

PROGRAMS
ON SPECIALITY “STOMATOLOGY”
(RUSSIAN+ENGLISH MEDIUM)

COURSE STRUCTURE

I. Cycle of Social and Humanitarian Disciplines

1. Program on History of Belarus

The main objectives of social and humanitarian training of students in high school are the formation and development of social and personal competencies based on human knowledge, emotional-evaluative and social-creative experience and providing solution and execution of civil, social, professional, personal tasks and functions.

The place of the discipline "History of Belarus" in socio-humanitarian knowledge defined the objects of its study, which are system-wide and regional patterns of the processes of state-political, socio-economic, religious, cultural and spiritual development of the Belarusian people in the context of the East Slavic and European history, taking into account civilizational characteristics.

2. Program on Philosophy

Philosophy in historical dynamics of culture.

Philosophy as phenomenon of culture. Definition “world outlook”, its structure, the main functions. Outlook and ideology. Historical types of outlook. Peculiarities of mythology and religion. The main problem of philosophy: principles of classification of philosophy trends. Philosophy in the system of culture. Its functions. Interconnections of philosophy and medicine.

Origin of philosophy. Philosophy of Ancient East. Cultural and historical prerequisites of philosophy origin in Ancient East and West. Philosophy trends in Ancient China, India (characteristics, schools).

Antique philosophy. Cosmocentrism of antique way of thinking. Antique naturephilosophy. Sofism (Sokrat, problem of method, Socratic schools). Philosophy doctrines of Platon, Aristotel. The main problems and schools of Ellinistic philosophy.

Philosophy problems in Middle Ages. Origin of Christian philosophy, apologetics, patristics. Scholarstic philosophy, the main problems and trends. Foma Aquinsky. Peculiarities of Arabic philosophy.

The main philosophic ideas in the culture of Renaissance. Characteristic features, their manifestation in philosophic thought of the period (anthropocentrism, humanism). Nature philosophy and medicine.

European philosophy XVII-XIX cent.. Sociocultural prerequisites of origin. English materialism and idealism in philosophy of empirism. Philosophy of Enlightenment Age. Interconnection of philosophy and medicine in New Ages.

The main features of German Enlightenment XVIII-XIX cent .German classical philosophy and its influence upon medical thought.

Classics and modernity two epochs in philosophy development. Classical philosophy crisis and the origin of the main trends of neoclassical thought.

Contemporary philosophy. Positivism. Philosophy of existentialism. Contemporary religious philosophy. The main ideas of phenomenology, structuralism. Postmodernism. Contemporary philosophy and medicine.

Russian and Byelorussian philosophy. Social, religious ipeculiarities.

Philosophy conceptions of being.

Metaphysics and onthology. Definitions, structures. Dialectics as philosophical conception of development.

Philosophy of nature. Nature as subject of philosophy and scientific research. Nature as place to live for a person: biosphere, noosphere, ethnosphere. Ecological problems, reasons of origin, possible ways of solving. The main criterions of ecological problems, its importance for medicine.

Philosophic anthropology.

Consciousness in the frame of life. Being of spiritual: specific of existence, difficulties, possible methods of studying. Problem of consciousness in various philosophic traditions. Various forms of spiritual experience of mankind.

The problem of man in philosophy and science. Man as the subject of philosophic analyses. Natural, social, spiritual in a man. Personal in a man. Man, individual, personality. Man and his health. Philosophy and medicine in studying a personality.

Theory of knowledge and philosophy of science.

Cognition as the subject of philosophic analyses . The problem of knowability of the surrounding world. Cognition as action. Subject and object of cognition. Problem of truth, the main conceptions.

Science, its sociocultural status. Specific and structure of scientific cognition. Forms of scientific knowledge: fact, problem, hypothesis, theory. Method and methodology, their classification and general characteristics.

Social philosophy.

The main problems and definitions of social; philosophy. Society as the object of philosophic analyses. Evolution of philosophic thought about society. Peculiarities of social being.

Society as developing system. Specifications of social being. Structure of society (social, economic, politic structure). Problem of sociodynamics. Byelorussian model of development: the main aspects of state policy.

Political and juridical philosophy. Politics, law as the subjects of philosophy. Role of ideology in the live of society. The main components of ideology of Byelorussian state.

Philosophy of culture and techniques. Conceptions of culture in modern philosophy. Culture and civilization. Dialog of cultures in the contemporary world. Techniques as the subject of philosophic research. Place and role of medicine in modern culture.

Philosophic priorities in the beginning of the III century.

Global problems. Freedom and sense of life of a person.

3. Program on Economic Theory

General problems of economic theory.

Economic theory: subject, method, functions.

Economic system of society.

Public manufacture, its contents. Forms of organization. Forms and features of public industry. Commodity, its characteristics. Value and price, law of value.

Money: history of origin, functions, ways of measuring. Development of commodity exchange, origin of money. Essence and function of money. Money circulation, law of money circulation.

Market. Supply and demand. Infrastructure of the market. Elasticity of supply and demand.. Market balance. Balanced price.

Microeconomy.

Manufacture. Features, factors, results. The process of creating the value of commodity. Capital. Moving of capital. The main and circulating capital. Physical and moral wear of the main capital. Amortization.

Production costs and income of the firm. Contests. Structure of prime cost and price. Profit of manufacture, its formation. Profitableness.

Price formation. Market of labour and wages. Price as the element of industry structure. Its functions. System of prices, the main elements. Structure of retail prices. Market of labour. Wages: contents, functions, forms. System of wages. Normal and real wages.

A firm and its production functions. Undertaking: definition, contents, forms. Classification of undertaking firms. Joint-stock companies, holding companies, companies with restrictive responsibility. Undertaking structures in health care system, peculiarities if their function.

Macroeconomy.

National economy: measurement of the results of economic activities. Macroeconomy, methods of measuring of the main macroeconomic results: public product, gross output (national, internal). Peculiarities of industry structure and economic dynamic in Belarus.

Joint supply and demand. Macroeconomic balance. Characteristics, influenced factors, contents.

Macroeconomic instability: inflation, unemployment, cyclic development. Cycle of economic development. Economic cycle, its structure. Inflation: contents, reasons, socioeconomic consequences. Unemployment. Interconnection of inflation and unemployment. Phillips curve. Social protection from inflation and unemployment in Belarus.

The role of the state in market economy. Economic functions of the state. Antimonopoly policy of the state. Social policy.

Financial system and financial policy. Finances, their functions. Financial system, its structure. Formation of State budget. Budget deficit and state debt. System of taxation, its functions, forms of taxes.

Monetary policy. Banks. Structure of money- credit system. National bank, its functions. System of commercial banks, their functions. Money demand. Money supply. Balance on money market. Rapprochement of money-credit systems of BY and Russia, problem of formation of united money system.

World economy. World market and international trade. Structure of solvent balance. Currency market. Currency rate, influenced factors.

4. Program on Sociology

Sociology as the branch of science. Object, subject of cognition. Concept “social”. Structure of sociologic knowledge. Methods of social analyses.

The main aspects of social and political thought development. Origin of social and politic knowledge. History of social and political thought since antiquity up to XIX cent. Origin and development of classical sociology in XIX – beginning XX cent. Modern sociology: variety of schools and conceptions. Sociology: Byelorussian school.

Society as the subject of social research. The main prerequisites of social life. Concept “society”, types of societies. Social connection: subject, regulation, social influence, social attitude.

Social institutions of society. Concept, origin, contests, types on social and functional role. Concept “institualization”. Family as the most important social institute. Development of social institutions, society in Belarus.

Social structure of society. Concept. Reasons of social inequality. Theories of social stratification. Social stratification of Byelorussian society.

Social conflict. Definition. The main aspects of research in modern conflictology. Dynamics of social conflicts, their main types.

Personality in social surrounding. Social activity. Socialization. Types of personality. Social theories of personality. Social role and status of personality. Social activity and behavior

of personality. Socialization of a person. Factors of socialization. Up-brining in the process of socialization. Social surrounding and problems of up-brining. Modern problems of education.

Social research. Sociology of Health care system. Social research and practice. Types and methods of sociological research. Social policy and health.

5. Program on Politology

Politics as the subject of Politology. Methods and functions of Politology. Subject, aims of the discipline. Structure, functions of politics. Concepts, categories of Politology. Increasing of role of political knowledge in the contemporary world.

The main aspects of origin and development of politic thought. Myth origin of ancient politics. Christian-theological conception of politics. Civil conception of politics (Renaissance period). Scientists of New Age about the essence of state. Development of political thought of Belarus

Political power. Power as the main category of Politology. Essence of political power, its origin and resources. Conceptions of power (variations).System of political power in Belarus.

Political elite. Essence, structure, functions. Elite types. Elite theory. Political elite of Belarus.

Political system of society. General concept , essence, structure, components. Typology of political system. Political system in BY.

State in the political system. State as the main institution. Conceptions of origin. Essence of state, its types. Social state and civil society. The main characteristics of state organization in Belarus.

Political regimes. Concept, classification. Totalitarianism: features in political, economic, spiritual spheres. Authoritarianism: features. Democratic political regime; essence, peculiar features.

Political parties and social unions. Concept. Classification: systems of parties. Social unions and movement. Aims, purposes of social unions. Peculiarities of system of parties in Belarus.

Political leadership. Its nature, types. The role of modern leader in contemporary society.

Representation and elections. Election groups in political system of society. Laws of elections, its main principles. Concept and types of election systems. Election system of Belarus.

Political development. Ways of modernization of society and political system. Political modification and transformation.

Political culture; political socialization and behavior. Political consciousness as reflection of social political existence. Political culture: structure, essence, functions. Political socialization. Psychological and sociocultural factors of political conduct

6. Program on Bases of Psychology and Pedagogics

Mental functions of a man and their development in ontogenesis.

Psychology of a person.

Psychological questions of contact “doctor – patient”

Internal picture of illness and reaction of person to illness.

Psycho hygiene. Psychological protection.

Bases of medical sexology.

Questions of deontology.

7. Program on Russian Language

Communicative spheres of training.

Communicative spheres of training of the given course - educational-professional, political, social and cultural. Predominant among them: educational-professional.

Educational-professional sphere

Stuff:

- Texts of the textbooks (lectures) on general educational and special disciplines of the 1st course; texts from the newspapers and magazines;
- Educational motion pictures, films, patterns, slides, drawings (circuit, drawings).

Political sphere Stuff:

- Newspaper articles, information, reports, chronicle;
- Texts of publicistic product;
- Cinema discharges, broadcast, films.

Social and cultural sphere Stuff:

- Products of fiction of small genre and publicism (story, sketch, essay, poem, newspaper and journal clause);

Expression of subject-predicate attitudes.

Expression of object attitudes.

Expression of adverbial attitudes.

Expression of attributive and attributive-adverbial attitudes.

Expression of connection between the homogeneous members of sentence.

Means of cohesion of sentence and parts of the text.

Structural communication means

Composition communication means.

Means indicating objective and subjective estimation of information.

Means indicating the way of treatments of fact or object.

Morphology.

Word formation.

Elective courses

9. Program on Bases of Law and Human Rights

Human rights and the problem of its granting in the modern world. Concept of rights and freedom of person: historical progress. Declaration of human rights. The problem of granting of private, political, socio-economic rights in the world.

II. Cycle of Natural Sciences

10. Program on General Chemistry

Elements of chemical thermodynamics and bioenergetics

Relationship between processes of metabolism and energy in the organism. Chemical thermodynamics as theoretical basis of bioenergetics. Systems: isolated, closed, open, homogeneous, heterogeneous.

The first law of thermodynamics. Internal energy. Isobaric and isochoric heat effects. Enthalpy.

Hess's law of heat sum. Thermochemical equations. Standard formation enthalpy and standard combustion enthalpy. Thermochemical accounts and their use for energetic characteristic of biochemical processes.

The second law of thermodynamics. Entropy. Standard entropies of substances. Gibbs's free energy.

Conditions of thermodynamic equilibrium. Criterium of spontaneously proceeding processes direction. Enthalpy and entropy effects. Exo - and endorganic processes in organisms. ATP hydrolysis as universal energy source in the organism.

Reversible and nonreversible chemical reactions. Chemical equilibrium. Equilibrium constant and ways of its expression: K_c , K_p , K_a . Examples.

