

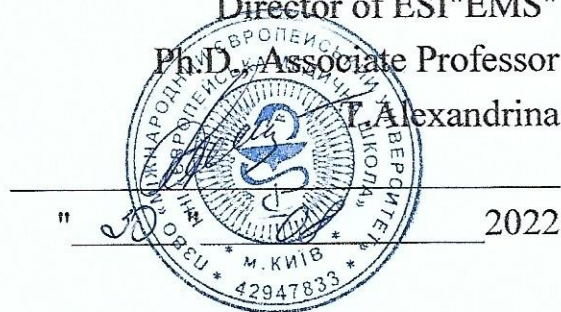
**INTERNATIONAL EUROPEAN UNIVERSITY
EDUCATIONAL AND SCIENTIFIC INSTITUTE
"EUROPEAN MEDICAL SCHOOL"**

APPROVED

Director of ESI"EMS"

Ph.D., Associate Professor

T. Alexandrina




**COURSE TRAINING PROGRAM
on
PHARMACOLOGY**

Degree level	Master
Field of study	22 "Health care"
Specialty	222 "Medicine"

Kyiv - 2022

DEVELOPED AND SUBMITTED: Educational and Scientific Institute "European Medical School", Department of Fundamental and Medical and Preventive Disciplines.

Developed by: M.O. Ostapets, Ph.D., Associate Professor of the Department of Fundamental and Medical Preventive Disciplines, P.I. Sereda, Ph.D., Professor of the Department of Clinical Disciplines with courses in internal medicine, surgery, of pediatrics, obstetrics and gynecology, Brubaker I.O., Ph.D., associate professor of the department of fundamental and medical and preventive disciplines.

Discussed and approved by the Department of Fundamental and Medical Preventive Disciplines №.1 from " 25 " 08 2022
Head of the department Kostynskyi G.B. 

Approved at the meeting of the Scientific Council of the ESI"EMS"
№ 1 of " 29 " 08 of 2022

DESCRIPTION EDUCATIONAL DISCIPLINES

Name indicators	Branch knowledge, specialty, level higher education	Characteristic educational disciplines	
		daytime form teaching	
Number loans - 6	Branch of knowledge 22 "Protection health"	Normative	
	Specialty: 222 "Medicine"	Year preparation	
		3rd	
		Semester	
General number hours – 180		V th	VI
		Lectures	
	Level of higher education: second (master's)	16 hours	8 hours
		Practical	
		48 hours	40 hours
		Independent work	
		26 hours	42 hours
		Kind final control:	
		Test	Exam

1. EXPLANATORY NOTE AND CONTENT PROGRAMS

Program with disciplines "Pharmacology" composed for students by educational and professional program "Medicine", second (master's) level of higher education, specialty 222 "Medicine", branch of knowledge 22 "Protection health", qualifications "Master of medicine Doctor"

Competencies and learning outcomes, the formation of which contributes to the discipline :

- integral:

- *with the* ability to integrate knowledge and solve complex specialized tasks in broad and multidisciplinary contexts of a doctor's professional activity, to solve practical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account the aspects of social and ethical responsibility in the field of health care .

- general and professional:

general competence (ZK)	
ZK 1.	Ability to abstract thinking, analysis and synthesis

ZK 2.	Ability to learn and master modern knowledge.
ZK 3.	Ability to apply knowledge in practical situations.
ZK 4.	Knowledge and understanding of the subject area and understanding of professional activity.
ZK 5.	Ability to adapt and act in a new situation.
ZK 6.	Ability to make informed decisions.
ZK 7.	Ability to work in a team.
ZK 8.	Ability to interpersonal interaction.
ZK 10.	Ability to use information and communication technologies.
ZK 11.	Ability to search, process and analyze information from various sources.
ZK 12.	Determination and persistence in relation to assigned tasks and assumed responsibilities.
Professionals competence (FC)	
FC-5	The ability to determine the nature of nutrition in the treatment and prevention of diseases.
FC-6	Ability to determine the principles and nature of treatment and prevention of diseases.
FC-7	Ability to diagnose emergency conditions.
FC-8	Ability to determine tactics and provide emergency medical care.
FC-11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
FC-16	Ability to maintain medical documentation, including electronic forms.
FC-21	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
FC-23	The ability to develop and implement scientific and applied projects in the field of health care.
FC-24	Adherence to ethical principles when working with patients and laboratory animals.
FC-25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.
Software the results teaching (PRN)	
PRN-1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
PRN-2	Understanding and knowledge of fundamental and clinical biomedical sciences, at a level sufficient for solving professional tasks in the field of health care.

PRN-3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.
PRN -4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
PRN-10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
PRN-14	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and treatment standards.
PRN-21	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
PRN-24	To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.

PHARMACOLOGY as educational discipline:

a) is based on previously studied by students of medical biology, medical physics, medical chemistry, biological and bioorganic chemistry, normal and pathological physiology, Latin languages;

b) lays the foundations for students to study clinical disciplines, which involves integration with by these disciplines and formation skill application of knowledge with pharmacology in process further training and in professional activity

Term study educational disciplines "Pharmacology" is carried out students medical faculty with specialty "Medicine" (normative term teaching) on 3 courses in V and VI semesters: 180 hours

2. PURPOSE STUDY EDUCATIONAL DISCIPLINES

The goal of teaching the educational discipline "**Pharmacology**" is the formation of students theoretical knowledge and acquisition of practical skills regarding the main principles of justification rational and safe for health a person application medical means with purpose treatment and prevention of diseases. Achieving the goal will prepare students for practical activities, quality performing functional responsibilities, connected with rational choice of drugs, independent drawing up of pharmacotherapy schemes and their further implementation

The main ones tasks study disciplines "Pharmacology" is

1. Granting students theoretical of knowledge of definition group belonging medical means, their pharmacokinetics, pharmacodynamics, manifestations possible side actions, symptoms of overdose, measures that prevent the occurrence and contribute to the elimination of undesirable ones reactions;

2. Justification of the main indications for prescribing and interactions with

other medications and acquisition practical skills discharge recipes on drugs in different medical forms

IN as a result study disciplines "Pharmacology" student should know:

- Pharmacological characteristic basic pharmacological means and their mechanisms actions
- Nomenclature and classification medical means
- Indication to application medical means in accordance of knowledge pharmacodynamics, adequate medical form, ways introduction and interaction with by others medicines
- Manifestations possible side actions and symptoms overdose, methods their warning and treatment.
- Rules discharge recipes on drugs in various medicinal forms

IN as a result study disciplines "Pharmacology" student should be able:

- to determine group belonging medical means according to modern classifications
- justify the main ones indication to appointment, adequate medical shape, ways introduction and interaction with by others medicines.
- determine manifestations possible side actions and symptoms overdose, methods their warning and treatment
- evaluate correlation benefit/risk at application medical means
- carry out judgment about possibility occurrence side effects medical means within order to prevent them
- create algorithm help patients at sharp poisoning medicinal means
- understand possibility application antidotes in to everyone specific case
- explain dependence actions medical means from features pharmacokinetics in patients different ages, accompanying diseases and their therapy
- write out and analyze recipes on drugs in different medical forms

IN as a result study disciplines "Pharmacology" student should master skills:

- Write and analyze prescriptions for medicinal products in various dosage forms in accordance to modern legislation of Ukraine.
- Determine group belonging medical means according to modern classifications.
- Give pharmacological characteristic medical means logically to connect mechanism of action with pharmacodynamics, indications, and side effects with contraindications to their application.
- Calculate a single dose of the drug depending on age, body weight or area surface the patient's body.
- Determine the multiplicity depending on the characteristics of the pharmacokinetics of drugs reception medicinal means, his daily course doses in patients different age in accordance to companions diseases and application others medical drugs
- Justify adequate medical form according to the ways of introduction.
- to predict consequences interaction medical means at their combined introductions medical means and components food, medical means and alcohol
- Evaluate correlation benefit/risk at application medical means

–Determine manifestations possible side reactions medical means, symptoms overdose powerful and poisonous medicinal means, methods their warning and principles treatment.

