaw, tel. (+48) 022 1166160

Head of Educational Unit / Heads of Educational Units	Prof. Dagmara Mirowska-Guzel, MD, PhD tel. (+48) 022 1166160
Course coordinator (title, First Name, Last Name, contact)	Prof. Dagmara Mirowska-Guzel, MD, PhD; dmirowska@wum.edu.pl tel. (+48) 022 1166160
Person responsible for syllabus (First name, Last Name and contact for the person to whom any objections concerning syllabus should be reported)	Prof. Dagmara Mirowska-Guzel, MD, PhD; dmirowska@wum.edu.pl tel. (+48) 22 1166160 Coordinator of the didactic: Dr. Aleksandra Wisłowska-Stanek; aleksandra.wislowska-stanek@wum.edu.pl
Teachers	Ewa Widy-Tyszkiewicz MD, PhD, SciD; ewa.widy-tyszkiewicz@wum.edu.pl Aleksandra Wiśłowska-Stanek, MD, PhD; aleksandra.wislowska-stanek@wum.edu.pl Marcin Granat, Msc; marcin.granat@wum.edu.pl

2. BASIC INFORMATION

Year and semester of studies	III year, V and VI semester	Number of ECTS credits	7
FORMS OF CLASSES		Number of hours	ECTS credits calculation
Contacting hours with academic teacher			
Lecture (L)		15	0,6
Seminar (S)		25	1
Discussions (D)			
e-learning (e-L)			
Practical classes (PC)		35	1,4
Work placement (WP)			
Unassisted student's work			
Preparation for classes and completions		100	4

3. COURSE OBJECTIVES

O1	Learning the rules about rational pharmacotherapy
O2	Understanding the basic benefits, adverse effects and toxicity associated with pharmacotherapy

4. STANDARDS OF LEARNING – DETAILED DESCRIPTION OF EFFECTS OF LEARNING (concerns fields of study regulated by the Regulation of Minister of Science and Higher Education from 26 of July 2019; does not apply to other fields of study)

<p>Code and number of effect of learning in accordance with standards of learning (in accordance with appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019)</p>	<p>GENERAL LEARNING EFFECTS:</p>
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Knowledge – Graduate* knows and understands:

C.W5.	principles of disinfection, sterilization and aseptic procedures;
C.W9.	the phenomenon of drug resistance;
C.W18.	mechanisms drug action as well as pharmacokinetics and biotransformation of individual drug groups;
C.W19.	indications and contraindications to the use of drugs, their dosage, side effects and toxic effects, and drug interactions;
C.W20.	principles of the treatment of viral, bacterial, fungal and parasitic infections;
C.W21.	principles of preventing and combating pain and anxiety, as well as the pharmacology of medications used in life-threatening situations;
C.W 22.	principles of prescribing selected forms of ready-made and prescription medication;

Skills– Graduate* is able to:

C.U2.	interpret the results of microbiological, serological and antibiogram tests;
C.U8.	select medicines in appropriate doses and prescribe medicines according to indications;

* In appendix to the Regulation of Minister of Science and Higher education from 26th of July 2019 „graduate”, not student is mentioned.

5. ADDITIONAL EFFECTS OF LEARNING (non-compulsory)

Number of effect of learning	Effects of learning i time
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Knowledge – Graduate knows and understands:

K1	-
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Skills– Graduate is able to:

S1	-
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Social Competencies – Graduate is ready for:

SC1	providing the patient with basic information on the effectiveness, limitations and risks association with pharmacotherapy in dentistry;
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6. CLASSES		
Form of class	Class contents	Effects of Learning
Lectures	L 1 – Lecture 1. Sources of information about drug During lecture the student learns about reliable sources of information about drugs.	C.W18., C.W19.
	L 2 – Lecture 2. Antiarrhythmic drugs Student learns about antiarrhythmic drugs and basic rules treatment of arrhythmia with particular emphasis on adverse effects.	C.W18., C.W19., C.W19., C.U8.
	L 3 – Lecture 3. Lipid lowering drugs. Treating of obesity Student learns about drugs used in the treatment of dyslipidemia and obesity.	C.W19., C.W5., C.W21.
	L 4 – Lecture 4. Drugs used in pregnancy and lactation. Student learns about rules of treatment during pregnancy and sources of information about safety of drugs during pregnancy.	C.W19., C.U8.
	L 5 – Lecture 5. Treatment of elderly patient. Student learns about rules of treatment during pregnancy and sources of information about safety of drugs in elderly people.	C.W19., C.U8.
	L 6 – Lecture 6. Drugs used in headaches Student learns about basic types of headaches and abortic and prophylactic drugs in migraine.	C.W18., C.W19., C.W21
	L 7 – Lecture 7. Treatment of poisoning Student knows common toxic syndromes (toxidromes) and toxins and antidota	C.W19., C.U8.
	L 8 – Drugs used in the shock treatment. Student learns about types of shock and rules of their diagnosis and learns about proper treatment in the shock depending on their etiology.	C.W9., C.W13., CW18, CW19, C.W20.
Seminar	S 1 – Seminar 1 - General pharmacology. Rules of pharmacokinetics and pharmacodynamics. Pharmacokinetics and pharmacodynamics parameters LADME (absorbtion, distribution, metabolism, excretion), rules and mechanism of action drugs.	C.W18.
	S 2 – Seminar 2 - Pharmacology of gastrointestinal tract Treatment of gastrointestinal diseases: gastic and duodenal ulcers, diarrhea, constipation and eradication of Helicobacter pylori.	C.W18.; C.W19.
	S 3 – Seminar 3 - The respiratory system drugs Groups of drugs used in the treatment of asthma and chronic obstructive pulmonary disease. Information about expecrants and mucolitics.. Mechanisms and adverse effects.	C.W18., C.W19.

	<p>S 4 – Seminar 4. Drugs used in general anesthesia</p> <p>Basic principles of premedications and general anesthesia. Groups of drugs used in anesthesia: mechanism of action, effectiveness and adverse effects.</p>	C.W18., C.W19.,
	<p>S 5 – Seminar 5 - Drugs used in hypertension</p> <p>Rules of the hypertension treatment. Groups of drug used in the treatment in the hypertension. Mechanism of action, adverse effects, contraindications.</p>	C.W18., C.W19.
	<p>S 6 – seminar 6 - Non-narcotic analgesic drugs</p> <p>Rules of analgesia treatment. Analgesic ladder. Mechanism of action of non-narcotic analgesic drugs.</p>	C.W18., C.W19., C.W21.
	<p>S 7 – Seminar 7 - Narcotic analgesic drugs</p> <p>Basic indication of narcotic analgesic. Mechanism of adverse effects. Overdose management.</p>	C.W18., C.W19., C.W21.
	<p>S8-Seminar 8 – Cholinergic pharmacotherapy Groups of drugs activating and blocking parasympathetic system. Indications, contraindications and adverse effects of drugs.</p>	C.W18., C.U8.
	<p>S9 -Seminar 9- Drugs acting on sympathetic system.</p> <p>Groups of drugs that activate or inhibit sympathetic system. Indications, contraindications and adverse effects of groups affecting alpha and beta-adrenergic receptors.</p>	C.W18., C.W19.
	<p>S10-Seminar 10 – Drugs used in the treatment of diabetes. The rules of treatment of diabetes type 1 and 2. Forms of insulin, the rules of their use, adverse effects. Groups of non-insulin antidiabetic drugs, mechanism of action and adverse effects.</p>	C.W18., C.W19.,
	<p>S11-Seminar 11 – Glucocorticosteroids.</p> <p>Mechanism of action of glucocorticosteroids, indications and adverse effects.</p>	C.W18., C.W19.,
	<p>S12-Seminar 12 - The gonadal hormones and inhibitors. Oral contraceptives</p> <p>Female and male gonadal hormones. Forms of contraceptives – indications, adverse effects, contraindications. Indications, adverse effects and contraindication of gonadal inhibitors.</p>	C.W18., C.W19.,
	<p>S13-Seminarium 13 – Drugs used in the heart failure.</p> <p>The rules of treatment of the heart failure. The groups of drugs used in the heart failure, their mechanism of action and adverse effects</p>	C.W18., CW19.
Practical classes	<p>PC1-Practical classes 1- disinfectants and antiseptics. Drugs used in dentistry.</p> <p>Basic rules of use of disinfectants and antiseptics. Mechanism of action of individual disinfectant and antiseptic drugs and their adverse effects. The groups of drugs used in dentistry.</p>	C.W5.
	<p>PC2-Practical class 2- Chemotherapy in the dentistry (Antibacterial drugs affecting the cell wall). Mechanism of bacterial resistance. Interpretation of antibiograms. Basic rules of the use of chemotherapy in the dentistry. Groups of chemotherapeutics affecting the bacteria cell wall, their exact mechanism of action, spectrum of antibacteria action, adverse effects.</p>	C.W9, C.W18., C.W19., C.U2.
	<p>PC3-Practical class 3- Chemotherapy in dentistry (Antibacterials affecting the protein or nucleic acid synthesis, or affecting cell membrane). Mechanism of drug resistance.</p>	C.W9., C.W18., C.W20., ., C.U2.