Mass action law for chemical equilibrium. Equilibrium constant. Isotherm equation of chemical reaction.

Predicting direction of reaction. Le - Chatelier's principle.

Physico-chemical bases of kinetics

Biochemical reactions

Subject of chemical kinetics. Chemical kinetics as a basis for study of rates and mechanisms of biochemical processes. Reactions single-stage (simple), multiphase (complex), homogeneous, heterogeneous. Examples. Photochemical reactions and their role in vital activity of the organism and environment.

Rate of homogeneous chemical reactions and methods of its definition. Mass action law for rate of reaction. Rate constant of reaction, its definition.

Molecularity and order of reaction.

Equations of 1st, 2nd and zero order reactions. Half – life of the chemical reaction.

Dependence of reaction rate on temperature. Temperature coefficient of reaction rate and its peculiarities for biochemical processes. Arrhenius equation.

Activation energy. Collision theory. Theory of transition state.

Homogeneous and heterogeneous catalysis. Acid-base catalysis and its role in biological systems. Enzymes as biological catalysts. The Michaelis - Menten equation.

Doctrine about solutions

Solutions. Role of solutions in vital activity of the organisms. Water as a universal solvent. Concentration of solutions and ways of its expression.

Thermodynamics of dissolving. Enthalpy and entropy effects of dissolving and their relation to the mechanism of dissolving. Influence on solubility of components nature and external conditions. Importance of dissolving phenomenon in metabolism processes.

Solubility of gases in liquids and its dependence on various factors. Henry's and Dalton's law. Effect of electrolytes on solubility of gases: the Sechenov's law. Solubility of gases in blood. "Bends" condition.

Vapor pressure and Raoult's law. Boiling point elevation and freezing point depression. Cryometry and ebulliometry.

Osmosis and osmotic pressure in solutions. The Vant - Hoff's law. Hypotonic, hypertonic, and isotonic solutions.

Colligative properties of light electrolytes solutions. Isotonic coefficient. The role of osmosis and osmotic pressure in biological systems. Plasmolysis and hemolysis.

Osmotic pressure of biopolymers solutions. Polyelectrolytes. Isoelectric point and its definition. Oncotic pressure of blood plasma and serum.

Base positions of strong electrolytes solutions theory. Activity and coefficient of activity. Ionic power of solutions. Electrolytes in the organism.

Theory of acids and bases. Protolytic theory of acids and bases. Force of acids and bases. Acid and base ionization constant. Ostvald's law.

Water autoionization. Water autoionization constant (K_w). pH and pOH.

Types of protolytic reactions: neutralization, hydrolysis, ionization. Hydrolysis constant. The role of hydrolysis in biochemical processes.

Buffer systems. Capacity of buffer solutions and factors of its determination. Capacity comparative size of blood buffer systems.

Buffer systems, their classification and mechanism of their action.

Hydrocarbonate buffer solution. Henderson-Hasselbalch equation.

Stability of biopolymers solutions. Salting-out of biopolymers from solutions. Solutions HMS jellification. Properties of jellies.

Feature of HMS dissolving. Structure and shape of macromolecules. The mechanism of swelling. Influence of various factors on the degree of swelling.

Abnormal viscosity of HMS solutions. Staudinger's equation. Viscosity of blood and other biological liquids.

Polyphase equilibrium. Solubility product constant of slightly soluble electrolyte. Conditions of formation and dissolving of deposits. Influence of resembling ion on deposit solubility. Compounds of calcium in an osteal tissue. Heterogeneous processes proceeding in the organism at pathology.

Complexes

Complexes. Werner's coordination theory. Classification and naming of complexes. Complexing ability s-, p-, d-elements.

Chelates. Formation and dissociation of complexes. Constants of instability and stability of complexes.

Metalloenzymes. Reactions of iron, cobalt, nickel ions complex formation, their biological role. Complex nature of hemoglobin, catalase, cyanocobalamine.

Mechanism of heavy metals (mercury, lead) toxic action. Application of complexes formation reactions in therapy of diseases. Chelatotherapy.

Physico-chemistry of superficial phenomena

Superficial phenomena and their importance in biology and medicine. Surface active and surface inactive substances.

Free superficial energy and interfacial tension. Isotherm of interfacial tension. Superficial activity. Thraube's rule.

Adsorption on relative phase boundaries: liquid - gas and liquid - liquid. Gibbs equation. Orientation of SAS molecules in the surface layer and structure of biological membranes.

Adsorption on fixed phase boundaries: solid - gas and solid - liquid (solution). Monomolecular and polymolecular adsorption. Lengmur's and Freundlich's equation.

Adsorption of strong electrolytes: selective, ion-exchange. Ionites and their usage in medicine.

Chromatography. Classification of chromatographic methods. Application of chromatography for separation of substances (on an example of laboratory work) and in medical - biological research.

Physico - chemistry of disperse systems

Disperse systems, their classification. Nature of colloidal state. Preparation of colloidal solutions.

Purification of colloidal solutions. Filtration, dialysis, electro dialysis, ultrafiltration.

Kinetic properties of colloidal systems: Brownian movement, diffusion, osmotic pressure. Ultracentrifugation.

Optical properties of colloidal systems: light scattering (Rayleigh's equation), ultramicroscopy, Tyndall effect.

Mechanism of occurrence of colloid particles electric charge. Structure of double electrical layer. Micelle, colloidal particle.

Electrokinetic potential of a colloid particle. Influence of electrolytes on value of electrokinetic potential. Recharge phenomenon of colloid particle.

Electrokinetic properties. Electrophoresis and electroosmosis. The Helmholtz – Smoluchowski equation. Potential of course and potential of sedimentation. Importance of specified phenomena for biology and medicine.

Kinetic and aggregate stability of lyosols. Stability factors.

Coagulation. Sluggish and fast coagulation. Critical coagulation concentration, its definition. Schulze - Hardy rule.

Intercoagulation of colloids. Processes of coagulation at water purification. Colloidal protection. A peptization. Importance of these phenomena in medicine.

Aerosol, preparation and properties. Aerosols as a medicinal form. Aerosols as the reason for occurrence of some diseases (silicosis, anthracosis etc.).

Suspension, preparing and properties. Application.

Emulsion, preparing and properties. Application.

Colloidal SAS: soaps, detergents, cholic acids, their application. Micellformation in solution of colloidal SAS (spherical and plate micelles).

Laboratory works:

Concentration of solutions and ways of its expression. Discussion of laboratory work. How to express concentration of solution by different ways for composition 10g NaHCO₃ and 150g of water ($\rho = 1,2\text{g/ml}$).

Definition of oxidation reaction rate constant in reaction with hydroiodine acid and hydrogen peroxide (discussion of laboratory work).

Influence of dilution and ratio of components concentration on pH of buffer solutions (contents of laboratory work and explanations of specific factors influence).

pH definition of solution by calorimetric method (buffer and unbuffered methods). pH definition of saliva by unbuffered method (contents of laboratory work).

Reception of lyophobic colloids: collophoniums, iron hydroxide (III), iron (III) hexacyanoferrate (II) by condensation method (on an example of laboratory work).

Optical properties of colloidal solutions (discussion on the laboratory work example).

Lyophobic colloids purification by dialysis (on the laboratory work example).

Definition of critical coagulation concentration of an sol and comparison of experimental data according to Schulze - Hardy rule (on an example of laboratory work).

Definition of critical concentration of micelle formation (CCM) in soap solution (discussion of laboratory work).

Peptization. Change of iron (III) hexacyanoferrate (II) deposit in a colloidal solution (on the laboratory work example).

Study of pH effect on the degree of swelling and definition of gelatin isoelectric point.

Practical skills in general chemistry

Preparation of solution of the given concentration.

pH solution definition by a colorimetric (unbuffered) method.

pH solution definition by potentiometric method.

Definition of substance equivalent molarity and its contents in decomposed solution by titration.

11. Program on Bioorganic Chemistry

Classification of organic compounds. General laws of organic compound systematic nomenclature. Replacing and radical-functional nomenclature. Electronic structure of chemical bonds in organic compounds. σ and π -bonds, types of element atom hybridization – organogens (sp^3 , sp^2 , sp -hybridization). Covalent bond formation. Covalent carbon-carbon bonds (single bonds, double bonds and triple bonds). Inductive and resonance effects.

Stereoisomerism. Conformations of the molecule, Newman projection formulas, staggered and eclipsed conformations of ethane and butane. Their the least stable and the most stable conformations. Torsional barrier. Conformations of cyclohexane. Chair conformation. Axial and equatorial bonds. Stereoisomers: enantiomers and diastereomers. The chiral molecule, the stereocenter. CIS- and trans-isomers. Molecules with one stereocenter. Fischer's projection formulas. Enantiomers nomenclature: the (R-S) system and the (D-L) system. Molecules with more than one stereocenter (isoleucine). Enantiomers and diastereomers. Meso compounds.

Acidity and basis of organic compounds. The Brønsted and Lewis theory. The strength of acids and bases; K_a acidity and pK_a . Predicting the strength of acids and bases. Relationship between structure and acidity. The hybridization effect. Influence of inductive effects.

Homolysis and heterolysis of covalent bonds. Reactive intermediates in organic chemistry. Ionic reactions and radical reactions. Organic reaction terminology. Classification of reagents in organic reactions. Substitution, addition and elimination reactions. Classification of the hydrocarbons.

Reactions of alkanes and cycloalkanes (common cycles). S_R reactions. Reactions of alkenes and alkadienes. A_E reactions addition of hydrogen halides to alkenes. Markovnikov's rule. Addition of water to alkenes: acid-catalyzed hydration. Addition reactions of conjugated alkadienes. Reactions of aromatic hydrocarbons. S_E reactions. Orientation rule in benzene ring.

Reactions of alcohols. Factors affecting the rates of S_{N1} and S_{N2} reactions. Conversion of alcohols into alkyl halides. Alcohols as acids. Alkyl phosphates. Alcohol oxidation. Alcohol dehydration. Ether synthesis: S_{N2} reactions. Alcohol nucleophilicity. Mechanism of alcohol dehydration: E_1 reaction. Synthesis of alkenes. Phenols. Phenol acidity.

Formation of quinones by oxidation of phenols. Hydroquinone – quinone oxidation-reduction equilibria. Thiols. Amines. Naming, Basicity and amine reactions.

Aldehydes and ketones: nomenclature and reaction centres. Basis of aldehydes and ketones. Nucleophilic addition to the carbon-oxygen double bond of aldehydes and ketones. Addition of water and alcohols: hydrates acetals and hemiacetals, ketals and hemiketals. Cyclic ketals. Thioacetals and thioketals. Addition of ammonia derivatives. Imines, 2,4-dinitrophenylhydrazones, semicarbazones, oximes. Keto and enol tautomers of aldehydes and ketones. Aldehyde and ketone oxidation. Iodoform test.

Carboxylic acids: nomenclature and reaction centers. Carboxylic acid acidity. Carboxylic salts. Dicarboxylic acids. Nucleophilic substitutions at the acyl carbon. Relative reactivity of acyl compounds. Esters. Ester synthesis: esterification. Acid-catalyzed and base-promotes ester hydrolyses. Reactions and mechanisms. Carboxylic acid derivatives: esters, carboxylic anhydrides, acyl chlorides, amides, nitriles. Amide hydrolyses. Acyl transfer reactions of anhydrides, thioesters and esters. acyl transfer reactions in living systems. Dicarboxylic acids. Carboxylic acid decarboxylation.

Heterofunctional compounds classification: amino-alcohols and amino-phenols. Hydroxy and aminoacids. Oxo acids. Keto-enol tautomerism of acetoacetic ester. Heterofunctional

benzene derivatives as pharmaceutical substances. Para-aminobenzoic, sulphanilic and salicylic acids and their derivatives.

Classification of carbohydrates. Monosaccharides. Aldose. Ketose. Fischer projection formulas. Monosaccharide stereoisomerism. D and L monosaccharide designations. Structural formulas. Naturally occurring monosaccharides. Cyclic forms of monosaccharides. Haworth formulas for the cyclic hemiacetal forms. Pyranose and furanose forms. Examples. Reactions of monosaccharides. Glycoside formation and hydrolysis. Ether and ester formation. Acylation reactions. Keto—enol tautomerizations. Oxidation monosaccharide reactions. Benedict's or Tollens' reagents: reducing sugars. Oxidation monosaccharide reactions. Bromine water: Synthesis of aldonic acids. Nitric acid oxidation: aldaric acids. Monosaccharide reduction: alditols. monosaccharide derivatives: uronic acids, deoxy sugars, glycosylamine, amino sugars.