–Present information about side reactions medical means or absence their efficiency.

–Create an algorithm for helping patients with acute drug poisoning with application antidotes in to everyone specific case

3. STRUCTURE EDUCATIONAL DISCIPLINES

The discipline program is structured into four sections.

Section I. Likarska recipe

Section II. Means affecting the central and peripheral nervous system.

Chapter III. Means that affect the function of executive organs and metabolism.

Section IV. Antibacterial middlemen General pharmacology.

STRUCTURE OF THE EDUCATIONAL DISCIPLINE

Names of topics	Lectures	Practical occupation	Individual work student
Section AND. Medical recipe			
1. The main ones position of the law of Ukraine "About medical means". Introduction in medical recipe solid medicalforms	2.0	3.0	-
2. M ' what dosage forms: classification, prescription rules, ways of introduction and features application. liquid medical forms Solutions for external and internal application: classification, rules discharge, ways introduction and features application.	-	3.0	-
3. liquid medical forms (infusion, decoctions, emulsions, potions, tinctures, liquid extracts, new galenov drugs). Rules discharge, ways of introduction. Medicinal forms for other ' actions: requirements to other ' ectional solutions, rules discharge, ways of introduction and features application.	-	3.0	-
Section II. Means, what affect on central and peripheral nervous system			
4. Medicinal products affecting transmission of excitation in cholinergic synapse Cholinergic agents, which affect M-H-cholinerceptors. Anticholinesterases means Reactivators cholinesterase.	2.0	3.0	2.0

5. Cholinergic means, which selectively act on M-cholinoceptors. M-cholinomimetics. M-choline blocking agents means	-	3.0	2.0
6. Pharmacology medical means, whatselectively act on H-cholinergic receptors. N-cholinomimetics. H-choline blocking agentsmeans	-	3.0	2.0
7. Pharmacology medical means, what affect the transmission of excitement in adrenergic synapse: adrenomimetics, sympathomimetics, antiadrenergic medical means, sympatholytics.	2.0	3.0	4.0
8. Means used for general anesthesia Local anestheticsMedicines.	-	3.0	3.0
9. Pharmacology and toxicology of alcohol ethyl and drugs for treatment alcoholism Sleeping pills medical means Antiepileptic, antiparkinsonianmeans	-	3.0	4.0
10. Pharmacology of narcotics and non-narcotic analgesics substances, what cause dependence.	2.0	3.0	4.0
11. Psychotropic medical means withdepressant type of action: antipsychotics, tranquilizers, sedative medical means	2.0	3.0	4.0
12. Psychostimulants. Antidepressants. Means, which are applied atbipolar diseases and SPAU Means that affect serotonergic system	2.0	3.0	6.0
Section III. Means, which affect on function executive bodies and exchange substances			
13. Pharmacology of medicines that affect the function of respiratory organs. Medicines used for treatment bronchial asthma and at swelling lungs	2.0	3.0	6.0
14. Diuretics means Pharmacology means, what reduce contents urinary acid in body Means, what affect on tone and abbreviated activity myometrium	-	3.0	4.0
15. Medicinal products used at deficiencies coronary blood circulation	2.0	3.0	1.0
16. Antiatherosclerotic drugs.	-	3.0	1.0
1. Antihypertensive drugs. Antiarrhythmic means	2.0	3.0	4.0

2. Means, which are used for treatment cardiac deficiencies	-	3.0	4.0
3. Medicinal means, what affect on function bodies digestion (means, which affect on appetite; means, which regulate secretion glands stomach; gastroprotectors, means, what affect the zonal secretory function pancreas; cholelitholytic and means, which affect on motor skills gastrointestinal tract).	2.0	3.0	4.0
4. Pharmacology means, what affect on hematopoiesis	2.0	3.0	2.0
5. Pharmacology means, what affect on system folding of blood	-	3.0	2.0
6. Drugs hormones hypothalamus, pituitary gland, thyroid gland. Antithyroid drugs Insulin preparations and oral sugar-lowering means	2.0	3.0	4.0
7. Drugs hormones bark adrenal glands Drugs sexual hormones and anabolic steroids	-	3.0	2.0
8. Anti-inflammatory medical means Treatment rheumatoid arthritis Antiallergic and immunotropic medical means	-	3.0	4.0
Section IV. Antibacterial middlemen General pharmacology.			
9. Pharmacology of antibiotics 1 (Pharmacology of beta- lactam antibiotics). Pharmacology antibiotics 2 (Pharmacology macrolides, lincosamides, tetracyclines, aminoglycosides, cyclical polypeptides).	-	3.0	2.0
10. Sulfanilamides drugs Synthetic antimicrobial means different chemical structure. Pharmacology of fluoroquinolones.	-	3.0	2.0
11. Pharmacology anti-tuberculosis medical means Antispirochetes, antiprotozoal, antifungal and anthelmintic drugs.	-	3.0	4.0
12. Antiviral drugs. Antiseptic and disinfectant medicinal means Pharmacology drugs calcium, potassium and sodium Control testing with pharmacology by test tasks on type "Step-1". Pharmacology of anticancer drugs medical means	-	3.0	4.0
thirteen. Toxicology. The main ones principles treatment sharp poisoning medicines and poisons General pharmacology. Pharmacokinetics. Pharmacodynamics. Mechanisms actions medicines	-	4.0	4.0
EVERYTHING HOURS:	24	88	68

CONTENT EDUCATIONAL DISCIPLINES

SECTION AND. MEDICINE PRESCRIPTION .

Topic 1. The main ones position of the law of Ukraine "About medical means".
Introduction in medical recipe Solid dosage forms.

Definition concepts: medical substance, preparation, form. Recipe as medical, legal and financial document. Forms prescription forms, their appointment, using and storage. general rules discharge recipes on medicine for ambulatory patients Features of storage, prescription and dispensing of narcotic drugs. Discharge rules, storage and release of poisonous and potent agents. Rules for prescribing and dispensing medicines free and on preferential conditions

Definition pharmacopoeias, species pharmacopoeia. State pharmacopoeia, her content and appointment.

State Pharmacopoeia of Ukraine, her content and appointment.

Classification medical forms Official and trunk prescriptions General characteristic and classification solid medical forms Rules discharge simple ones and complex, dosed and undosed powders species, characteristic and appointment capsules, discharge rules. Characteristics of tablets and dragees. Rules for their prescription. Meetings, others solid dosage forms, rules discharge

Topic 2. M ' what are the dosage forms: classification, prescribing rules, ways of administration and application features. Liquid dosage forms. Solutions for external and internal application: classification, rules discharge, ways introduction and features application.