CP4- Practical class – antifungal and antiviral drugs. Groups of drugs used in the fungal and viral infection. Their mechanism of action and adverse effects.	C.W9.C.W18., C.W20.
PC5 – Practical class 5 - The central nervous drugs part 1. (anxiolytics, antidepressants). Groups of drugs used in the pharmacotherapy of anxiety.. Mechanism of action of benzodiazepines, their adverse effects, rules of treatment in case of overdose of benzodiazepines. Groups of antidepressants, mechanism of action, adverse effects.	C.W22., C.U8.
PC6 – Practical class 6 - The central nervous system drugs part 2. (Typical and atypical antipsychotic, drugs used in the treatment of Parkinson disease. Mechanism of action of typical and antipsychotic, adverse effects.	C.W18., C.W19., C.U8.
PC7 – Local anesthetics. Myorelaxants. Rules of the treatment of local anesthetics, myorelaxants. Groups of drugs used as local anesthetic and myorelaxants.	C.W18., C.W19., C.U8.
PC8- Practical class – Prescription writing. Principles of writing of prescription.	C.W22., K1
PC9 – Practical classes 9 – Assessment of prescription writing.	C.W22..
PC10 – Practical class 10- Antiepileptic drugs. Groups of antiepileptic drugs. Mechanism of action, adverse effects.	C.W18., C.W19., C.U8.
PC 11 – Practical class 11 – Antiallergic drugs. Antiallergic drugs of the first and second generation. Mechanism of action, adverse action.	C.W18., C.W19., C.W21., C.U8.
PC12 – Practical class 12 – Treatment of ischemic heart disease. Groups of drugs used in the treatment of ischemic heart disease. Mechanism of action adverse effects.	C.W9., C.W20., C.U2., C.U8.
PC13 – Practical class 13 - The hypothalamic and pituitary hormones. Thyroid and antithyroid drugs.	C.W19., C.U8.

7. LITERATURE

Obligatory

1. Katzung B, Masters S, Trevor A. Basic and Clinical Pharmacology 14/E (LANGE Basic Science), Appleton-Lange Medical Publications 2017
2. Rang & Dale's Pharmacology 9th Edition - November 4, 2018

Supplementary

Goodman and Gilman's the Pharmacological Basis of Therapeutics. McGraw-Hill Professional; 13 edition, 2017

8. VERIFYING THE EFFECT OF LEARNING		
Code of the course effect of learning	Ways of verifying the effect of learning	Completion criterion
<i>e.g. G.K1, G.S1, K1</i>	<i>This field defines the methods used for grading students e.g. pop quiz, test, written report etc.</i>	<i>e.g. threshold number of points</i>
C.W5., C.W9., C.W18., C.W19., C.W20., C.W21., C.W22., C.U2, C.U8., K1.	Multiple choice test, second term oral	>50%

9. ADDITIONAL INFORMATION <i>(information essential for the course instructor that are not included in the other part of the course syllabus e.g. if the course is related to scientific research, detailed description of, information about the Science Club)</i>
<ol style="list-style-type: none"> 1. Seminars and lectures are obligatory. 2. One absence at seminars and one absence at lectures during a semester is allowed. 3. Only one class representative can contact the pharmacology teachers (via e-mail or mobile phone) on the behalf of the class. 4. All seminars and lectures are provided in the pdf version by teachers responsible for particular topics. These materials will be delivered in the web site www.e-learning.wum.edu.pl/en within 7 days after seminar or lecture. 5. All applications concerning the didactic problems should be addressed to Head of the Department: Professor Mirowska-Guzel and directed to the Coordinator of the didactic. The decision is made by Head of the Department in the consultation with the Coordinator of the Pharmacology.

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