Nonreducing disaccharide. The structure of sucrose. Configuration of glycoside linkage. Hydrolysis and methylation of sucrose. Disaccharide reduction. The maltose structure. Configuration of glycoside linkage. Maltose anomers. Glycoside formation. Hydrolysis and methylation of maltose.

The structure of cellobiose. Configuration of glycoside linkage. Cellobiose anomers. Glycoside formation. Hydrolysis and cellobiose methylation.

The structure of lactose. Configuration of glycoside linkage. Lactose anomers. Glycoside formation. Hydrolysis and lactose methylation.

Homopolysaccharides. Starch. Amylose and amylopectin. Glycogen. Configuration of glycoside linkage. Biological role of starch and glycogen.

Heteropolysaccharides. Heparin. Hyaluronic acid. Chondroitin sulphates and their biological role. Alternating units of heparin, hyaluronic acid. Chondroitin sulfate.

Amino acids. Structure and naming. Non polar, polar, negative and positive charged amino acids. Essential amino acids. Amino acids as dipolar ions. Isoelectric point (pI) of an amino acid. Carboxyl reaction and amino group of amino acids. Deamination and transamination reactions. Aminotransferases and pyridoxal phosphate.

Stages of aminotransferase-catalyzed transamination reactions of amino acids.

Structure of peptides and proteins. Peptide bond. Amino acid mixture analysis. Cation-exchange resins, reaction with ninhydrin. Amino acid sequence and covalent structure (or primary structure) of polypeptide. Partial hydrolysis. Methods for determination the N-terminal amino acid residue of peptides and proteins: Sanger method and Edman degradation. Polypeptide and protein synthesis. Protecting groups. Activation of carboxyl group. Secondary structures of proteins: β -pleated sheet and an α -helix. Tertiary structures of proteins.

Nucleic acids, Deoxyribonucleic acid (DNA) and ribonucleic acid (RNA). Nucleosides and nucleotides that can be obtained from DNA. Nucleosides and nucleotides that can be obtained from RNA. 3',5'-cyclic adenylic acid. Deoxyribonucleic acid: DNA. Primary and

secondary structures. Nucleic acids and protein synthesis. Messenger RNA, genetic code. Ribosomes RNA. Transfer RNA.

Lipids. Fatty acids and triacylglycerols. Biological functions of triacylglycerols. Hydrogenation and saponification of triacylglycerols. Synthetic detergents. Reactions of fatty acids carboxyl group. Reactions of saturated fatty acid alkyl chain and unsaturated fatty acid alkenyl chain. Phospholipids and cell membranes . Phosphatides. Sphingosine derivatives.

Terpens and terpenoids. Steroids. Structure and systematic steroid nomenclature. Names of steroid hydrocarbons. Cholesterol. Ergosterol. D vitamins. Sex hormones. Adrenocortical hormones. Bile acids. Cholic acid. Conjugated bile acids.

12. Program on Medical and Biological Physics

Introduction. Purposes, task and structure of medical and biological physics. Their place and role in system of medical education, intersubject communications with other medico biological and clinical disciplines.

Mathematical description of medico biological processes and medical data processing.

Elements of informatics and computer facilities.

Bases of biomechanics.

Mechanical oscillatory and wave processes. Acoustics.

Physical bases of hemodynamics.

Thermodynamics and phenomena of transformation in biological systems.

Bioelectric potentials.

Electrical and magnetic phenomena in organism, electrical influences and methods of research.

Optical research methods and influence by radiation of optical range on biological objects.

Elements of physics of atoms and molecules.

Ionizing radiations, basis of dosimetry.

13. Program on Medical Biology and General Genetics

Molecular-genetic level of living beings organization.

Nucleic acids. Peculiarities of DNA structure. Typical DNA specification. RNA structure, its kinds. RNA synthesis. A gene – fragment of genome nucleic acid. Genetic information coding. Genetic code, its properties.

Cellular level of living beings organization.

A cell – an elementary genetic and structural-functional biological unit. Modern cellular theory. Cell as an open system. Flows of power, information and substance in a cell. Hereditary apparatus of man's cells. Morphofunctional chromosome characteristic. Chromosome types and rules. Man's karyotype, its characteristic. Cell's living cycle. Cell division, its types and kinds. Mechanisms of regulation mitotic activity. Problems of cellular proliferation in medicine.

Ontogenetic level of living beings organization.

Multiplication – universal property of living beings. Ways multiplication evolution. Sexual multiplication, its types. Gametogenesis (ovulogenesis, spermatogenesis). Spermentation. Fermentative processes during spermentation. Artificial spermentation. Impregnation, its phases. Sex dimorphism and distinct sexuality formation in the evolution process. Gametogenesis peculiarities in man, its hormone regulation. Spermentation and impregnation peculiarities in man. Biological determination of sex in a man. Differentiation of sex indications during development. Meaning of testicular feminization gene in differentiation of signs of a female in species with "XY" genotype. Hermaphroditism, transsexualism, transvestism and fetishism. Reproductive peculiarities in man. Artificial man's reproduction. Bioethics. Ethic and juridical intervention aspects into man's reproduction.

Heredity.

Genetics, its subject, problems and methods. Structural-functional levels of hereditary material organization in prokaryotes and eukaryotes: gene, chromosome, genome. Gene level of hereditary material organization in prokaryotes. Gene expression in the process of protein synthesis in prokaryotes. Expression gene regulation in eukaryotes. The role of steroid hormones. Gene engineering process, its purposes and problems. Biotechnology, its significance for medicine and pharmacy. Chromosome level of hereditary material organization. Chromosome and balance sex theories. Signs inheritance, controlled by X- and Y-chromosome genes. Chromosomes as groups of gene coupling. Full and partial coupling. T. Morgan's rule. Coupling groups in man. Cytological and genetic chromosome maps. Statements of chromosome hereditary genome", theory. Genome level of hereditary material organization in pro- and eukaryotes. Program "Man's purposes and problems".

Inheritance regularities.

Inheritance as a process of giving hereditary information from one generation to the other in the process of multiplication. Monohybrid interbreeding. The first generation hybrid uniformity law. The second generation splitting hybrid law. Di- and polyhybrids interbreeding. The law of independent non-allele gene combining. Mendel's signs. Phenotype. Meaning of genetic factors in phenotype formation. Allele and non-allele gene interaction. Multiple alleles. Polytypic gene action. Gene dosage. Gene copies. Influence of habitat factors on genotype into phenotype realization. Gene encounter and expression. Phenocopies.

Changeability.

Changeability, its types and kinds. Phenotypical changeability: modification and ontogenetic. Reaction norm. Statistic methods of studying modification changeability. Genotypic changeability: combined and mutational. Meaning of combined changeability in providing genotypical diversity of people. System of marriages. Mutational changeability. Hugo de Freeze theory. Classification and characteristics of mutations. Physical, chemical and biological

mutagenic factors. Genetic danger of polluting environment with mutagens. Genetic material repair. Mutations connected with repair disturbances, their role in man's pathology.

Anthropogenesis.

Man as a specific object of genetic analysis. Methods of studying man's genetics. Prenatal genetic diagnostics. Bioethical aspects of prenatal diagnostics. Meaning of anthropogenesis for medicine. Hereditary diseases of man: gene, chromosome, cytoplasm. Medico-genetic consultation, its purposes and problems. Stages of medico-genetic consultation. Bioethical and juridical genotherapy problems of man's hereditary diseases and medico-genetic consultation.

Biology of development.

Ontogenesis, its types and kinds. Prezygote period, its significance. Embryonic development, its characteristics. Fetus membranes. Interrelation of a maternal organism and a fetus. Gene control of embryonic development. Intrauterine development of man. Critical periods of development. Teratogenic habitat factors. Post embryonic development, its stages. Influence of outer and inner habitat factors on organism growth. Acceleration. Man's constitution and its medical aspects. Organism aging. Aging theories. Gerontology, geriatrics. Clinical and biological death. The problem of euthanasia. Organism as an open self-regulating system. Notion of homeostasis. Gene homeostasis mechanisms. Genetics of tissue compatibility as gene control homeostasis manifestation in tissue and organs transplantation. Bioethical aspects of tissue and organs transplantation: donor, death definition, donor commercialization. Cell and tissue cultivation out of the organism. Homeostasis cellular mechanisms. Tissue and organs regeneration. Physiological and repair regenerations. Meaning of regeneration for biology and medicine. Systemic homeostasis mechanisms. The role of endocrine and nervous systems in providing homeostasis. Comparative anatomy of organs and systems of organs of vertebral animals (body covers, vertebral column, nervous, endocrine, circulatory, sex, digestive, respiratory and excretory systems). Ontophylogenetic condition of man's development vices.

Population-typical level of living being organization.

Population, its characteristics. Hardy-Weinberg law. Mankind population structure (demes, isolates). The influence of mutational process, migration, isolation, gene drift on the people's population gene fund. The role of ancestor. Selection against homo- and heterozygotes. Selection and contra selection. Gene drift in human populations. Genetic polymorphism, its classification. Polymorphism of man, its biological, medical and social aspects. Genetic burden, its essence and medical meaning.

Biospheric-biogeocenotic level of living being organization.

Man's ecology. Levels of man's ecological links. Ecological mankind's differentiation. Problem "predisease – disease - compensation". Valeology – a science of man's health. Main health factors.

Medical Parasitology.

Medical parasitology. Parasites and their classification. Parasite host. Ways of parasite penetration into the host's organism. Life cycles of parasites. Parasitism origin. E.N. Pavlovski's studying about natural focus of diseases. Medical protozoology, its purposes and problems. The most important irritants of man's invasion diseases from classes Zoomastigota, Sarcodina, Sporozoa and Ciliata. Medical helminthology, its problems. Epidemiological helminth classification. Irritants of man's and animals' diseases from classes Trematoda,

Cestoidea and Nematoda. Gelminths parasiting in man only on the larva stage. Geographical parasite spreading, their peculiarities of morphology, cycle development, ways of man's infection. Methods of diagnosing (macro- and microscopic, coprologic, immunologic) pathogenic parasites. Medical arachnoentomology. The most important parasites from classes Arachnoidea and Insecta.

Poisonous mushrooms, plants and animals.

Toxicity is a universal and spread phenomenon in nature. Poisonous mushrooms: micro- and macromycets. Mycotoxins, their characteristics, mechanisms of acting. Poisonous plants. Phytotoxins, their characteristics, mechanisms of acting. Clinic of man's poisoning by poisonous algae, ferns, naked-seed and flower plants. Usage of poisonous plants in pharmacy. Poisonous animals, classification of their zootoxins. Clinic of man's poisoning by toxic one-celled, intestinal, fish, reptiles. Prophylactic measures of poisoning by toxic animals. Zootoxin usage as raw material for getting medicines.

14. Program on Biological Chemistry

Physical-chemical properties of protein.

Amino acids. Acids, bases, pH, buffers and ionization of amino acids.

Structure of a protein molecule.

Peptide bond. Primary structure. Secondary structure. Tertiary structure. Quaternary structure. Protein folding. Hemoglobin and myoglobin.

Methods of protein purification.

Principles of protein purification. Selection of protein source. Homogenization and solubilization. Ammonium sulfate precipitation. Dialysis. Fractionation techniques. Chromatography of proteins: gel filtration chromatography, ion exchange chromatography, affinity chromatography. Electrophoresis of proteins: native PAGE, SDS-PAGE, isoelectric focusing.

Enzymes. Structure and properties. Kinetics of enzymatic reactions.

Enzymes as catalysts. Active site. Substrate specificity. Enzyme classification. Enzyme assays. Enzyme units. Coenzymes and prosthetic groups. Isoenzymes. Activation energy and transition state. Enzyme kinetics: substrate (Michaelis-Menten model, Lineweaver-Burk plot) and enzyme concentration, temperature, pH.

Enzyme inhibition. Regulation of enzyme activity.