General characteristic soft medical forms Characteristic ointment and paste, the difference between them. Substances that are used as bases in the manufacture of ointments and pastes. Rules discharge Characteristic liniments, appointment, rules discharge

General characteristic solutions for external and internal application. Official solutions. Substances used as solvents. Preparation of solutions. Dosage of solutions for internal use. Prescribing solutions, marking methods concentration.

Topic 3. Liquid dosage forms (infusions, decoctions, emulsions, potions, tinctures, liquid extracts, new galenic preparations). Prescribing rules, ways of entering. Medicinal forms for other ' actions: requirements to other ' ectional solutions, rules discharge, ways introduction and features application.

General characteristics infusions and brewed difference in preparation Discharge in recipes General characteristic emulsions, species components parts, preparation. Tinctures, extracts, their characteristics, methods preparation, dosage, prescription in recipes Potions, their characteristics and composition. Syrups, aromatic waters, slimes as components mixture Discharge mixture, their dosage. Novogalenov drugs, their characteristic, difference from galena, ways introduction. Dosage and prescription new galenovy drugs suspensions, their characteristic, differences from solutions Application, discharge

Release forms of drugs for injections. Requirements for injectable dosage forms (sterility, purity, stability, pyrogenicity). Paths their introduction. Forms release medicines for injections Rules discharge medical drugs in ampoules, vials solvents,

which are applied for making solutions for injections

SECTION II. MEASURES AFFECTING THE CENTRAL AND PERIPHERAL NERVOUS SYSTEM

Topic 4. Medicinal means, what affect on transmission excitation in cholinergic synapse Cholinergic means, which affect on M-H-cholinereceptors. Anticholinesterases means Reactivators cholinesterase.

Concept about cholinergic receptors, their localization. Function cholinergic synapse Classification of drugs that affect cholinergic receptors. Chemical structure and main effects acetylcholine. Anticholinesterases tools: pharmacodynamics, mechanism actions, application, side action. Anticholinesterases means: acute intoxication and help victims

Topic 5. Cholinergic means, which selectively act on M-cholinoceptors. M-cholinomimetics. M-choline blocking agents.

M-cholinomimetic tools: pharmacodynamics, mechanism actions and application. sharp intoxication substances M-cholinomimetic actions, clinical picture and treatment. M- cholinergic blocking agents tools: pharmacodynamics, mechanism actions and application. sharp poisoning substances M-choline blocking action, clinical picture and treatment.

Topic 6. Pharmacology of drugs selectively acting on H-cholinergic receptors. N-cholinomimetics. N-choline blocking agents.

Localization of H-cholinergic receptors, general characteristics and classification of H-cholinergic means H-cholinemimetic tools: pharmacodynamics, mechanism actions and indication to application.

Toxic action nicotine Application H-cholinemimetic means for weaning from smoking Ganglioblockers tools: localization and mechanism actions, indication to application, complication.

Muscle relaxants: classification, pharmacodynamics, mechanism of action, indications for use. Possible complication at application muscle relaxants and their antagonists Pharmacogenetics succinylcholine (dithyline).

Topic 7. Pharmacology medical means, what affect on transmission excitation in adrenergic synapses: adrenomimetics, sympathomimetics, antiadrenergic drugs, sympatholytics..

Concept about adrenoceptors, their localization. Classification means, which affect onadrenoceptors.

pharmacodynamics, mechanism actions and application adrenaline, dopamine Comparative pharmacological characteristic norepinephrine, phenylephrine (Mesatone), naphthyzine, isoproterenol (isadrine) and salbutamol. pharmacodynamics, mechanism actions, application ephedrine Tachyphylaxis. Indications to the use of adrenomimetic drugs means

Alpha-adrenoblockers means, pharmacokinetics, pharmacodynamics, mechanism actions, application. Beta blockers: classification, mechanism actions, pharmacokinetics, pharmacodynamics, application, side effects. Cardioselective beta-blockers. Beta- adrenoblockers with internal sympathomimetic activity.

pharmacodynamics, mechanism actions, application, side effects sympatholytic

agents.

Topic 8. Means, which are used for general anesthesia Local anesthetics Medicines.

Definition of the concept of "anesthesia" and its types; requirements for anesthetic agents. Localization, mechanism actions, classification local anesthetics means pharmacodynamics, use and toxicology of cocaine and dicaine. Pharmacology of procaine (novocaine) and benzocaine (anesthesia). Pharmacology lidocaine (xycaine) and trimecaine Application local anesthetics means for different species anesthesia sharp poisoning local anesthetics means, his prevention and treatment.

Classification of anesthetics, their general physicochemical characteristics and principle of action. Sequence actions of means for narcosis to different departments of the central nervous system systems. Inhalation

narcotic means, their pharmacodynamics and application. Possible complication in different stage inhalation anesthesia. Their prevention and help. Comparative evaluation of inhalation anesthetics means (activity, speed effect development, controllability narcosis, latitude narcotic action, side effects). Non-inhalation anesthetics, their pharmacodynamics and features of action, indications and contraindications for use. Combined use of anesthetics and using their from drugs of others pharmacological groups

Topic 9. Pharmacology and toxicology of ethyl alcohol and drugs for treatment alcoholism Sleeping pills medical means Antiepileptic, antiparkinsonian means

Ethyl alcohol, local reflexive and resorptive action. Application in medical practice sharp intoxication ethyl alcohol, principles granting medicinal help Chronic poisoning with ethyl alcohol, its social and medical aspects. Principles treatment alcoholism

Classification and mechanism of action of hypnotics. The relationship between the chemical structure and pharmacological action derivatives barbiturate acid Pharmacodynamics and application phenobarbital. Benzodiazepine derivatives as hypnotics, their pharmacodynamics and application. Principles treatment of insomnia.

sharp poisoning sleeping pills means and principles of provision medicinal help

General characteristics and classification of used antiepileptic drugs for warning and for removal of large and small seizures.

Antiparkinsonian means, mechanism actions, pharmacodynamics and application.

Topic 10. Pharmacology narcotics and non-narcotic analgesics substances, what cause dependence.

General characteristic and classification analgesics means Storage and the main ones pharmacological properties alkaloids opium Pharmacokinetics and pharmacodynamics morphine Mechanism analgesic actions and indication to application morphine Principles granting medicinal help with acute poisoning narcotic substances

Antagonists narcotics analgesics means: drugs, principles their actions and application. Comparative pharmacological characteristic narcotics analgesics drugs

Non-narcotic analgesic tools: pharmacodynamics, mechanism analgesic actions, indication to application. Mechanism antipyretic and anti-inflammatory actions non-narcotic analgesics and their use. Side effects of non-narcotic analgesics, their

prevention. Modern principles chronic pain relief painful syndrome

Medical and social aspects struggle with medicinal addiction

Topic 11. Psychotropic medical means with depressing by type actions: antipsychotics, tranquilizers, sedative drugs means

General characteristics and classification of psychotropic drugs. Pharmacodynamics of derivatives phenothiazine on examples aminazine Mechanism antipsychotic and sedative actions aminazine Indication before the use of aminazine in medical practice

Comparative pharmacological characteristics of antipsychotic drugs. Adverse reactions and complication, which arise at application neuroleptics means, their prevention and treatment. The concept of neuroleptanalgesia.

