

		Syl				-)20/20	21					
				raining	· ·									
				Descrip	otion	of the	cours	e						
Module/Course		Group of detailed education results												
	Phar	maco	ology		Group code Group name									
					С	-			preclinical subjects					
										•				
Faculty		Dent	tistry											
Major		Dentistry												
Unit realizing the subject		Department of Pharmacology												
Specialties		n/a												
Level of studies		Unif	orm	magiste	er sti	udies X	〈 *							
		1 st d	egre	e studie	es 🗌									
		2 nd c	legre	e studi	es 🗌									
		3 rd d	egre	e studi	es 🗌									
		postgraduate studies												
Form of studies		X fu	ll-tim	ne X	part-	time								
Year of studies								Seme	ster	X Wi	nter	er		
										X Su	Immer	er		
Type of course		X obligatory												
		□ limited choice												
		□ free choice / elective												
Course		najor 🗆 basic												
Language of instruction		□ Polish X English □ other												
* mark \square with an X		1												
				Nu	mbe	r of hc	ours							
				For	m of	educa	ition							
			AC)	Major Classes – not clinical (MC)		-C)		_	Specialist Classes – magister studies (SCM)	urse		(VP)	nwo	
			ses (- not	(CC)	sses (lated	s wit	es – r	ge Co	ion	tice	dent's	
Unit teaching the	()	(SE)	Auditorium classes (AC)	sses -	Clinical Classes (CC)	Laboratory Classes (LC)	Classes in Simulated Conditions (CSC)	Practical Classes with Patient (PCP)	Class CM)	Foreign language Course (FLC)	Physical Education obligatory (PE)	Vocational Practice (VP)	Self-Study (Student's own work)	(EL)
course	Lectures (L)	Seminars (SE)	toriur	or Cla:	cal Cla	rator	ies in lition:	tical C int (Pr	ialist es (S(ign la	Physical Educat obligatory (PE)	tiona	Study :)	E-learning (EL)
	Lectu	Semi	Audi	Majc (MC)	Clinio	Labo	Class	Praci Patie	Spec studi	Foreig (FLC)	Phys oblig	Voca	Self-St work)	E-lea
Winter Semester		I	1	1	1	I	1	1	I		1	I	1	
Direct (contact) education				10										
online learning (synchronous)	10		10											
Online learning (asynchronous)														
Summer Semester														
Direct (contact) education				12,5										
online learning (synchronous)	10	10		12,5										
Online learning (asynchronous)														



Direct (contact) ed	lucation			22 5										
				22,5										
online learning (sy	nchronous)	25 2	20	22,5										
Online learning														
(asynchronous)														
Educational ob C1. to familiarize associated with C2. to teach stur- evidences) of m C3. to teach stur- pharmacoecono C4. to teach stur- action, pharmac adverse effects C5. to teach stur- C6. to teach stur-	e students wi drug use dents how to edical publica dents general omics dents the prir cological and o and main inte dents determ	th the verify tions a conce nciples clinical eractio ining t	principle the sour and adve pts and of drug effects, ns he dosa	rces of in ertiseme issues of s action a basic ph ge of me	format nts abc f pharm and dos narmace	tion a but dr nacod sage, okine s in ch	bout c ugs ynam routes tic prc ildren	Irugs a ics, ph s of ad opertie and a	nd the armaco ministra s, the ir dults in	evaluat kinetic ation, t ndicatio variou	tion (ba s and heir me ons, cor s clinica	sed on chanisr itraindic	scientif ns of cations tions	
Education re														n
		-	• -	result a									-	
Number of course education result	Number of major education res	r		/ho comp ourse knc				ve in re	ethods rificatio tended sults (fo mmariz	n of educatio rming a		Form of class **enter t abbrevia	the	С
C.W	C.W9.			nd under enon of d			ice;	e	ritten kam, te	est, ora		L, SE, I	ИС	
	C.W12.	a k c f	adaptati propensi compens	ne notion on, resist ty, susce sation mo c and "vio sm	tance, i ptibilit echanis	mmu y, sms,		p p ir	nswer, resenta ractica multi ests	ation, I traini	-			
	C.W18.	r V k	mechani well as p	nd under sms of a harmacc formatio f drugs;	ction of kinetic	f drug s and								
	C.W19.		knows th contrain dosage, a and drug	ne indicat dications adverse a g-drug int	for dru and tox teractic	ugs, tl tic eff ons;								
	C.W20.	F a	orinciple antifung	nd under s of antiv al and ar	viral, ar itiparas	ntibac sitic th								
	C.W21.	A C	orinciple combati	nd under s of prev ng pain a cology of	renting nd anx drugs u	and iety a								