Inhibitors. Irreversible inhibition. Reversible competitive inhibition. Reversible non-competitive inhibition. Feedback regulation. Allosteric enzymes. Reversible covalent modification. Proteolytic activation. Regulation of enzyme synthesis and breakdown.

Medical enzymology.

Plasma proteins. Total protein. Albumin. Specific proteins. Serum enzymes in disease. Isoenzyme determination.

Methods of estimation of protein metabolism.

Biological membranes. Introduction in a metabolism. Biochemistry of power supply and digestion.

Membranes. Membrane lipids (glycerophospholipids, sphingolipids, sterols, fatty acid chains). Lipid bilayer. Membrane fluidity. Fluid mosaic model of membrane structure. Integral membrane proteins. Peripheral membrane proteins. Cytoskeleton. Membrane carbohydrate. Membrane permeability. Passive transport. Simple diffusion Facilitated diffusion Active transport. ATP-driven active transport (structure and action of the Na^+/K^+ -ATPase). Ion-driven active transport.

Intermediate metabolism Organisms difference the in sources of energy, reducing power, and starting materials for biosynthesis Pathways show functional coupling. Catabolism, or degrading metabolism. Biosynthesis, or anabolism. Introduction to digestion and absorption. Basic metabolic pathways process the major products of digestion.

Bioenergetics.

Free energy is useful energy in a system. Biologic systems conform to the general laws of thermodynamics. Endergonic processes proceed by coupling to exergonic processes. High - energy phosphates play a central role in energy capture and transfer. The intermediate value for free hydrolysis energy of ATP compared to other organophosphates has important bioenergetic significance. High-energy phosphates act as “energy currency” of the cell. ATP allows the coupling of thermodynamically unfavorable reactions to favorable ones.

Biologic oxidation. Organization of the electron transport (respiratory) chain. Oxidative phosphorylation.

Structure of the mitochondrial membranes and organization of the electron transport (respiratory) chain. Oxidative phosphorylation of ADP. Hypotheses of oxidative phosphorylation mechanism. Oxidative systems are not developing with energy production.

Common catabolism ways

Citric acid cycle (sequences of reactions, energy yield, enzymes, regulation). The oxidation of pyruvate to acetyl-CoA (sequences of reactions, enzymes, regulation).

Carbohydrate metabolism. Glycolysis under anaerobic and aerobic condition.

The main carbohydrate in tissues of a human, biologic role. Digestion of carbohydrate. Glucose is a major metabolite of carbohydrate metabolism. Glycolysis under anaerobic condition (sequences of reactions, energy yield, enzymes, regulation). Glycolysis under aerobic condition. Fats of pyruvate (entry into the citric acid cycle, conversion to fatty acid or ketone bodies, conversion to lactate, conversion to ethanol).

Pentose phosphate pathway. Gluconeogenesis.

Pentose phosphate pathway of conversion of glucose (sequences of reactions, energy yield, enzymes, regulation). Gluconeogenesis (sequences of reactions, energy yield, enzymes, regulation). Cori cycle.

Metabolism of glycogen, fructose and galactose.

Roles of glycogen metabolism. Glycogen degradation and synthesis. Control of glycogen metabolism (allosteric control and covalent modification, hormonal control by epinephrine, glucagon and insulin, calcium control). Metabolism of fructose and Galactose. Genetic diseases caused by damaging of galactose and fructose metabolism.

Methods of carbohydrate metabolism estimation.

Lipids metabolism. Digestion of lipids. Transport and oxidation of fatty acids.

Structure and properties of fatty acids. Prostaglandins. Digestion of lipids. Transport of lipids. Structure and function of lipoproteins (chylomicrons, VLDLs, IDLs, LDLs and HDLs). Fatty acid breakdown (activation, transport into mitochondria, β -oxidation pathway, regulation, energy yield).

Biosynthesis of lipids.

Ketogenesis. Biosynthesis of cholesterol. Fatty acid synthesis (mechanism of synthesis and regulation). Formation of double bonds. Synthesis of triacylglycerols. Synthesis of glycerophospholipids.

Biochemistry of atherosclerosis.

The exogenous lipid cycle. The endogenous lipid cycle. Clinical disorders of lipid metabolism. Classification (primary and secondary hyperlipoproteinaemia). Atherogenic profiles. Hyperlipidaemia. Dietary management. Drug therapy.

Digestion of proteins, transamination and deamination of amino acids.

Digestion and absorption of proteins. Biosynthesis of amino acids. Amino acid degradation. Transamination. Oxidative deamination of amino acids. Oxidative deamination of glutamate.

Amino acids metabolism. Urea cycle. Amino acids decarboxylation.

Amino acids decarboxylation. Ammonia intoxication is life-threatening. Formation and secretion of ammonia maintain acid-base balance. Inter-organ exchange maintains circulating levels of amino acids. Ammonia excretion. The urea cycle. Link to the citric acid cycle. Hyperammonemia.

Metabolism of amino acids. Transmethylation. Metabolism of phenylalanine and tyrosine.

Transmethylation. S-adenosyl methionine (synthesis of creatine, epinephrine, phosphatidylcholine). Metabolism of phenylalanine and tyrosine. Inborn errors of metabolism: phenylketonuria, alkaptonuria.

Methods of carbohydrates lipids and protein metabolism estimation.

Colloquium “Metabolism of carbohydrate and lipids”.

Structure of nucleic acids. Metabolism of purine and pyrimidine nucleotides.

Seminar: Nucleic acid metabolism. Replication. DNA repair. Transcription.

Translation. Regulation of gene expression. Mutations.

Types of nucleic acids. Nucleotide structure. Primary polymeric DNA structure. Secondary structure. DNA dissociation and reassociation. DNA higher order (tertiary) structure. Chromatin: histones, nucleosomes, fiber. Higher order chromatin structure. RNA (mRNA, rRNA, tRNA, hnRNA, sRNA): structure, functions, location.

Metabolism of purine nucleotides. Synthesis of purine synthesis nucleotides inhibitors. Purine nucleotides synthesis regulation. Salvage pathways for purine nucleotides. degradation of purine nucleotides. Disorders of purine metabolism. Metabolism of pyrimidine nucleotides. Synthesis of pirimidine nucleotides. Regulation of pyrimidine synthesis. Degradation of pyrimidine nucleotides. Disorders of pyrimidine metabolism

DNA replication. Basic requirements for DNA synthesis. Origin of replication. Basic molecular events at replication forks. Eukaryotic replication. Telomeres. The cell cycle. Drugs that affect replication. Damage and DNA repair. Transcription. Post-transcriptional RNA. Reverse transcription.

Genetic code. Amino acids activation. Protein synthesis proper. Post-translational modifications (proteolytic degradation, covalent modification). Chaperones and protein folding. Inhibitors of protein synthesis. Regulation of gene expression.

Mechanism of hormone action. Hormone of hypothalamus and pituitary. Hormonal regulation of carbohydrates, lipids and protein metabolism: insulin, glucagon, catecholamines, glucocorticoids.

Endocrine, paracrine and autocrine hormones. Neurotransmitters. Pheromones. Classification of hormones based on the chemical nature based on the mechanism of action mechanism of group I hormones action. Action mechanism of group II hormones. Hormone-receptor interaction. cAMP – the second messenger. Phosphatidyl inositol/calcium system as second messenger. cGMP as a messenger. Hypothalamus hormones. Pituitary hormones.

INSULIN: structure, biosynthesis, regulation of secretion, degradation. Metabolic effects of insulin. Mechanism of insulin action. Time course of insulin action. Diabetes. Non-insulin dependent diabetes mellitus (NIDDM). Metabolic changes in diabetes. Long term effects of diabetes. Management of diabetes. Biochemical indices of diabetic control. GLUCAGON. Regulation of glucagon secretion. Metabolic effects of glucagons. HORMONES OF ADRENAL MEDULLA: synthesis of catecholamines, storage and release of catecholamine, biochemical functions of catecholamines. Mechanism of action of catecholamines. Metabolism of catecholamines. Abnormalities of catecholamine production. GLUCOCORTICOIDS. Synthesis and transport of corticosteroids. Biochemical functions of glucocorticoid hormones. Mechanism of action of glucocorticoids.

Hormonal regulation of anabolic processes, growth and development.

THYROID HORMONES. Biosynthesis of thyroid hormones. Storage and release of thyroid hormones. Transport of T_4 and T_3 . Biochemical functions of thyroid hormones. Regulation of T_3 and T_4 synthesis. Metabolic fate of T_3 and T_4 . Abnormalities of thyroid function. GROWTH HORMONE. Abnormalities of GH production. HORMONES OF GONADS. ANDROGENS. Biosynthesis of androgens. Metabolism of androgens. Physiological and biochemical functions of androgens. Mechanism of androgens action. ESTROGENS. Synthesis of estrogens. Transport of estrogens. Metabolism of estrogens. Physiological and biochemical functions of estrogens.

PROGESTERONE. Metabolism of progesterone. Biochemical functions of progesterone. Mechanism of action of estrogens and progestins.

Minerals. Metabolism and regulation of calcium and phosphorous metabolism. Regulation of electrolyte and water balance.

Minerals. General functions. Classification. Calcium: biochemical functions, dietary requirements, sources. Phosphorus: biochemical functions, dietary requirements, sources. Regulation of calcium homeostasis: calcitriol, parathyroid hormone, calcitonin. Sodium and potassium: biochemical functions, dietary requirements, sources. Water balance. Regulation of water and electrolyte balance.

Vitamins overview. Fat-soluble vitamins.

Structure, metabolism, biological functions, recommended dietary allowance, deficiency.

Water-soluble vitamins: C, P, B₁, B₂, B₆, niacin.

Structure, metabolism, biological functions, recommended dietary allowance, deficiency.

Water-soluble vitamins: biotin, folic acid, B₁₂, pantothenic acid.

Structure, metabolism, biological functions, recommended dietary allowance, deficiency.

Methods of express-diagnosis.

Colloquium “Integration of metabolism. Regulation of metabolism”.

Metabolism of iron and copper. Blood proteins. Hemoglobin. Biochemistry of kidney and urine.

Iron: biochemical functions. Factors affecting Fe absorption. Transport of Fe in the plasma Storage of iron Disease states. Copper. Biochemical functions. Dietary requirements Sources Absorption. Disease states. Blood. Importance of blood. Albumin: functions. Globulins. Hemoglobin. Structure of hemoglobin. Biosynthesis of heme. Regulation of heme synthesis. Hemoglobin derivatives. Structural diversity of hemoglobin. Sickle cell anemia. Features of erythrocytes metabolism. Degradation of heme to bile pigments. Jaundice.

Cancerogenesis. Oncogenes. Growth factors. Metabolism of xenobiotics. Biochemistry of liver.

Incidence. Etiology. Chemical carcinogens. Mechanism of action. Ames assay. Promoters of carcinogenesis. Radiation energy. Carcinogenic viruses. DNA – the ultimate in carcinogenesis. Molecular basis of cancer. Oncogenes. Activation of proto-oncogenes to oncogenes. Mechanism of action of oncogenes. Growth factors. Antioncogenes. Tumor markers. Characteristics of growing tumor cells. Metastasis.

Partial control of practical skills.

Seminar: Extracellular matrix. Muscle. Nerve tissue.

Collagen. Posttranslational modification of collagen. Genetic diseases of collagen synthesis. Elastin. Fibrillin. Fibronectin. Laminin. Proteoglycans and glycosaminoglycans.

Structure of the muscle. Proteins of muscle. Muscle contraction. Contraction cycle. Relaxation. Types of skeletal muscle fibers.

University component

15. Program on Medical Informatics

Medical informatics as branch of science. Personal computer: devices, labour protection working on PC.

Graphic interface of Microsoft Windows. Disk operations, files.

Ways of creation of text documents with Microsoft Word. Usage of tables.

Formation of text in documents Microsoft Word. Illustrations.

Automatization of calculations with electronic tables. Microsoft Excel. Peculiarities of interface. Table structure.

Analyzing of medical and biological information with electronic tables. Using formulas, making diagrams, preparing documents for print.

Information inquiry system of medical-biological data.

Brauser Internet Explorer. Navigation in e-net. Medico-biological resources of e-net.

Sending messages with electronic post.