Pharmacodynamics and use of lithium salts. pharmacodynamics, mechanism actions and application tranquilizers.

pharmacodynamics, mechanism actions and application sedatives means Lateral action and complication, which arise at application tranquilizers and sedatives means; activities prevention, treatment.

Topic 12. Psychostimulants. Antidepressants. Means, which are applied at bipolar diseases and SPAU Means, which affect on serotonergic system

Pharmacodynamics, mechanism of action and use of caffeine. Features of the effect of caffeine on cardiovascular system Pharmacology sydno-karb pharmacodynamics, mechanism actions and application nootropics means

pharmacodynamics, mechanism actions and application analeptic means

Pharmacodynamics and application antidepressants Lateral action and complication, which arise at application antidepressants, activities prevention pharmacodynamics, the mechanism of action and use of drugs affecting the serotonergic system, the concept of serotonin syndrome.

SECTION III. TOOLS WHICH INFLUENCE ON FUNCTION EXECUTIVES BODIES AND EXCHANGE SUBSTANCE

Topic thirteen. Pharmacology medical means, what affect on function bodies breath.

Medicinal means, what are applied for treatment of bronchial asthma and at swelling lungs

Classification medical means, which affect on function bodies breath. Comparative characteristics of analeptic drugs, mechanism of action and indications for use. Classification, pharmacodynamics antitussives and expectorant means, mechanism actions and application. Means used in broncho-obstructive syndrome, mechanism of action, pharmacodynamics, application. Pharmacological characteristics of the agents used at swelling lungs and for the treatment of pulmonary arterial hypertension.

Topic 14. Diuretics. Pharmacology of means that reduce the content of uric acid in body Means that affect on tone and abbreviated activity of the myometrium.

Classification, pharmacodynamics, mechanism of action and use of diuretics, side effects action. Pharmacology and use of emergency diuretics. Potassium-sparing diuretics means: pharmacodynamics, mechanism of action, application. Principles of combined use diuretics pharmacological means

Means that reduce the content of uric acid in the body. Pharmacological principles

therapy acute attack and chronic forms gout

Classification, pharmacological properties and application means what affect on tone and abbreviated activity myometrium

Topic 15. Medicinal means, which are applied at deficiencies coronary blood circulation

Classification antianginal drugs, their general characteristic. Pharmacology nitroglycerin. Nitrates of prolonged action, their pharmacodynamics, mechanism of action, application and side effect. Peculiarities of the mechanism of action and application of β -blockers and ion antagonists calcium as antianginal means, side action.

The main ones principle medicinal treatment sharp heart attack myocardium

Topic 16. Antiatherosclerotic drugs means

Antiatherosclerotic agents, mechanism of action, pharmacokinetic properties, therapeutic application, side effects

Topic 17. Antihypertensive means Antiarrhythmic means

Classification of antihypertensive agents according to the mechanism of action. Alpha - and beta - adrenoblockers, as antihypertensive drugs, mechanism actions, application, side effects Mechanism medical actions antagonists ions calcium at hypertensive disease, application, side effects Mechanism actions inhibitors APF at arterial hypertension, application, side effects The use of diuretics in the treatment of arterial hypertension. Myotropic spasmolytic means, mechanism actions, application at hypertension, side action. Pharmacology clofelin and methyldopa. Ganglioblockers as means to lower blood pressure. Controlled hypotension. pharmacodynamics, mechanism actions sympatholytics, application at hypertensive disease, side action.

Treatment of hypertensive crisis: drugs, routes of administration, doses. Principles combined application antihypertensives means

Classification antiarrhythmics drugs Pharmacology quinidine and novocainamide. Peculiarities of antiarrhythmic action and use of lidocaine (xycaïn), difenin, ethmosine and Aymalin Application beta blockers and antagonists ions calcium as antiarrhythmics

drugs Amiodarone, mechanism actions, application at arrhythmias hearts, side effects Antiarrhythmic properties of drugs potassium and magnesium

Topic 18. Means, which are used for treatment cardiac deficiencies

Classification cardiotonic means Chemical structure cardiac glycosides Role glycone and aglycone in their actions on heart. Pharmacokinetics cardiac glycosides Cardiac and extracardial action cardiac glycosides Mechanism cardiotonic actions cardiac glycosides Electrocardiogram changes under the influence of cardiac glycosides. The essence of therapeutic action of cardiac glycosides at cardiac deficiencies Comparative characteristic drugs cardiac glycosides Indication to application cardiac glycosides Principles appointment. Intoxication cardiac glycosides, her treatment and prevention.

Pharmacology of non-glycoside cardiotonic agents. Mechanism of action, indications for use phosphodiesterase inhibitors. Basic principles of acute and chronic drug therapy cardiac deficiencies

Topic 19. Medicinal means, what affect on function bodies digestion (means,

which affect appetite; means that regulate the secretion of the stomach glands; gastroprotectors, means, what affect on foreign secretary function pancreatic glands; cholelitholytic and means, which affect on motor skills gastrointestinal tract).

The mechanism of the stimulating effect of bitters on appetite and secretion of the glands of the mucous membrane of the stomach. Indications for use. Anorexigenic means, mechanism of action, application, side effects, contraindication.

The principle of action, pharmacodynamics and use of agents that reduce the secretory function stomach Comparative characteristics and use of antacid drugs. Alternative means therapy at deficiencies stomach secretions Means, which strengthen secretion of glands stomach

Principles of combined use of drugs of different groups for the treatment of gastritis, ulcerative stomach diseases and duodenum.

Characteristic drugs, which are applied at violations foreign secretary functions pancreas.

Characteristic, mechanism actions and application drugs, which contribute exit bile pharmacodynamics, mechanism actions, indication and contraindication to application choleric means, which stimulate formation of bile.

Means, which affect on motor function intestines Classification, mechanism actions laxatives means Indication and contraindications before application.

Topic 20. Pharmacology of means, what affect on hematopoiesis

Classification means, which affect on system of blood Pharmacokinetics and pharmacodynamics of iron preparations, their use, side effects. Cobalt preparations. Means, which are applied for treatment megaloblastic and macrocytic anemia mechanism actions Pharmacological properties stimulants leukopoiesis, their application, side action.

Topic 21. Pharmacology means, what affect on system folding of blood

Pharmacodynamics, mechanism of action and use of heparin, complications, condition control collapsible systems of blood Pharmacological properties anticoagulants indirect actions, application, complication. Antagonists.

Mechanism actions and application means, which oppress aggregation platelets pharmacodynamics, mechanism actions and application fibrinolytic drugs Principle actions contract and aminocaproic acid at elevated fibrinolysis.

Pharmacology and application hemostatic agents.

Topic 22. Preparations of hormones of the hypothalamus, pituitary gland, thyroid gland.

Antithyroid drugs Drugs insulin and oral sugar-lowering agents.

Classification, sources of production, principles of biological standardization of hormones drugs Mechanism actions, pharmacological properties and application corticotropin. Pharmacology drugs back parts of the pituitary gland and their application.

Pharmacological properties and use of hormonal preparations of the thyroid gland. Pharmacodynamics and mechanism actions antithyroid drugs substances, application, are possible side effects Influence parathyroidin on exchange of phosphorus and calcium. Application.