indications; oral presentation, practical training in multiple choice tests and drug calculations, exam in drug calculations SE, MC *** L - lecture; SE - seminar; AC - auditorium classes; MC - major classes (non-clinical); CC - clinical classes; LC - labora SCM - specialitic classes (magister studies); CSC - classes in simulated conditions; FLC - foreign language course; PCP pra 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: +++ Student's amount of work (balance of ECTS points) Student Workload (h) (class participation, activity, preparation, etc.) 1. 1. Contact hours: 22,5 2. 2. 3. 3. 3. 2. Online learning hours (e-learning): 67,5 3. 3. 3. 3. 3. 3. Student's own work (self-study): 180 180 100 100 Content of classes (please enter topic words of specific classes divided into their didactic form and remember hot translated to intended educational effects) 270 Lectures - 25 lecture hours 1. General pharmacology - introduction, mechanisms of dr		C.W22.	knows and correctly prescribes all forms of prescription of medicinal substances;			
c.U C.U8. calculates corrects doses and prescribes drugs according to indications; oral presentation, practical training in multiple choice tests and drug calculations, exam in drug calculations, exam in drug calculations. *** L - lecture; SE - seminar; AC = auditorium classes; MC = major classes (non-clinical); CC = clinical classes; LC = labora calculations are indrug calculations. SE, MC *** L - lecture; SE - seminar; AC = auditorium classes; MC = major classes (non-clinical); CC = clinical classes; LC = labora calculations are indrug calculations. SE, MC *** L - lecture; SE - seminar; AC = auditorium classes; MC = major classes (non-clinical); CC = clinical classes; LC = labora calculation of knowledge, sills of some offects place your classes in the following categories: communication of knowledge, skills or forming attitudes: Knowledge: +++ Skudent's amount of work (balance of ECTS points) Student Workload (h) Class participation, activity, preparation, etc.) 180 1. Contact hours: 22,5 2. Online learning hours (e-learning): 67,5 3. Student's own work (self-study): 180 Total student's workload 270 ECTS points for module/course 6 Content of classes (please enter topic words of specific classes divided into their didactic form and remember ho translated to intended educational effects) Lectures - 25 lecture hours . 1. General pharmacology – pharmacokine	W	F.W13.	antibiotic therapy and antibiotic			
C.U C.U8. calculates corrects doses and prescribes drugs according to indications; test, oral answer, oral presentation, practical training in multiple choice tests and drug calculations, exam in drug calculations *** L - lecture; SE - seminar; AC – auditorium classes; MC – major classes (non-clinical); CC – clinical classes; IC – labora SCM – specialist classes (magister studies); CSC – dasses in simulated conditions; FLC – foreign language course; PCP pra with patient; PE – physical education (bilgatory); VP – vocational practice; SS – self-study, EL – E-learning . SE Please mark on scale 1-5 how the above effects place your classes in the following categories: communication of knowledge, skills or forming attitudes: Student Workload (h) (class participation, activity, preparation, etc.) 1. Contact hours: 22,5 2. Online learning hours (e-learning): 67,5 3. Student's workload 270 Contact hours: 270 270 ECT spoints for module/course 6 Content of classes (please enter topic words of specific classes divided into their didactic form and remember ho translated to intended educational effects) 180 Lectures - 25 lecture hours . General pharmacology – introduction, mechanisms of drugs action. . . General pharmacology – uhorduction, Neuromuscular pharmacology. Neuromuscu blocking drugs. Myorelaxants. Spasmolytics. . . . General pharma		F.W16.	dental procedures and basic			
indications; oral presentation, practical training in multiple choice tests and drug calculations, exam in drug calculations (CC - clinical dasses; LC - labora SCM - specialist classes (magister studies); CSC - classes in simulated conditions; FLC - foreign language course; PCP pra with patient; PE - physical education (obligatory); VP - vocational practice; SS - self-study, EL - E-learning . SE, MC 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: +++ Student's amount of work (balance of ECTS points) Student Workload (h) (class participation, activity, preparation, etc.) Student's workload 1. Contact hours: 22,5 2.0 nline learning hours (e-learning): 67,5 3. Student's own work (self-study): 180 Total student's workload 270 Cottact hours: 270 CCTS points for module/course 6 Comments 6 Comments Content of classes (please enter topic words of specific classes divided into their didactic form and remember ho translated to intended educational effects) 1 Lectures - 25 lecture hours 1. General pharmacology – introduction, mechanisms of drugs action. 3. General pharmacology – introduction, Neuromuscular pharmacology. Neuromuscu blocking drugs. Myorelaxants. Spasm	U	C.U8.		test, oral answer,		
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6. Cholinergic system (acetylcholine receptor agonists and antagonists).						
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Summer semester (4 x 113 minutes, 4 x 2,5 hours) – 10 lecture hours						
 Diuretics. Electrolyte disturbances. Drugs for heart failure (CHF) – part 1. Drugs for heart failure – part 2. Drugs for hyperlipidemia. Drugs for coronary artery dise 			-		tony disassa	