Labour protection while working on PC. Microsoft Office. Simultaneous work with several documents. Creation of complex documents on example of text redactor Microsoft Word. Using Microsoft Word as table publishing system.

Statistic analyses of information with the help of electronic tables. Their usage for analyzing data and statistic analyses of the results of medical and biological experiment.

Prove of the hypothesis of medical and biological experiment with functions of Excel.

Creation and usage of multimedia documents. Multimedia opportunities of modern PC. Presentation: using graphic, video, animation.

Microsoft Access. Creation of the tables forms.

Electronic library "MARC"-SQL.

Antivirus defense of PC and local administration network. Preventive measures. Antivirus programmes (Kaspersky Anti-Virus, Symantec Antivirus).

Reserved copying and archivation as elements of safety. WINRAR, WINZIP.

Effective search in e-net. Working with the most popular search e-net systems.

Computer test.

III. Cycle of General and Special Subjects

16. Program on Latin

Anatomo-histological section:

Introduction in subject. Latin alphabet.

Noun, its grammatical categories.

Suffixes in anatomic terminology.

Dictionary form of adjectives of all declinations in positive degree.

Semantics and use of adjectives suffixes.

major pretexts used in anatomic terminology.

Major Latin attachments.

Major Greek attachments.

Pharmaceutical section:

Introduction in Latin pharmaceutical terminology.

Verbs in pharmaceutical terminology.

Prepositional designs in pharmaceutical terminology.

Prescription and rules of veneering its Latin parts.

Latin chemical terminology.

Major frequency pieces with complex spelling.

Clinical section:

Introduction in Latin clinical terminology.

Concept about terminoelements.

Names of pathological processes, formations and diseases.

Drawing up of clinical diagnoses.

17. Program on Human Anatomy

Lectures

Anatomy: subject, contents, place in a number of other educational disciplines Methods of anatomical research. The anatomical nomenclature. Bone as an organ.

Anatomy: subject, contents, place in a number of other educational disciplines Methods of anatomical research. The anatomical nomenclature.

Bone as an organ. Functional anatomy of vertebral column.

Functional anatomy of bone joints.

General anatomo-functional characteristic of inner organs.

Functional anatomy of alimentary, respiratory and urogenital systems.

Angiology. Introduction. Functional anatomy of the heart and arterial system.

Functional anatomy of venous, lymphatic and immune systems.

Myology. Introduction.

Anatomy of human fasciae and topographic formations (part 1).

Anatomy of human fasciae and topographic formations (part 2).

Neurology. Introduction.

Functional anatomy of the brain (encephalon). Functional systems.

Nerve fibre tracts of the spinal cord (medulla spinalis) and brain (encephalon)

Functional anatomy of the vegetative (autonomic) nervous system.

Functional anatomy of the peripheral nervous system (part 1).

Functional anatomy of the peripheral nervous system (part 2).

Functional anatomy of the sensory organs

Development of inner organs and abnormalities (part 1).

Development of inner organs and abnormalities (part 2) **Laboratory Classes**

Organization of educational process on the chair. Anatomical nomenclature. Trunk bones. Vertebrae and their structure.

Cervical, thoracic, lumbar vertebrae, sacrum, coccyx. The breast-bone (*sternum*) and ribs (*costae*)

Bones of the upper limb (clavicle, scapula, humerus, ulnar, radial, bones of the hand).

The skeleton of the lower limb (pelvic, femoral, patella, tibia and fibula, bones of the foot).

Bones of the neurocranium (parietal, occipital, sphenoid, frontal, ethmoid).

Temporal bone and its channels.

Bones of the splanchnocranium (maxillary, mandible, lacrimal, zygomatic bone, hyoid bone, lower nose concha, vomer).

Topography of the skull: roof (*calvaria*) and base of the skull, orbital cavity.

Topography of the skull: nasal cavity, temporal, infratemporal and pterygopalatin fossae. Neonatal skull. Concept about a craniometry. Radioanatomy of the skull.

Functional anatomy of the skeleton

Test in osteology

General arthrology.

Skull bone joints

Trunk bones joints. Vertebral column. Thorax as a unit of a human body.

Upper limb girdle bone joints.

Upper limb free part bone joints.

Lower limb girdle bone joints. Pelvis as a whole.

Lower limb free part bones joints.

Test in arthrology.

Introduction to myology.

Introduction to myology. Muscles and fasciae of the back.

Muscles of the head (mimic, chewing). Muscles of the neck.

Areas and triangles of the neck.

Muscles and fasciae of the thorax. The diaphragm.

Muscles and fasciae of the abdomen. The rectum muscle sheath. The inguinal canal.

Muscles, fasciae, topography of the shoulder girdle and brachium.

Muscles, fasciae, topography of the forearm and hand.

Muscles, fasciae, topography of the pelvis and thigh.

Muscles, fasciae, topography of the leg and foot.

Test in myology.

Oral cavity. Teeth. Tongue. Glands of the mouth. Palate.

Pharynx. Esophagus.

Stomach. Intestine.

Liver. Pancreas.

Abdomen and peritoneal cavity. X-ray- anatomy of the digestive tract.

Nasal cavity. Larynx. Trachea. Primary bronchi.

Lung. Pleurae. Pleural cavity.

Kidney. Urethra. Urinary bladder. Male and female urethra.

Male reproductive organs.

Female reproductive organs.

Perineum.

Functional anatomy of internal organs (assessment knowledge acquire).

Test in splanchnology.

Mediastinum. Heart. Chambers of the heart. Conductive system of the heart.

Topography and X-ray- anatomy of the thoracic cavity organs. Vessels of the heart. Pericardium.

Vessels of the pulmonary circulation system. Aorta. Branches of the thoracic aorta.

Brachiocephalic trunk. Common and external carotid arteries.

Internal carotid and subclavian arteries. Blood supply of head and neck organs.

Auxiliary and brachial arteries.

Arteries of the forearm and hand. Blood supply of the upper limb.

Abdominal aorta and its branches. Blood supply of the organs of the abdomen cavity.

Common, external and internal iliac arteries.

Arteries of the lower extremity: femoral, popliteal, tibial and their branches. Blood supply of the pelvis and lower extremity.

Superior vena cava system.

Inferior vena cava system. Intersystemic vein anastomoses. The circulation of the fetus.

Lymphatic system. Lymphatic vessels and nodes of the thoracic cavity, head, neck, upper extremity.

Lymphatic vessels and nodes of the lower extremity, pelvis, abdomen cavity. Organs of the immune system. Lien.

Functional anatomy of cardiovascular system (assessment knowledge acquire).

Test in cardiovascular system.

The science of the nervous system (NEUROLOGY). General data.

Spinal cord (*medulla spinalis*): structure, bundles, roots (*radix*), spinal nerve (*nervus spinalis*), reflex arch

Grey matter (*substantia glisea*) and white matter (*substantia alba*) of the spinal cord. The meninges of the spinal cord and intermeningeal spaces of the spinal cord.

General anatomy of the brain (*encephalon*). The surfaces and places of the emerging nerves from the brain and from the cavity of the skull.

Myelencephalon (*medulla oblongata*). Metencephalon: the bridge, cerebellum, isthmus of the rhombencephalon (*isthmus rhombencephali*).

The fourth ventricle (*ventriculus quartus*). Rhomboid fossa (*fossa rhomboidea*). Topography of the spinal nerves nuclei.

Mesencephalon (*midbrain*) and between-brain. The third ventricle (*ventriculus tertius*).

Endbrain (*telencephalon*): *corpus collosum*, *comissura cerebri anterior*, lateral ventricles, nuclei basales, internal capsule (*capsula interna*).

Cerebral hemispheres: surfaces, lobes, grooves, gyrus. Rhinencephalon. The meninges of the brain and intermeninges spaces of the brain.

Localization of functions in the cortex of the cerebral hemispheres.

Sensing conduction pathways.

Descending conduction pathways.

Development and functional anatomy of the CNS (central nervous system). The lectures questions on preparations.

Test in CNS.

Vegetative nervous system (VNS), its differences from somatic nervous system. Reflex arch. Sympathetic part of the VNS.

Parasympathetic part of the vegetative nervous system: the centres, bundles, branches. Principles of the organs innervation.

X pair of the cranial nerves.

V, XI, XII pairs of the cranial nerves: nuclei, branches, areas of innervation.

VII, IX pairs cranial nerves: nuclei, branches, areas of innervation.

Spinal nerve: formation, branches. Posterior branches of the spinal nerves. Anterior branches of the thoracic nerves.

Cervical plexus: formation, dermal and muscle branches. Phrenic nerve (*nervus phrenicus*).

Innervation of the skin, muscles, internal organs of the head and neck.

Brachial plexus: formation, short branches - areas of innervation.

The long branches of the brachial plexus. The dermal and muscle innervation of the upper limb.

Lumbar plexus: formation, branches, areas of innervation.

Sacral plexus: formation, short branches. Innervation of the skin, muscles, internal organs of the body (chest, abdomen, pelvis)

Long branches of the sacral plexus. The dermal and muscle innervation of the lower limb.

Development and functional anatomy of the peripheral nervous system The lectures questions on preparations.

Test in peripheral nervous system.

The organ of vision. The structure of the eyeball. Auxiliary organs of the eye: muscles, eyelids (*palpebrae*), eyelashes (*ciliae*), lacrimal apparatus.

Innervation of the eye. III, IV, VI pairs of the cranial nerves. II pair of the cranial nerves, visual conductive pathway.

The organ of hearing: the external ear and middle ear.

The internal ear: bony (*labyrinthus osseus*) and membranous labyrinths (*labyrinthus membranaceus*). VIII pair of the cranial nerves: the pathway of sound conduction, the pathway of vestibular analyser.

The internal secretion glands. General covering of the body: the structure of the skin and its derivatives. The mammary glands (*mammae*).

Development and functional anatomy of the sensory organs. The lectures questions on preparation.

Test in sensory organs, internal secretion glands and general covering of the body.

18. Program on Histology, Cytology and Embryology

The course introduction. The levels of structural organization of live.

The cytology. The cell theory. The radiation aspects of cell reactivity.

The bases of general and comparative embryology.

The epithelial tissue. The glands.

The blood and lymph. The hemopoiesis.

The connective tissues. The cartilage and bone tissue.

The muscular tissue.

The nervous tissue.

The nervous system, central and peripheral.

The sense organs.

The cardio-vascular system.

The organs of hemopoiesis and immune defense.

The endocrine system.

The alimentary canal.

The respiratory system

The intergumentary system. The skin and appendages

The excretory organs.

The reproductive system.

The human embryology.

The stages of history of histology, cytology and embryology.

The control lab tasks - preparation and electronic micro photos reading, resolving of situational problems. The control of classes work on different levels.

19. Program on General Stomatology

1.1. The purpose of teaching the subject.

The main purpose of the course of General Dentistry is to prepare students to receive patients in a clinic under the guidance of an assistant basing on mastery of basic professional manual skills in conducting therapy and orthopedic treatment on phantoms.

1.2. The tasks of the discipline.

As a result of the discipline studying a student should know:

- Equipment of therapeutic and orthopedic rooms, the main and auxiliary areas of dental laboratory. Sanitation and hygienic requirements. Organization of production in dental laboratory. Bases of modern ergonomy. Documentation of a dental patient. Safety technology.
- Classification of materials used in manufacture of dental prostheses and apparatus, filling cavities. Composition, properties and applications.
- Main technological processes used in manufacture of dental prostheses and devices (metal casting, metal forming, heat treatment, soldering and welding of metals, plastics molding and curing, ceramic materials sintering)
- General characterization of teeth prosthetic and prosthetic devices for the purpose, principles of chewing pressure transfer, materials and methods of manufacture. The sequence of tabs, pin teeth, crowns, bridges, dentures (laminar and clasp), maxillofacial devices manufacturing technical stages.
- Functional anatomy of dental system. Occlusion and articulation. Biomechanics of masticatory apparatus. Apparatus that reproduce mandible movement. Bite. Kinds of bites.
- Aseptic and antiseptic in dentistry. Types of sterilization of dental instruments and tips.
- Basic principles of preparation, filling cavities and perform endodontic manipulation. Endodontic instruments, principles of standardization. Methods of application. Disclosure of a tooth cavity. Antiseptic and instrumental treatment, root canal filling.
- Cofferdam. Technique of cofferdam application.
- Dental deposits. Methods of indication. Tools and methods of removal.