Classification, pharmacodynamics and use of insulin preparations. Dosage principles insulin in the treatment of diabetes. Possible side effects, hypoglycemic treatment commas Principles treatment hyperglycemic commas Oral antidiabetic means, classification, mechanism actions, application, side effects.

Topic 23. Preparations of adrenal cortex hormones. Sex hormone preparations and anabolic steroids

Classification drugs steroid hormones The main ones parties pharmacodynamics glucocorticosteroids, which determine their application in clinical practice, mechanism actions Possible complications. Withdrawal syndrome when using glucocorticosteroid drugs, mechanism his occurrence prevention and treatment. Pharmacology drugs with mineralocorticoid activity

Pharmacodynamics estrogenic and progestogens drugs Application estrogenic and progestogens drugs Contraceptives means Pharmacology and application androgenic drugs

Anabolic steroids, pharmacodynamics, application, side action.

Topic 24. Anti-inflammatory drugs. Treatment of rheumatoid arthritis.

Antiallergic and immunotropic medical means

Classification anti-inflammatory medical means Anti-inflammatory means non-steroidal structures: drugs, mechanism of action, application, side effect. Steroidal anti-inflammatory drugs structures: drugs, mechanism actions, application, side effect action.

Drugs basic therapy rheumatoid arthritis, mechanism actions, side effects, features application. Principles treatment of rheumatoid arthritis

Antihistamines tools: mechanism actions, application. Glucocorticoids drugs as anti-allergic means Mechanism actions and application. Principle actions and application means, what stabilize membranes dangerous cells, antileukotrienes means Principles medicinal treatment of anaphylactic shock

Means, which affect on immunity.

SECTION IV. ANTIBACTERIAL MEDIATORS. GENERAL PHARMACOLOGY

Topic 25. Pharmacology of antibiotics 1 (Pharmacology betalactams antibiotics). Pharmacology antibiotics 2 (Pharmacology macrolides, lincosamides, tetracyclines, aminoglycosides, cyclic polypeptides).

The biological significance of antibiotics and the main mechanisms of action of antibiotics. Antibiotics group biosynthetic penicillins: drugs, antimicrobial spectrum, pharmacokinetics, application, complication. Features actions and application semi-synthetic penicillins, side effect. Cephalosporins: antimicrobial spectrum, application, complications. Features application carbapenems and monobactams. Principles rational antibiotic therapy.

Properties and use of antibiotics - macrolides. Antibiotics of the tetracycline group: drugs, spectrum antimicrobial actions, pharmacokinetics, application, side action. Chloramphenicol: antimicrobial spectrum, application, side effects reactions Antibiotics groups aminoglycosides: antimicrobial spectrum, application, side effects.

Features actions and application polymyxins. Antibiotics drugs vegetable origin.

Combined application antibiotics

Topic 26. Sulfanilamide drugs. Synthetic antimicrobial agents of various chemistry structures Pharmacology of fluoroquinolones.

Mechanism and spectrum of antibacterial action of sulfonamide drugs. Pharmacokinetics sulfonamide drugs. Duration of action and dosage of sulfonamide drugs. Clinical classification and indication to application sulfonamides drugs Combined use of sulfonamides with other drugs. Adverse reactions and complications sulfonamide therapy, their prevention and treatment.

Mechanism and spectrum of antibacterial action of fluoroquinolones, properties and applications. Derivatives naphthyridine (acid nalidixova), properties and application. Derivatives 8-oxyquinoline (enteroseptol), properties and application. Derivatives nitrofurans as chemotherapy means

Topic 27. Pharmacology of antituberculosis drugs medical means Antispirochetes, antiprotozoal, antifungal and anthelmintic drugs

Antituberculosis drugs: classification, spectrum and mechanism actions pharmacodynamics, pharmacokinetics and features of the use of antituberculosis drugs. Side effects anti-tuberculosis drugs. Principles of tuberculosis chemotherapy. Antibiotic drugs in treatment tuberculosis Indication and contraindication to application, side effects, their prevention. Pharmacological characteristic drugs different chemical groups: ethionamide, ethambutol, ofloxacin, sodium paraaminosalicylate. Side effects effects, their warning. Antisyphilitic tools: drugs, their properties, mechanism actions and application. Action antimalarial drugs on different forms causative agents malaria Treatment and prevention malaria

Features actions and comparative characteristic drugs, which are applied for treatment of amebiasis. Chemotherapy of leishmaniasis, toxoplasmosis. Pharmacodynamics of means which are applied for the treatment of giardiasis and trichomoniasis. Pharmacological characteristics of anthelmintics, features of use, side effects Characteristic, spectrum actions and application antimycotic means

Topic 28. Antiviral drugs Antiseptic and disinfectants medical means Pharmacology of calcium, potassium and sodium preparations. Control testing in pharmacology for test tasks according to the "Step-1" type. Pharmacology anticancer medical means

Classification antiviral drugs by mechanism actions and testimony to application. The mechanism of action of antiviral agents. Pharmacological characteristics of drugs, effective at the flu and SARS, herpetic infections Biological value, properties and use of interferon and inducers of interferon synthesis. Principles of viral treatment hepatitis and patients with HIV infection.

Concept about asepsis, antiseptic and disinfection factors, which determine antimicrobial activity medicines The main ones mechanisms actions antiseptic means on microorganisms Nitrofurans derivatives: spectrum of antimicrobial action, indications for use. Local and antimicrobial action of salt difficult metals, application their in medical practice Resorptive action of salt difficult metals Activities help at poisoning Antimicrobial action compounds of chlorine and iodine. Antimicrobial action of oxidants: principle of action and application. Antiseptics aliphatic row: mechanism actions and application alcohol ethyl and formaldehyde Antiseptic properties meadows

and acids; mechanism actions and application solution ammonia Features actions and application dyes (diamond green, ethacridine lactate). Antiseptics with groups detergents (decamethoxine, ethonium). plants, what have antiseptic properties

Plasma substitutes solutions and means for parenteral food storage, properties, indication before application.

Pharmacological role of sodium and potassium ions (value for normal function of nervous and muscle systems, the role in the transmission of nerve impulses, etc.). The use of sodium preparations and potassium in medical practice. Pharmacodynamics of calcium salts (effect on the central nervous system and cardiovascular systems, cellular permeability, collapsibility of blood and etc.). Application drugs calcium The main ones parties pharmacodynamics compounds magnesium and their application. Antagonism between calcium and magnesium ions. Glucose, its energy value, antitoxic and osmotic properties, application.

Conducting control work on the type of writing test tasks "Step- 1" with the goal preparation students to delivery state licensed exam Possibility analyzed Bank tests "Step-1" and solve situational problems by highlighting key words from the condition of the test and logical approach to solving the test task.