3.	Antihypertensive drugs. Antiarrhythmics.
4.	Anticoagulant, antiplatelet and fibrinolytic drugs.
During	the academic year, the order of the topics implemented may change.
Semina	rs – 20 lecture hours
Winter	semester (4 x 113 minutes, 4 x 2,5 hours) – 10 lecture hours
1.	Hypothalamic and pituitary drugs. Thyroid drugs. Dosage forms of drugs. Drug calculations.
	Adrenal steroids and related drugs. Drugs affecting fertility and reproduction. Dosage forms of
	drugs. Drug calculations.
3.	Drugs for diabetes mellitus. Dosage forms of drugs. Drug calculations.
4.	Drugs affecting calcium and bone. Vitamin D and other vitamins. Dosage forms of drugs. Drug
	calculations.
Summe	er semester (4 x 113 minutes, 4 x 2,5 hours) – 10 lecture hours
1.	Sedative-hypnotic and anxiolytic drugs. Dosage forms of drugs. Drug calculations.
2.	Antiepileptic drugs. Neurodegenerative disorders. Dosage forms of drugs. Drug calculations.
3.	Psychoterapeutic drugs (antipsychotic drugs and antidepressants). Dosage forms of drugs. Drug
	calculations.
	Summary of topics from seminars and lectures as a review for the exam.
	the academic year, the order of the topics implemented may change.
	al classes – 45 lecture hours
	semester (10 x 90 minutes) – 20 lecture hours
	Regulation of classes. General rules of order writing.
	NSAIDs, rheumatoid arthritis, gout. Paracetamol. Dosage forms of drugs. Drug calculations.
3.	Opioid analgesics. Analgesic ladder. Dosage forms of drugs. Drug calculations.
	Local and general anesthetics. Dosage forms of drugs. Drug calculations.
5.	Hematopoiesis (iron, vitamin B12, folic acid). Dosage forms of drugs. Drug calculations.
6.	Drugs for gastrointestinal tract disorders. Dosage forms of drugs. Drug calculations.
7.	Drugs for respiratory tract disorders. Dosage forms of drugs. Drug calculations.
8.	Practical training in multiple choice tests part 1. Autacoids. Treatment of allergy and headache disorders.
0	Practical training in drug calculation part 1. Management of anaphylactic shock.
	Summary and discussion about the drugs discussed in the semester. Possibility or retakes of
10.	tests.
Summe	er semester (10 x 113 minutes, 10 x 2,5 hours) – 25 lecture hours
1.	Basis of rational antimicrobial chemotherapy and reasons for antimicrobial therapy failure.
1.	Dosage forms of drugs. Drug calculations.
2.	Inhibitors of bacterial cell wall synthesis. Dosage forms of drugs. Drug calculations.
3.	Inhibitors of bacterial protein synthesis. Dosage forms of drugs. Drug calculations.
4.	Quinolones, antifolate drugs and other antimicrobial agents. Dosage forms of drugs. Drug
	calculations.
5.	Tuberculostatics. Antiparasitic drugs (protozoa, helmints).
6.	Antiviral drugs. Dosage forms of drugs. Drug calculations.
7.	Antifungal drugs. Dosage forms of drugs. Drug calculations.
8.	Practical training in multiple choice tests part 2. Antineoplastic and immunomodulating agents.
9.	Practical training in drug calculation part 2. Summary and discussion about dosage forms of
	drugs, routes of administration, review of basic pharmacokinetic calculations.
10.	Summary and discussion about the drugs discussed in the semester. Possibility for retakes of
	tests.
-	the academic year, the order of the topics implemented may change.
	erature (list according to importance, no more than 3 items)
1.	Brenner GM: Pharmacology Saunders/Elsevier, 5 th Ed,