As a result of the discipline studying a student should be able to:

- reproduce anatomical shape of teeth.
- prepare impression materials and receive impressions, pour plaster models, self-hardening plastic.
- make collapsible model, wax baeys with bite block, an individual spoon, crownwork made of various materials, bent clasp.

- conduct models mounting to bitelock and articulator, grinding and polishing of metal and plastic prosthesis, setting teeth in dentures, denture repairs (broken base).
- model of wax tab, cast crown, frame of metal-acryl and porcelain fused metal crown, cast bridge, frame of clasp denture. Define boundaries of prosthesis with partial and complete absence of teeth. Topography, location of clasps on the supporting teeth.
- manage technique of cavity preparation on phantom: prepare carious cavity of I, II, III, IV, V, VI class.
- prepare filling material and apply cement, plastic, composite (chemical, light), medical and duct laying filling.
- prepare cavity in a tooth for tab such as Inlay, Onlay, under artificial crowns with step and without it.
- open and reveal a cavity in phantoms tooth, impose devitalizing funds.
- conduct endodontic preparing of root canal with instruments, antiseptic processing. Fill root canal with gutta-percha pins.
- make temporary and permanent fixation of orthopedic structures.
- remove crowns, bridges from phantom model.
- remove dental plaque on phantom; assess effectiveness of removal of dental plaque; impose cofferdam.

The tasks of the discipline are in a student's gaining academic competence based on the ability to independent search training and information resources, mastery of methods of acquiring knowledge and understanding of:

- principles of dental care organization in the Republic of Belarus;
- principles of basic dental diseases prevention;
- methods of local anesthesia which are used in dentistry and maxillofacial surgery;
- methods of diagnosis non-odontogenic and odontogenic inflammatory processes in maxillofacial area;
- methods of salivary glands diseases and injuries diagnostics;
- methods of maxillary sinuses odontogenic diseases diagnostics;
- methods of maxillofacial nerves diseases diagnostics diagnosis and methods of primary medical care providing;
- methods of temporomandibular joint diagnostics;
- methods of face soft tissue and facial bones traumatic injuries;

- methods of face soft tissue and facial bones injuries treatment in outpatient setting;
- methods maxillofacial area tumors diagnostics;
- bases of restorative and reconstructive surgery of maxillofacial area and neck;
- principles of primary health care in major diseases of maxillofacial area.

The structure of the discipline "Stomatology" curriculum includes 7 chapters.

1. Organization of dental care and service of maxillofacial surgery in the Republic of Belarus. Methods of patients with maxillofacial area pathology examination.
2. Caries, pulpitis, periodontitis. Clinic, prevention, treatment principles.
3. Diseases of oral mucosa. Clinic, prevention, treatment principles. Diseases of salivary glands.
4. Odontogenic inflammatory diseases of maxillofacial area.
5. Inflammatory processes of maxillofacial area: boils, lymphadenitis, sinusitis.
6. Traumatic injuries of maxillofacial area. Clinic, primary health care. Maxillofacial injuries life-threatening complications, primary health care.
7. Peculiarities of development and clinical manifestations of maxillofacial neoplastic processes. Modern aspects of a patient with maxillofacial localized tumors treatment.

20. Program in Normal Physiology

1. Physiology. The subject matter and scientific methods
2. Bioelectric phenomena in excitable tissues.
3. The irritation laws of excitable tissues
4. The physiology of muscles. The physiological characteristics of muscles
5. The work of muscles. Mechanism of muscular contraction
6. The physiological characteristics of nerves, peripheral and myoneural synapses
7. The autonomic nervous system
8. The reflex principle of nervous system activity.
9. The peculiarity of excitation conduction on the central nervous system
10. The inhibition process in CNS. Coordination of reflex processes
11. Phase structure of cardiac cycle
12. Physiological properties of cardiac muscle
13. The regulation of heart activity
14. Circulation. Regulation of circulation
15. Methods of heart and vessel study
16. The main blood constants and clinic – physiological methods of study
17. Blood formed elements: erythrocytes and leukocytes

18. Blood groups. Coagulation of blood
19. External respiration
20. Gas-transport system of blood
21. Regulation of respiration
22. Digestion
23. Motor function of digestive tract . The absorption
24. Metabolism and energy. Nutrition
25. Thermoregulation
26. Internal secretion
27. Physiology of spinal, cord, medulla oblongata and pons varolii (hind-brain), mesencephalon reticular formation
28. Physiology of cerebellum, diencephalons and subcortical nuclei, cerebral cortex, limbic system Physiology of sensor system (visual and acoustic)
29. Physiology of tactile, temperature, taste and olfactory sensor systems
30. The conditioned reflex and its neurophysiological mechanisms
31. The human higher psychological function
32. Human CNS physiology, sensor system (analyzers), integrative cerebral functions.

21. Program on Topographical Anatomy and Operative Surgery

Lectures:

Operations on blood vessels, nerves and tendons of extremities. Seams of vessels, nerves and tendons.

Fascia and cellular spaces of the upper limb. Principles of operative interference at purulent diseases extremities.

Amputations and exarticulations.

Specific questions of surgical anatomy on skull and neck. Principles of operations on them.

Surgical anatomy of the thorax and its organs. Selected operative interference on the organs of chest.

Surgical anatomy of a front abdominal wall, development of wall hernias. Basic operations of pelvic and femoral hernias.

Surgical anatomy of the stomach. Selected operative interventions on a stomach.

Surgical anatomy of the liver. Basic operations on the liver and biliary passages. Surgical anatomy of the pancreas. Basic operations of its diseases.

Surgical anatomy of lumbar region and posterior abdominal space. Operations on kidneys and ureters. Surgical anatomy of the pelvis and its organs. Basic operations on the pelvic organs.

Practical Skills

Acquaintance with general-surgical equipment and instructions of its usage. Mastering of the elementary practical skills. Setting of simple, sea and double surgical knots. Techniques of tissue and tissue connections dissection. Seams removal.

Topographical anatomy auxiliary, scapular, delta-like, underclavicular regions. Shoulder topography. Forearm topographical anatomy. Group innervation of the skin, muscles and projection of the shoulder and the forearm vessels and nerves.

Mastering of surgical skills on the fixed material: treatment and preparing of operational field, temporal and final stop of bleeding, isolation of an operational wound edges, imposing P-, Z-like, continuous, matrace and round (Multanovski) seams.

Topographical anatomy of the palm, thigh regions and pelvic joint. Topography of a hip. Group innervation of the skin and muscles and projection of hip vessels and nerves.

Topographical anatomy of a knee region, popliteal and Zhoberal hollows. Topographical anatomy of a leg. Topographical anatomy of a foot (front and lower part). Group innervations of the skin, muscles and projection of vessels and nerves of leg and foot.

Access to vessels and nerves of extremity: bandaging of the main vessels. Finger anesthesia according to Lukashkevich-Oberst. Operations at purulent diseases of extremities (phlegmons, panaricians). Access to space of Paron-Pirogov. Operations on joints: puncture, arthrotomy, resection. Amputation. Classification. Technique and methods of detecting amputation levels. Peculiarities of circular and scrappy amputations. Treatment of soft tissues, bones, overbone, vessels and nerves. Acquaintance to special surgical equipment used at joint resections and amputations.

Amputations and exarticulation of fingers phalanges. Exarticulation of the 2nd and 5th fingers according to Farabef and IIIrd and IVth fingers according to Lyupi and way of the racket. Amputation of the forearm in the upper and lower thirds. Cone-circular three moment shoulder and hip amputation according to Pirogov. Myoplastic amputation of the shoulder in the upper third according to Farabef. Bone-plastic amputation of the leg - foot according to Pirogov. Scrappy fascioplasmic amputation of the leg. Amputation of the hip according to Gritti - Shimanovski-Albercht. Skills on picking up sets of special surgical instruments and using them correctly.

Topographical anatomy of the skull arch. Internal basis of the skull. 12 pairs of craniocerebral nerves exit. Sinuses of a firm brain cortex, their connection with intraskull veins, peculiarities of blood outflow through sinuses from the arch and the basis of the skull. Construction of Kronlein scheme. Topographical anatomy of the facial part of the head. Deep facial region. Topography of round ear salivary gland. Nasal cavity and additional bosoms.

Peculiarities of primary surgical treatment of penetrating and nonpenetrating cranial wounds. Decompressive and bone-plastic cranial trepanations. Antrotomy. Surgical anatomy of cuts on the face. Peculiarities of circular and lateral seams of vessels (Karrel seam, Morozova's seam). Definition of prosthetics and vessels shunting. Neurolysis and nerve seam. Peculiarities of tendons seams located outside and in sinovial. Operations on veins, vein section.

Topography of the neck: triangles, cervical fasciae according to Shevkunenko, closed and open callular spaces. Overfascial vessels and nerves. Cervical medial triangle. Overglossal region. Submaxillary and chin triangles, Pirogov's triangle, undermandibular salivary gland. Sleepy triangle, branches of an external carotid artery, sinocarotid zone, cervical loop.

11. Underglossal cervical region. Thyroid and parathyroid, dangerous thyroid gland region. Topography of neck organs and returnable laryngeal nerves. Thoracic-clavicular-nipple area.

Topography of ladder-vertebral triangle, preladder and interladder intervals, branches of underclavicular artery. Lateral cervical triangle.

Operations on neck. Peculiarities of dissections on neck and access to neck organs. Tracheotomy: peculiarities of lower, middle, upper and tracheotomy according to Bjerk, mistakes and complications at their correction. Vagosympathetic cervical blockages according to A.V.Vishnevskij, I.P.Burdenko. Carotids exposure. Access to the cervical part of a gullet. Operations on thyroid gland. Selection of special surgical tools while carrying out operations on the neck.

Chest topography. Intercostal intervals and internal chest vessels. Lactic gland surgical anatomy, peculiarities of lymph outflow. Thoracic cavity: pleura, lungs: surgical anatomy of the diaphragm. Mediastinum topography: classifications, surgical anatomy of the upper, front, middle and lower mediastina.

Operations on the thorax and organs of the thoracic cavity. Pleural and pericardium punctures. Rib resection. Sewing of open pneumothorax. Cuts at mastitises and retromammar phlegmon. Operations in case of benign tumors and lactic gland cancer. Operative access to the thoracic part of the gullet. Operation of Dobromislov- Torek. Principles of plastic operations on gullet. Gullet plastic according to Ru-Herzen-Yudin. Surgical access to lungs (torracotomy). Principles and peculiarities of lungs operative interference. Surgical access to heart (sternotomy, torracotomy). Concept of revascularization, aorto-coronary shunting, heart transplantation. Acquaintance to the structure and work of the artificial blood circulation machine. Selection of special surgical instruments at operations on the organs of the thorax and skills on their correct usage.

Topography of front-lateral stomach wall, hernias. Weak parts. White line topography, umbilical ring, umbilical and pelvic channels. Pelvic space. Surgical anatomy slanting, straight, sliding, congenital pelvic hernias. Topography of the femoral channel. Topography of the abdominal cavity. Topography of the abdomen and its relation to organs. Topography of fatty, hepatic and pregastric sacks. Topographical anatomy of upper organs the abdominal cavity: abdominal part of the gullet, stomach, liver, gall-bladder, pancreas, and spleen. Topographical anatomy of the abdominal cavity lower part. Abdominal cavity sinuses, pockets and channels. Their connection with the upper part of the abdominal cavity and pelvic cavity. Large and small intestines topography, peculiarities of their blood supply, lymph outflow.

Topography of lumbar region and post abdominal spaces. Fasciae and cellular layers of post abdominal spaces. Topography of kidneys, adrenal glands, urethras, abdominal aorta, inferior vena cava, nervous textures and boundary sympathetic framework, branches of lumbar texture. Topographical anatomy of small pelvis and middle hole. Pelvic diaphragm and urinogenital diaphragm. Division of small pelvis into "floors". Abdominal passage in a male's and a female's pelvis. Fasciae and cellular small pelvis spaces, their connection with the neighboring regions. Topography of straight gut, urethras, bladder and urethra in men and women. Topography of uterus with appendages. Topography of prostate, seed bubbles and seed outgoing passages. Topography of hypodermic part of small pelvis. Alkokka channel. Urinogenital triangle of middle hole, neurovascular formations middle hole, lymph outflow.