Classification anticancer means Modern absorption about mechanisms actions anticancer drugs. Pharmacological properties of antimetabolite drugs, indications to application in medical practice Pharmacological properties alkylating anticancer agents, indications for use. Antibiotics, hormonal and enzyme drugs for treatment malignant neoplasms Mechanism immunosuppressive actions cytostatic drugs. Antitumor cytostatics of plant origin. Complication chemotherapy. Prevention and treatment complications pharmacotherapy antitumor means

Topic 29. Toxicology. The main ones principles treatment sharp poisoning medicinal means

and poisons. General pharmacology. Pharmacokinetics. Pharmacodynamics. Mechanisms the effects of drugs. Measures to prevent further absorption of poison into the body when it enters the body digestive channel, on the skin mucous membranes shell, in respiratory ways Methods neutralization and breeding with body to poison which received orally (application adsorbing, enveloping, astringent, emetic, laxatives, special antidotes). Antidote therapy. Activities with acceleration breeding to poison with body Forced diuresis. Symptomatic and pathogenetic therapy.

Symptoms and medicinal help at poisoning anticholinesterase substances, M-choline blockers, muscle relaxants, local anesthetics, sleeping pills means, narcotic analgesics, ethyl alcohol, antipsychotics, heavy salts metals, anticoagulants, insulin, cardiac glycosides, concentrated acids and meadows

The main ones principles and methods trial new ones medical means Concept about pharmacokinetics medical means Penetration medical means by biological membranes Ways of introducing medicinal substances into the body. Absorption of medicinal substances with different ways of introduction. Factors affecting the absorption of medicinal substances in alimentary canal The concept of bioavailability of medicinal substances. Distribution of medicinal substances in the body Deposition of medicinal substances in the body. Metabolism of medicinal

substances. Role of the cytoplasmic reticulum of the liver in the metabolism of drugs. Ways of withdrawal medical substances from the body.

Concept about pharmacodynamics medical means Modern theory actions medicines on organism. Concept about specific receptors, their agonists and antagonists Kinds pharmacological effects

Value sex and age in actions pharmacological substances Dependence pharmacological effect from pathological state body Role genetic factors in actions medical substances

Peculiarities of the action of medicines when they are re-introduced into the body. The phenomenon of habituation (tolerance) of the body to medicines, its essence and practical significance. Features the combined effect of drugs on the body. Synergism, its types and practical significance. Antagonism, its types and practical value. Antidotism and the main ones antidotes

Types of negative effects of medicines. Negative side effects of allergic drugs nature Negative side action medical means non-allergic nature Toxic action medicines. Teratogenic effect of drugs. Embryotoxic and fetotoxic effect of drugs and poison The value of genetics factors in development negative side actions medical means Individual intolerance medicines (idiosyncrasy).

4. TOPICS LECTURES JOIN

Number lectures	Topic lectures	Mr hours
Section AND. Medical recipe		
1	History development pharmacology. State modern pharmacology. Law of Ukraine "About medical means". Pharmacokinetics and pharmacodynamics medical means	2
Section II. Means, what affect on central and peripheral nervous system		
2.	Medicinal means, what affect on transmission excitation in cholinergicsynapse	2
3.	Medicinal means, what affect on transmission excitation in adrenergicsynapse	2
4.	Pharmacology narcotics and non-narcotic analgesics Means for general and local anesthesia.	2
5.	Psychotropic medical means with depressing by type actions	2
6.	Psychotropic medical means with stimulating by type actions	2
7.	Means for treatment ischemic diseases hearts	2
Section II. Means, which affect on function executive bodies and exchange substances		
8.	Medicinal means, what affect on the respiratory system	2
9.	Antihypertensive means	2

10.	Means, what affect on function bodies digestion.	2
11.	Means, what affect on hematopoiesis and hemostasis	2
12.	Hormonal drugs, their synthetic substitutes and antagonists	2
TOGETHER:		24

5. TOPICS PRACTICAL JOIN

No	Topic occupation	Mr Mr
Section AND. Medical recipe		
1.	Basic provisions of the Law "Prodrugs" of Ukraine . Introduction in medical recipe solid medical forms	3
2.	M ' what medical forms: classification, rules discharge, ways introduction and application features. Liquid dosage forms. Solutions for external and internal application: classification, prescription rules, ways of introduction and features application.	3
3.	Liquid dosage forms (infusions, decoctions, emulsions, mixtures, tinctures, liquid extracts, new galenov drugs). Rules discharge, ways of introduction. Pharmaceutical forms for ινφεχτιονσ: requirements for injection σολυτιονσ , rules discharge, ways introduction and features application.	3
Section II. Means that affect on central and peripheral nervous system		
4.	Medicinal means, what affect on transmission excitation in cholinergic synapses. Cholinergic agents that affect M- H-cholinergic receptors. Anticholinesterases means Reactivators cholinesterase.	3
5.	Cholinergic means, which selectively act on M-cholinoceptors. M-cholinomimetics. M-choline blocking agents.	3
6.	Pharmacology medical means, what selectively act on N-cholinergic receptors. N-cholinomimetics. H-choline blocking agents means	3
7.	Pharmacology medical means, what affect on transmission excitation in adrenergic synapse: adrenomimetics, sympathomimetics, antiadrenergic medical means, sympatholytics.	3
8.	Means used for general anesthesia. Local anesthetics medical means	3
9.	Pharmacology and toxicology alcohol ethyl and drugs fortreatment of alcoholism. Sleeping pills. Antiepileptic, antiparkinsonian means	3
10.	Pharmacology of narcotic and non-narcotic analgesics. substances, that cause dependence.	3
11.	Psychotropic drugs with a depressing type of action: antipsychotics, tranquilizers, sedative medical means	3

12.	Psychostimulants. Antidepressants. Means, which are applied at bipolar diseases and SPAU Means, which affect on serotonergic system	3
SECTION III. Means, which affect on function executive bodies and exchange substances		
13.	Pharmacology of drugs that have an effect on function bodies breath. Medicinal means, what are used for treatment bronchial asthma and with swelling lungs	3
14.	Diuretics means Pharmacology means, what reduce contents urinary acid in body Means, what affect on tone and abbreviated activity myometrium	3
15.	Medicines used in case of deficiency coronary blood circulation	3
16.	Antiatherosclerotic medical means	3
17.	Antihypertensive means Antiarrhythmic means	3
18.	Means used for the treatment of heart deficiencies	3
19.	Medicinal means, what affect on function bodies digestion (means that affect appetite; means that regulate secretion glands stomach; gastroprotectors, means, what affect on foreign secretary function pancreatic glands; cholelitholytic and drugs that affect the motility of the stomach intestinal tract).	3
20.	Pharmacology means, what affect on hematopoiesis	3
21.	Pharmacology means that affect on system folding of blood	3
22.	Drugs hormones hypothalamus, pituitary gland, thyroid glands Antithyroid drugs Drugs insulin and oral sugar-lowering means	3
23.	Drugs hormones bark adrenal glands Drugs sexual hormones and anabolic steroids	3
24.	Anti-inflammatory medical means Treatment rheumatoid arthritis Antiallergic and immunotropic medical means	3
SECTION IV. Antibacterial middlemen General pharmacology.		
25.	Pharmacology of antibiotics 1 (Pharmacology of beta-lactams antibiotics). Pharmacology of antibiotics 2 (Pharmacology of macrolides, lincosamides, tetracyclines, aminoglycosides, cyclic polypeptides).	3
26.	Sulfanilamide drugs. Synthetic antimicrobial agents different chemical structures Pharmacology fluoroquinolones.	3
27.	Pharmacology anti-tuberculosis medical means Antispirochetes, antiprotozoa, antifungal anthelmintic drugs	3
28.	Antiviral drugs Antiseptic and disinfectants medical means Pharmacology of calcium, potassium and sodium preparations. Control testing with pharmacology by test tasks on type "Step-1". Pharmacology anticancer medical means	3
29.	Toxicology. Basic principles of treatment of acute drug poisoning means and poisons General pharmacology. Pharmacokinetics. Pharmacodynamics. Mechanisms actions medicines	4
	In total	88