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

- 1. Rang and Dale's Pharmacology. HP Rang, MM Dale, JM Ritter, RJ Flower, Churchill Livingstone Elsevier, 8th Ed
- 2. Howland RD, Mycek MJ, Harvey RA, Champe PC: Lippincott's illustrated reviews: pharmacology, Lippincott Williams and Wilkins, 6th Ed

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

multimedia projector, interactive board, e-learning platforms (e.g. Testportal, BBB, Edmodo)

Preliminary conditions (minimum requirements to be met by the student before starting the

module/course) - basic knowledge of anatomy, physiology and microbiology

<u>Conditions for completing the individual classes:</u> Presence on didactic classes (contact and distant) is obligatory and making the practical and theoretical assignments from the current lecture/seminar/class topics and/or previous topics. <u>Conditions for completing each semester:</u>

Besides required presence on all didactic classes, student is obliged to gain in each semester 1 positive mark from multiple choice test (25-50), 1 positive mark from practical drug calculations (3-6 cases) and one 1 positive mark from oral answer.

All absences on planned didactic classes during the course, including Dean's hours or Rector's days, must be made up in a form set by the academic teacher.

To take the final exam:

Completing of classes at the date specified by the Rector in the ordinance regarding the organization of the academic year 2020/2021.

Final practical exam (drug calculation and order writing):

Final practical exam is written before theoretical test an is required to take theoretical part of the exam. To pass drug calculation test correct calculations and writing of the 3 examples of prescriptions or order for the nurse are required

Final theoretical exam:

Final is exam is in a form of multiple choice test – 50-100 questions in the first and second term. To pass the test 61% 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 the first or second retake or commission exam.

Grade:	Criteria for passing the course with a grade
Very Good (5.0)	n/a
Good Plus (4.5)	n/a
Good (4.0)	n/a
Satisfactory Plus (3.5)	n/a
Satisfactory (3.0)	n/a
	Criteria for passing the course for credit (no grade)
Credit:	Besides required presence on all didactic classes (contact and distant) student is obliged to gain in each semester 1 positive mark from multiple choice test (30-50 questions), 1 positive mark from practical drug calculations (3-6 cases) and one 1 positive mark from oral answer. All absences on planned didactic classes during the course (contact and distant), including Dean's hours or Rector's days, must be made up in a form set by the academic teacher.

	Criteria (examination evaluation criteria)
Very Good (5.0)	at least 93% of correct answers
Good Plus (4.5)	at least 85% of correct answers
Good (4.0)	at least 77% of correct answers



Appendix to Resolution No. 2186 of Senate of Wroclaw Medical University of 1 July 2020

Satisfactory Plus (3.5)	at least 69% of correct answers
Satisfactory (3.0)	at least 61% of correct answers

Unit realizing the subject	Department of Pharmacology
Unit address	Jana Mikulicza-Radeckiego 2, 50-345 Wrocław
Telephone	+48 71 784 14 38
E-Mail	ewa.kozlowska@umed.wroc.pl

Person responsible for madule:	Anna Merwid-Ląd, MD, PhD
Telephone	71-784-1442
E-Mail	anna.merwid-lad@umed.wroc.pl

List of persons conducting specific classes									
Full name	degree/scientific or professional title	Discipline	Performer profession	Form of classes					
Anna Merwid-Ląd	MD, PhD	medical science	academic tutor	lectures, seminars					
Beata Nowak	MD, PhD, DSc,	medical science	academic tutor	classes					
Tomasz Sozański	MD, PhD, DSc, WMU prof.	medical science	academic tutor	classes					

Date of Syllabus development

Syllabus developed by

25.09.2020

Anna Merwid-Lad, MD, PhD

Beata Nowak, MD, PhD, DSc

Signature of Head of teaching unit

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Signature of Faculty Dean

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