Hernia dissection in case of pelvic hernias. Stages and peculiarities of hernia dissection at slanting and straight pelvic hernias. Plastics of pelvic channel at slanting and straight pelvic

hernias.. Stages and peculiarities of hernia dissection at congenital hernias. Stages, peculiarities of hernia dissection and plastics at femoral hernias by means of pelvic and femoral ways. Operations and plastics at umbilical hernias. Stages and peculiarities of hernia dissection at sliding hernias and the restrained hernias of various placement. Operations on kidneys and urethras. Kidney removal, dissection of renal pelvis. Exposure and seam of the urethras. Kidney transplantation. Operations at testicle dropsy according to Winkelman, to Bergman. High dissection of bladder (cystostomy). Operations at phemosis and paraphemosis. Operations at out of uterine pregnancy. Operations at hemorrhage. Intrapelvic blockage according to Shkolnikov. Selection of surgical instruments for operations at hernias, operations on kidneys, urethras and organs of small pelvis.

Mastering of practical skills on fixed tissues. Operative access to organs of the abdominal cavity. Check of abdominal cavity organs. Techniques of intestinal seam. Sewing of wounds of large and small intestines. Dissection of the small intestine with anastomoses «end to end» and «side to side». Sewing of fallen stomach ulcers.

Operations on stomach and large intestine. Stomach dissection. Principles of lip-like and tubular fistulas formation of stomach. Gastrostomy according to Witzel-Kader, Toprover. Gastro-enteric stickings their kinds, measures of prevention of a “vicious circle”. Stomach resection (principles of operation). Concepts of vagotomies, plastic and drainaging operations on stomach. Operation on small intestine. Appendectomy. Operations of imposing feces fistula and unnatural anus.

Operations on organs of the abdominal cavity. Operative access to liver and biliary passages. Temporary and final stops of bleeding from the liver, liver seam. Liver resections and transplantation. Operations of cholecystotomy, cholecystostomy, cholecystectomy. Ways of choledoch drainage. Operations at general biliary passage obstruction. Concept of small invasive method at operations on gall-bladder. Operations on pancreas: at acute pancreatitis, traumas and tumours of the organ. Pancreas transplantation.

Mastering of practical skills on fixed tissues. Resection of small intestine by imposing «end to end» and «side to side» anastomoses. Operations on stomach. Appendectomy.

By the end of studying the subject a student must be able:

- to know and be able to use general-surgical and special instruments;
- to select general-surgical and special instruments for operative interference;
- to fasten knots;
- to dissect skin, hypodermic fiber, aponeurosis, muscle, abdomen and hollow organs;
- temporarily and finally stop bleeding by imposing on vessels blood ceasing clips, by fixing vessels on a clip, sewing vessels through, bandaging vessels by leading ligatures to them with the help of Deshan's ligature needles;
- to isolate operational field and edges of operational wound,
- to carry out vessels exposure on their extent;
- to carry out vein dissection on forearm and shin;
- to carry out knee joint puncture;
- to carry out Lukashevich - Oberst anesthesia on fingers (on a corpse);
- to impose separate knotting seams on skin and aponeurosis, matrace, continuous seams and rounding Multanovski's seam;
- to impose Z-figurative and P-shaped seams on muscles;

- to impose intestinal seams: septic (continuous, rounding Multanovski's seam, Shmiden's furrier) and aseptic (separate serous-muscular Lamber's seams, Z-shaped seams), Mateshuk's seam;
- to carry out imposing of inter-intestinal anastomoses: "end to end" and "side to side";
- to sew fallen stomach ulcer;
- to remove skin seams;
- to carry out plastic of pelvic and umbilical channels on models (at inguinal and umbilical hernias);
- to make tracheostomy on a corpse and breadboard models (to put into trachea tracheostomic Lyuer's tube);
- to carry out tendon's seam according to KJuneo on models;
- to carry out vascular seam according to Karrel on models;
- to carry out abdominal cavity organs check;
- to use received knowledge for explanation of various diseases clinical symptoms, distributions of hematomas and infections through cellular spaces, diagnosing a disease, for explanation and choice of the best ways and methods of surgical treatment.

22. Program on Microbiology, Virology and Immunology

General microbiology

The subject, structure and tasks of modern medical microbiology. Main historical periods in microbiology. L. Pasteur and his outstanding contribution to microbiology science. R. Koch, his work in microbiology. Systematics and nomenclature of microorganisms. General approaches to microbial taxonomy. Species concept in microbiology.

General characteristics of basic morphology forms of bacteria (spherical, spiral, rod-shaped, filamentous, branched, etc.) Methods of microscopy.

Structure of a bacterial cell (obligate and facultative components). Bacterial envelope, its composition. Cytoplasmic membrane – structure and function. Bacterial cell wall, its role and structure in Gram-positive and Gram-negative bacteria. Bacterial capsule, its structure and function. Spores, stages of sporulation, methods of detection. Bacterial flagella, pili, needle complex. Methods of bacteria motility detection. Cytoplasm, cytoplasmic inclusions. Nucleoid, its structure and function. Differential stain methods – Gram stain, Ziehl-Neelsen acid-fast stain, Neisser stain, Gins capsule stain, methods for spore-forming bacteria stain.

Morphology and characteristics of spirochetes, chlamydiae, rickettsiae and mycoplasmas.

Morphology and characteristics of fungi.

Metabolism of bacteria. Classification of bacteria according to their nutrition type. Mechanisms of bacterial trans-membrane transport. Methods of bacterial cultivation. Requirements to nutrient media. Classification of nutrient media.

Biologic oxidation in bacteria. Fermentation: pathways and end products. Respiration. Substrate and oxidative phosphorylation, their significance. Classification of bacteria according to their types of respiration. Methods of anaerobic bacteria cultivation. Isolation of pure culture of anaerobes.

Bacterial enzymes, their properties and classification. Biological role of enzymes. Determination of bacterial carbohydrate hydrolyses. Determination of bacterial proteolytic properties. Evaluation of catalase, urease and other kinds of enzyme activity.

Growth and reproduction of bacteria.

Bacterial pigments, their significance. Classification of pigments.

Bacterial habitation in the environment. Microbial ecology. Microbial communities, ecosystem, ecological variants. Types of microbial symbiosis. Antagonistic microbial relationships, their mechanisms. Kinds of antagonism.

Model sanitary microorganisms, their characteristics. Microflora of air. Indices of air quality. Methods for determination of air sanitary state. Water quality characteristics. Total microbial count of water, water model sanitary microorganisms. Methods for determination of water sanitary state. Microflora of soil and foodstuffs.

Normal microflora of human body, its role in human physiology and pathology. Dysbacteriosis, etiology, pathogenesis, clinical findings, treatment and prophylaxis.

Organization of bacterial genome. Nucleoid, plasmids and episomes, their structure and function. Mobile genetic elements of bacterial genome. Transposons, IS-sequences. Phenotypic bacterial variations. Modifications, their characteristics. Genotypic forms of bacterial variation, their classification. Bacterial dissociation. Mutations, their characteristics. Bacterial reparations. Bacterial recombinations: general characteristics and mechanism. Transformation, transduction and conjugation in bacteria: genetic mechanisms and significance.

Methods of molecular genetic analysis. Nucleic acid sequencing. Molecular hybridization of nucleic acids. Polymerase chain reaction.

Principles of genetic engineering. Applications of recombinant technologies in biology and medicine.

Chemotherapy. Classification of chemopreparations. Therapeutic ratio.

Antibiotics. Requirements to antibiotic preparations. Classification of antibiotics according to the origin, antibacterial effects, spectrum of action and molecular mechanisms of their antibacterial activity. Antibiotic action by inhibition of cell wall synthesis: beta-lactam antibiotics (cephalosporins, penicillins), vancomycin, bacitracin. Antibiotic action by impairment of cell membrane function: amphotericins, polyenes, polymyxins. Antibiotic action by inhibition of protein synthesis: chloramphenicol, erythromycin group and azalides, lincomycin group, tetracyclines, aminoglycosides. Antibiotic action by impairment of nucleic acid metabolism: fluoroquinolones, rifampicin, sulfonamides, trimethoprim.

Side effects of antibiotics. Resistance to antimicrobial drugs, its mechanisms. Non-genetic and genetic (chromosomal and extrachromosomal) resistance. Prevention of drug resistance.

Measurement of antimicrobial activity: disc diffusion test for determination of bacterial susceptibility to antibiotics. Broth and agar dilution susceptibility tests, their evaluation. E-test.

Infection (infectious process), its types. Conditions for infectious process development. General characteristics of infectious diseases, their periods. Microbial carriage. Different forms of infections, their characteristics. Classification of infections according to their origin, localization and spread, manifestations. Reinfection, relapse, superinfection.

Epidemic process. Conditions for epidemic process development. Main routes of disease transmission, their characteristics. Anthroponoses, zoonoses and sapronoses, their characteristics. Sporadic, epidemic, pandemic, endemic forms of infectious diseases.

Pathogenicity and virulence, their characteristics. Measurement of virulence. Adhesion and invasion of bacteria, their molecular mechanisms.

Bacterial exotoxins, their characteristics, classification and mechanisms of action. Bacterial endotoxins, their structure and activity.

Immunology

Immunology and immunity. Innate, acquired, artificial, natural immunity. Anti-infectious and non-infectious immunity, their forms.

Immune system and its sub-systems. Central and peripheral immune organs. CD-antigens, their significance.

Cytokines, their classification. Interleukins, their biological role and functions. Interferons and tumor necrosis factor group cytokines. Other cytokines.

T-cells, their development and differentiation. TCR structure. T-cells subpopulations, their role. B-cells, their development and differentiation.

System of mononuclear phagocytes, its biological role. Dendritic cells. Phagocytosis, its stages. Methods for phagocytosis evaluation. NBT-test.

Antigens, their properties. Bacterial and viral antigens. Protective antigens, superantigens, antigenic mimicry. Alloantigens. Human blood group antigen systems. HLA-antigens.

Immunoglobulins, their characteristics. Immunoglobulin classes. Methods for immunoglobulin determination. Antibodies, their structure and function. Mechanisms of antibodies action. Monoclonal antibodies, their main medical and biological applications.

Genetic control of TCR and antibody variability.

Complement system. Classic, alternative and lectin pathways of activation.

Dynamics of immune response. Immune cell cooperation. Primary and secondary immune response, their characteristics.

Immunopathology, classification. Immediate and delayed types of hypersensitivity, their general characteristics. Coombs & Gell classification of hypersensitivity reactions. Anaphylactic hypersensitivity. Stages of development. Allergy and allergic diseases. Cytotoxic hypersensitivity, mechanisms of development. Immune complex-mediated hypersensitivity. Autoimmune diseases evolved via immune complex mechanisms. Cell-mediated (delayed) hypersensitivity. The diseases developed by these reactions. Skin tests for infection allergy diagnostics. Stimulatory and blocking hypersensitivity. Autoimmune diseases, developed by these reactions.

Primary immunodeficiencies. Combined and T cell immunodeficiencies. B cell immunodeficiencies. Phagocyte and complement system immunodeficiencies. Secondary immunodeficiencies.

Active immunoprophylaxis. Vaccines, their classification and characteristics. Passive immunotherapy. Immune antisera and immunoglobulin preparations.

Evaluation of immune status. Methods for estimation of quantity and functional activity of T- and B-cells. Blast transformation reaction. Flow cytometry technique. Reactions of immunity (serologic reactions), their purposes. Mechanism, conditions and reagents for serologic reactions. Indirect hemagglutination test, its goal. Reagents for indirect hemagglutination. Coombs' reaction, its variants. Reagents for Coombs' reaction. Precipitation reaction, reagents and main goal. Variants of precipitation reactions (ring precipitation, immune diffusion, immune electrophoresis and others). Reaction of toxin neutralization, different variants of reaction. Reagents and main goal. Immune lysis reaction. Hemolysis reaction. Complement fixation test, its technique and purposes. Immune fluorescent assay, its variants and main applications. Enzyme-linked immunosorbent assay (ELISA), its reagents, stages and use in laboratory diagnosis. Radioimmune assay. Western blotting analysis.