6. INDEPENDENT WORK

No s/ p	Topic work	Mr hours
1.	Medicinal and chemical substances, which cause abuse, drug and drug addiction Medical and social aspects and methods pharmacotherapy.	4
2.	Modern cardiotoxic means	4

3.	Hypertensive medical means	4
4.	Antidepressants.	4
5.	Modern idea about pharmacotherapy ulcerative diseases stomach and 12-point intestines Gastroprotectors and antacids means	4
6.	Medicinal means, what are applied in therapy diseases liver and biliary ways	4
7.	Antiatherosclerotic means	4
8.	Medicinal means that affect on phosphorous-calcium exchange. Principles treatment osteoporosis	4
9.	Ethyl alcohol and means for treatment alcoholism	4
10.	Adaptogens	3
11.	Means, which affect on fibrinolysis	4
12.	Antihormonal means	4
thirteen.	Enzymatic drugs, coenzymes and anti-enzymes	4
14.	Vitamin drugs, concept about hypo- and hypervitaminosis.	4
15.	Antimalarial medical means	2
16.	Means for treatment leishmaniasis	2
17.	Modern problems and peculiarities of the use of antitumor drugs	4
18.	Modern theory the effects of drugs on organism.	4
19.	Antidotism and the main ones antidotes	4
20.	Value genetic factors in actions medical means	4
TOGETHER:		68

9. TEACHING METHODS

According to the sources of knowledge, teaching methods are used: verbal - story, explanation, lecture, instruction; visual - demonstration, illustration; practical - practical work, problem solving.

According to the nature of the logic of knowledge, methods are used: analytical, synthetic, analytical-synthetic, inductive, deductive.

According to the level of independent mental activity, the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, conversation;
2. Visual methods: illustration, demonstration;
3. Practical methods: performing practical work and solving clinical situational tasks to develop skills and abilities;
4. Students' independent work on understanding and assimilation of new material
5. Use of control and educational computer programs
6. Innovative teaching methods: Case-based learning (learning through the analysis of a clinical case, situation); brain storm; educational discussion; educational debates; role play; Team-based learning; exchange of opinions (think-pair-share).

Types of training classes according to the curriculum are: lectures, practical classes; independent work of students.

8. CONTROL METHODS

Current control is carried out on the basis of control theoretical knowledge, practical skills and abilities.

Forms of current control are: *in the dream* survey (frontal, individual, combined), interview; practical verification of professional skills (conducted based on the results of practical work at the end of the class); test control ("open" and "closed" test tasks).

Current control is mandatory. During the evaluation of mastering of each topic from all disciplines of the curriculum for the current educational activity, the student is given grades on a 4-point (traditional scale) taking into account the approved evaluation criteria for the discipline. All types of work provided by the curriculum are taken into account. The student must receive a grade in each topic. The teacher conducts a survey of each student in the group at each lesson and assigns a grade in the journal of attendance and student performance according to the traditional scale ("5", "4", "3", "2").

When evaluating the student's current educational activity, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of independent study and the performance of work in the notebook.

The final (summary) control of the sections is carried out at the end of the section in the form of a written test, which includes test tasks from the "Step-1" bank, theoretical questions and control of practical skills (solving situational problems, defining and describing macro- and micropreparations, etc.) .

Such methods of control as oral, written and test are used, which should contribute to increasing the motivation of students-future specialists for educational and cognitive activities. According to the specifics of professional training, preference is given to test and written control. In the case of final control, preference is given to written or test control.

9. FORM OF FINAL CONTROL OF LEARNING SUCCESS

The final control of the discipline is carried out on the basis of theoretical control knowledge, practical skills and abilities.

Assessment is a form of final control, which consists in assessing the student's learning of the learning material based solely on the results of his performance of certain types of work in practical, seminar or laboratory classes. Semester assessment of subjects is carried out after the end of its study, before the beginning of the examination session.

An exam (differential assessment) is a form of final control of a student's assimilation of theoretical and practical material from an educational discipline.

11. Scheme of accrual and distribution of points received by students .

The maximum number of points for a discipline is 200 points. The ratio between the results of the evaluation of the current educational activity and the final control of knowledge is 60% and 40%.

The first semester of studying the discipline ends with a test.

The maximum number of points that a student can score for the current educational activity while studying the discipline is 200 points, *the minimum number of points* - the minimum number of points - is 120 points.

The calculation of the number of points is carried out on the basis of the grades received by the student on a 4-point (national) scale during the study of the discipline, by calculating the arithmetic mean, rounded to two decimal places.

The student receives a credit in the last lesson of the discipline based on the results of the current assessment.

Only those students who do not have academic debt and whose average score for the current academic activity in the academic discipline is at least 3.00 are admitted to the credit.

The average grade for the current activity is converted into points on a 200-point scale, according to the conversion table (Table 1).

Table 1.

Recalculation of the average grade for the current activity into a multi-point scale (for disciplines ending with credit)

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	200	4.47	179	3.94	158	3.42	137
4.97	199	4.44	178	3.92	157	3.39	136
4.94	198	4.42	177	3.89	156	3.37	135
4.92	197	4.39	176	3.87	155	3.34	134
4.89	196	4.37	175	3.84	154	3.32	133
4.87	195	4.34	174	3.82	153	3.29	132
4.84	194	4.32	173	3.79	152	3.27	131
4.82	193	4.29	172	3.77	151	3.24	130
4.79	192	4.27	171	3.74	150	3.22	129
4.77	191	4.24	170	3.72	149	3.19	128
4.74	190	4.22	169	3.69	148	3.17	127
4.72	189	4.19	168	3.67	147	3.14	126
4.69	188	4.17	167	3.64	146	3.12	125
4.67	187	4.14	166	3.62	145	3.09	124
4.64	186	4.12	165	3.59	144	3.07	123
4.62	185	4.09	164	3.57	143	3.04	122
4.59	184	4.07	163	3.54	142	3.02	121
4.57	183	4.04	162	3.52	141	3	120
4.54	182	4.02	161	3.49	140	< 3	70-119 (refolding)
4.52	181	4.00	160	3.47	139		
4.49	180	3.97	159	3.44	138		

The learning result is also evaluated on a two-point scale (passed/failed) (Table 2).

Table 2

The scale of transferring points to the national system

According to the national system	On a 200-point scale
counted	from 120 to 200 points
not counted	less than 119 points

Students' independent work, which is provided for by the topic of the lesson along with classroom work, is evaluated during the current control of the topic in the corresponding lesson.

The second semester (the last semester of studying the discipline) ends with a final control in the form of an exam.

Only those students who do not have academic debt (all missed classes have been completed) and whose average score for the current educational activity in the academic discipline is at least "3" are admitted to the exam.

The maximum number of points that a student can score for the current educational activity for admission to the exam is 120 points and is defined as the sum of the arithmetic average of all grades received in the semester.

The minimum number of points that a student must score for the current educational activity for admission to the exam is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in the table. 3.

Table 3.

Recalculation of the average grade for the current academic performance in a multi-point scale for disciplines ending with an exam

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough
4.33	104	3.62	87		

The maximum number of points that a student can score when taking the exam is

80 (the minimum number is at least 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for the exam.

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to the work curriculum. Encouragement points are added to the final grade for the discipline at the end of its study.

Points with disciplines for students, which successfully completed the program are converted into the national scale and **ECTS system** (tables 4, 5).

Table 4.

Discipline points	Evaluation on a 4-point scale
From 180 to 200 points	5
From 150 to 179 points	4
From 149 points to the minimum number of points that the student must score	3
Below the minimum number of points that the student must score	2

Scale assessment: national and ECTS

Table 5

Total points for all types educational activity	Rating ECTS	Rating by national scale	
		for exam, diploma	for offset
180-200	A	perfectly	counted
160-179	B	okay	
150-159	C		
130-149	D	satisfactorily	
120-129	E		
50-119	FX	unsatisfactorily with the possibility of refolding	not counted with possibility rearrangement
0-49	F	unsatisfactorily with mandatoryrepeated studying the discipline	not counted with mandatoryrepeated study disciplines

10. METHODOLOGICAL SECURITY

1. Working curriculum of the discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions

**EXAMINATION QUESTION
GENERAL PHARMACOLOGY**

1. Sources obtaining medical drugs
2. The main ones principles and methods testing medical means
3. Principles carrying out preclinical of research medical means
4. Principles carrying out clinical of research medical means
5. Concept about pharmacokinetics medical means
6. Concept about pharmacodynamics medical means
7. Paths introduction medical substances in organism.
8. Paths breeding medical substances from body
9. Absorption medical substances at different ways introduction in organism.
10. factors, which affect on absorption medical substances in digestive channels
11. Distribution medicines in body
12. Concept about specific receptors, agonists and antagonists
13. Concept about bioavailability medical substances
14. Metabolism medical substances in body
15. Deposit medical substances in body
16. Kinds therapeutic and toxic dose Concept about latitude therapeutic actions medical means
17. Kinds pharmacological effects
18. Role chemical structures and physical and chemical properties medical substances in their actions on organism.
19. Value sex and age in actions pharmacological substances
20. Interaction medicines synergism, his species and practical value.
21. Interaction medicines Antagonism, his species and practical value.
22. Antidotism and the main ones antidotes
23. pharmacovigilance, principles and methods his carrying out.
24. Negative side action medical means allergic nature
25. Negative side action medical means non-allergic nature
26. Toxic action medical means
27. Embryotoxic, fetotoxic and teratogenic action medicines and poison
28. Value genetic factors in development negative effects medical means
29. Dependence pharmacological effect medicines from state the patient
30. The concept of procholinergic receptors, their localization, classification of means that affect on cholinergic receptors.
31. Localization M-cholinergic receptors, general characteristic and classification M-cholinergic agents.
32. Localization H-cholinergic receptors, general characteristic and classification N-cholinergic agents.
33. Concept about adrenoceptors, their localization and classification means, what affect on adrenoceptors.
34. activities, which are held at sharp poisonings for warning further absorption to poison in blood.
35. Activities on disposal to poison in body

36. Activities on acceleration breeding to poison with body
37. Pathogenetic (symptomatic) therapy of acute strychnotoxicity with drugs and poisons
38. Principles granting medicinal help at attacks bronchial asthma
39. Principles granting medicinal help at bleeding
40. The principles of providing medical assistance for heart attacks deficiencies
41. Principles granting medicinal help at sharp coronary syndrome (unstable angina, infarct myocardium).
42. Principles granting medicinal help at swelling lungs
43. Principles granting medicinal help at hypertensive crisis
44. Principles granting medicinal help at hyperglycemic Koma
45. Principles granting medicinal help at hypoglycemic Koma
46. Principles granting medicinal help at anaphylactic shock
47. The principles of providing medical assistance and court proceedings and status epilepticus.
48. Principles of providing medical aid to acute poisoning organophosphorus substances
49. Principles of providing medical aid to acute poisoning atropine-like substances
50. Principles of providing medical aid to acute poisoning narcotic substances
51. Medical dependence to narcotics analgesics and principles treatment.
52. Normative and legal regulation and principles discharge medicines
53. Features discharge narcotics and psychotropic medical means

SPECIAL PHARMACOLOGY

1. Inhalation narcotic means, their pharmacodynamics and application, comparative characteristic.
2. Inhalation narcotics, their pharmacodynamics, comparative characteristic, indications to application.
3. Pharmacodynamics and application anesthesin and novocaine
4. Pharmacodynamics, mechanism actions and use of lidocaine and trimecaine
5. Acute poisoning by local anesthetic agents, its prevention and help.
6. Binding, enveloping, adsorbing means, mechanism actions, application.
7. Anticholinesterases tools: pharmacodynamics, mechanism actions and application, side effects
8. M-choline blocking agents tools: pharmacodynamics, mechanism actions and application, side effects
9. Comparative pharmacological characteristic atropine sulfate, platyphyllin, scopolamine, ipratropium bromide, pirenzepine.
10. Ganglioblocking agents: localization and mechanism of action, indications and contraindication to application, complication.

11. Muscle relaxants: pharmacodynamics, mechanism actions, indication to application.
12. pharmacodynamics, mechanism actions and application adrenaline, side effects
13. pharmacodynamics, mechanism actions and application ephedrine, side effects
14. Antibiotics from the tetracycline and chloramphenicol groups: drugs, spectrum antimicrobial actions, application, side effects
15. Antibiotics groups macrolides and Azalides: spectrum actions, application, side effects
16. Antibiotics groups fluoroquinolones: spectrum actions, application, side effects
17. Side effects and possible complications of antibiotic therapy, their prevention and treatment.
18. Sulfonamide drugs: classification, antimicrobial spectrum, mechanism of action.
19. Derivatives of nitrofurans: spectrum of antimicrobial action, indications for application.
20. Antituberculosis drugs: classification, mechanism and spectrum actions, side reactions, principles chemotherapy tuberculosis
21. Antisyphilitic drugs: classification, pharmacodynamics, mechanism of action, application.
22. Classification, mechanism actions and application anthelmintic drugs
23. Antimycotic agents: classification, spectra, application, side effects
24. Antiviral drugs, what are used for treatment flu, OX-infections, viral hepatitis

thirteen. LIST EDUCATIONAL AND METHODOLOGICAL LITERATURE

Main:

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2. Skakun M.P., Posohova K.A. Pharmacology: Textbook, Ternopil: Ukrmedknyga, 2019. 740 p.
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4. Road transporter S.M., Shtokina K. G. Pharmacology on palms, Kharkiv: Galaxy, 2019. 112 with.

Additional:

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3. Oleschuk OHM., Posohova K.A. Foundations medical recipes: education manual Ternopil :TDMU, 2019. 92 p.
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6. Lippincott illustrated reviews: Pharmacology. [edited by] Karen Whalen; collaborating editors, Carinda Feild; Rajan Radhakrishnan. Seventh edition. 7th ed., 2019.
7. Basic and Clinical Pharmacology, 12th edition, B.G. Katzung (editor), The McGraw Hill Companies, 2012.
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