Special microbiology

Staphylococci: classification, structure and properties. Virulence factors of staphylococci. Pathogenesis and clinical findings in staphylococcal infections. Laboratory diagnosis, specific prophylaxis and treatment.

Streptococci: classification, structure and properties. Virulence factors of streptococci. Pathogenesis and clinical findings in streptococcal infections. Laboratory diagnosis. Differential diagnosis of *S. pyogenes*, *S. agalactiae*, *S. pneumoniae*, and *Enterococcus spp.* Specific prophylaxis and treatment of streptococcal infections.

Classification, structure and properties of clostridia. Virulence factors of clostridia – causative agents of gas gangrene. Pathogenesis and clinical findings in gas gangrene. Laboratory diagnosis, prophylaxis and treatment. Structure and properties of *C. tetani*. Virulence factors. Pathogenesis and clinical findings in tetanus. Laboratory diagnosis, specific prophylaxis and treatment. Classification and properties of *C. botulinum*. Botulotoxin – properties, mechanism of

action. Pathogenesis and clinical findings in botulism. Laboratory diagnosis, prophylaxis and treatment.

Classification of pathogenic gram-negative non-sporeforming anaerobes. Structure and properties of bacteroids, fusobacteria, prevotellas and other non-sporeforming anaerobic bacteria. Laboratory diagnosis, prophylaxis and treatment of infections.

General characteristics of *Enterobacteriaceae* family. Classification, structure and properties of *Escherichia coli*. Non-specific *Escherichia coli* infections. Enteropathogenic, enterotoxigenic, enteroaggregative, enteroinvasive and enterohemorrhagic *E. coli*: pathogenesis and clinical findings of the diseases. Laboratory diagnosis of escherichioses. Prophylaxis and treatment. Shigellae: classification, structure and properties. Virulence factors. Pathogenesis and clinical findings in shigelloses. Laboratory diagnosis, prophylaxis and treatment. Salmonellae: classification, structure and properties. Antigenic structure. Kauffmann and White scheme of salmonella typing. Virulence factors. Pathogenesis and clinical findings in enteric fever. Laboratory diagnosis, specific prophylaxis and treatment. Pathogenesis and clinical findings in salmonellosis. Laboratory diagnosis of salmonellosis, specific prophylaxis and treatment.

Classification, structure and properties of vibrios. Virulence factors of cholera vibrio. Pathogenesis and clinical findings in cholera. Laboratory diagnosis, specific prophylaxis and treatment of cholera.

Classification, structure and basic properties of yersiniae. Pathogenesis and clinical findings in plague and yersinioses. Laboratory diagnosis, prophylaxis and treatment of yersinioses.

Classification, structure and properties of anthrax causative agent. Pathogenesis and clinical findings in anthrax. Laboratory diagnosis, prophylaxis and treatment of the disease.

Pathogenic brucellae: classification, structure and properties. Pathogenesis and clinical findings in brucellosis. Laboratory diagnosis, prophylaxis and treatment of the disease. Classification, structure and properties of *F. tularensis*. Pathogenesis and clinical findings in tularemia. Laboratory diagnosis, prophylaxis and treatment of the disease.

Pseudomonas aeruginosa: structure and properties. Pathogenesis and clinical findings in *Pseudomonas aeruginosa* infections. Laboratory diagnosis, prophylaxis and treatment.

Classification, structure and properties of bordetellae. Pathogenesis and clinical findings in pertussis and parapertussis diseases. Laboratory diagnosis, prophylaxis and treatment of pertussis and parapertussis.

Haemophilus influenzae and related bacteria: structure and properties. Pathogenesis and clinical findings in infections caused by haemophilic bacteria. Laboratory diagnosis, prophylaxis and treatment.

Classification, structure and properties of meningococci. Pathogenesis and clinical findings in meningococcal infections. Laboratory diagnosis, prophylaxis and treatment of meningococcal infections.

Classification, structure and properties of pathogenic corynebacteria. *C. diphtheriae*. Pathogenesis and clinical findings in diphtheria.

Classification, structure and properties of pathogenic mycobacteria. Pathogenesis and clinical findings in tuberculosis. Laboratory diagnosis, prophylaxis and treatment of the disease. *M. leprae*. Laboratory diagnosis of leprosy.

Classification, structure and properties of pathogenic treponemas. Syphilis causative agent. Pathogenesis and clinical findings in syphilis. Laboratory diagnosis, prophylaxis and treatment of syphilis.

Classification, structure and properties of gonococci. Pathogenesis and clinical findings in gonorrhoea. Laboratory diagnosis, prophylaxis and treatment of gonorrhoea.

Pathogenic borreliae: classification, structure and properties. Pathogenesis and clinical findings in borrelioses (relapsing fevers, Lyme borreliosis). Laboratory diagnosis, prophylaxis and treatment of the diseases.

Pathogenic leptospirae: classification, structure and properties. Pathogenesis and clinical findings in leptospiroses. Laboratory diagnosis, prophylaxis and treatment of leptospiroses.

Pathogenic rickettsiae: classification, structure and properties. Pathogenesis and clinical findings in rickettsioses. Laboratory diagnosis, prophylaxis and treatment of rickettsioses.

Pathogenic legionellae: classification, structure and properties. Pathogenesis and clinical findings in Legionnaire disease. Laboratory diagnosis, prophylaxis and treatment of legionellosis.

Q fever causative agent. Laboratory diagnosis, prophylaxis and treatment of Q fever.

Chlamydiae: classification, structure and properties. Pathogenesis and clinical findings in chlamydioses of various localizations. Laboratory diagnosis, prophylaxis and treatment of chlamydioses.

Mycoplasmas: classification, structure and properties. Pathogenic mycoplasmas, affecting respiratory and urogenital tract. Pathogenesis and clinical findings in mycoplasmal pneumonias and mycoplasmal urogenital disorders. Laboratory diagnosis, prophylaxis and treatment of mycoplasmal infections.

Medically important fungi. Classification of mycoses. Laboratory diagnosis, prophylaxis and treatment of mycoses.

Causative agents of protozoan diseases.

Medical virology

Classification and structure of viruses. Viral genomic organization. Virus replication cycle. Outcomes of the viral infections. Laboratory diagnosis of viral infections. Different types of cell cultures. Indication and identification of viruses in cell cultures. Principles of prophylaxis and treatment of viral infections. Anti-viral drugs, mechanisms of action.

Influenza viruses, classification, structure and properties, viral replication cycle. Pathogenesis and clinical findings in influenza. Laboratory diagnosis of influenza. Specific prophylaxis and treatment of the disease.

Paramyxoviruses. Classification, general characteristics, replication cycle. Pathogenesis and clinical findings in parainfluenza. Laboratory diagnosis of the disease, specific prophylaxis and treatment. Measles virus, classification, structure and properties. Pathogenesis and clinical findings in measles. Laboratory diagnosis of the disease, specific prophylaxis and treatment. Mumps virus, classification, structure and properties. Pathogenesis and clinical findings in mumps. Laboratory diagnosis of the disease, specific prophylaxis and treatment. Respiratory syncytial virus, classification, structure and properties. Pathogenesis and clinical findings in respiratory syncytial infections. Laboratory diagnosis of the diseases, specific prophylaxis and treatment.

Adenoviruses, classification, structure and properties. Pathogenesis and clinical findings in adenoviral infections. Laboratory diagnosis of adenoviral diseases, specific prophylaxis and treatment.

Coronaviruses. Classification, structure and replication cycle of SARS virus. Pathogenesis and clinical findings in SARS. Laboratory diagnosis of the disease, specific prophylaxis and treatment.

Picornaviruses: classification and general characteristics. Polioviruses. Pathogenesis and clinical findings in poliomyelitis. Laboratory diagnosis and specific prophylaxis of the disease. Coxsackieviruses of A and B groups. Classification and general characteristics. Clinical forms of coxsackie infection. Laboratory diagnosis and prophylaxis.

Reoviruses and rotaviruses. Classification and general characteristics. Laboratory diagnosis and prophylaxis of reoviral infections.

Hepatitis A and E viruses. Pathogenesis and clinical findings in hepatitis A. Laboratory diagnosis of the disease, specific prophylaxis and treatment. Hepatitis B, D and C viruses: classification, structure and properties. Pathogenesis and clinical findings in hepatitis B and D. Laboratory diagnosis, specific prophylaxis and treatment. Pathogenesis and clinical findings in hepatitis C, prognosis of HCV infection. Laboratory diagnosis, prophylaxis and treatment. Non-classified hepatitis viruses.

Retroviruses, their classification. Structure of HIV. Virion resistance. HIV replication cycle. Pathogenesis of HIV infection. Epidemiology and clinical findings in HIV infection. AIDS development. Laboratory diagnosis, prophylaxis and specific treatment of HIV infection.

Herpesviruses. Classification and general characteristics. Herpes simplex viruses of 1 and 2 type. Pathogenesis and clinical findings in herpetic infection. Laboratory diagnosis, treatment and prophylaxis of the disease. Varicella-zoster herpesvirus infections. Pathogenesis and clinical findings in varicella and zoster. Laboratory diagnosis, prophylaxis and treatment of varicella and shingles. Cytomegalovirus infection. Pathogenesis and clinical findings in CMV infection. Laboratory diagnosis, prophylaxis and treatment. Epstein-Barr virus infection. Clinical findings in EBV infection. Laboratory diagnosis, prophylaxis and treatment.

Alphaviruses, flaviviruses, bunyaviruses, filoviruses. Arboviral infections. Causative agents of viral hemorrhagic fevers.

Rubella virus. Classification, structure and properties. Clinical findings in rubella. Congenital rubella syndrome. Laboratory diagnosis, specific prophylaxis and treatment of rubella.

Rabdoxiruses, classification and general characteristics. Rabies virus. Structure and properties. Pathogenesis and clinical findings in rabies. Laboratory diagnosis, specific passive and active prophylaxis of rabies.

Prions and prion diseases.

23. Program on Bases of Intellectual Property Management

Legislation in the sphere of intellectual property. Copyright. Patent law.

The graduate must know:

- bases of legislation in the sphere of intellectual property;
- rules of registration the rights for intellectual property;
- peculiarities of copyright;
- measures of responsibility for copyright infringement.

The graduate must be able:

- to prepare and execute application for a patent or invention.

24. Program on Labour Protection

Judiciary and organizational policies of labour protection. Production sanitary. Accident prevention. Fire prevention.

25. Program on Bases of Energy Saving

The role of power engineering in the development of human society. World and republican enegetic resources. Regulating documents and state police in the sphere of energy saving.

The graduate must know:

- characteristics of the main energy sources;
- real state costs of mining, production and transportation of oil, gas and electric power.

The graduate must be able to:

- use energy-consuming appliances and medical technique safe and rational.

26. Program on General Hygiene

Introduction to the subject “General hygiene”.

Methodological bases of hygiene.

Hygiene of environment.

Hygiene of meal.

Hygiene of treatment-and-prophylactic establishments.

Hygiene of work.

Hygiene of children and teenagers.

Personal hygiene.

Military hygiene.

Introduction to the subject “Ecology”.

General and medical ecology.

Ecological factors.

Ecological and medical consequences of atmosphere pollution.

Ecological and medical consequences of hydrosphere pollution.

Ecological and medical consequences of lithosphere pollution.

Ecological problems of food.

Protection of environment.

Biological resources.

Normative-legal bases of environment protection. Ecological monitoring.

27. Program on Radiological and Ecological Medicine

Types of nonionizing and ionizing radiation. Radioactive decay, concept of activity, equation of radioactive decay. Units of radioactivity measure. Corpuscular ionizing radiation. Alpha-radiation, beta-radiation, protons and neutrons – sources, energy, penetrating ability, physical and biological effects, principles of defense. Electromagnetic ionizing radiation. Roentgenologic radiation, gamma-radiation - resources, energy, penetrating ability, physical and biological effects, principles of defense.

Doses of ionizing radiation, dose capacity. Display dose, systematic and nonsystematic units of measurement. Absorbed dose (D), connection with absorbed dose, quality coefficients of radiation types, units of measurement. Effective dose (E₀, its connection with equivalent dose, quality coefficients for organs and tissues, units of measurement. Expected individual effective dose, collective equivalent dose in tissue (ST), collective effective dose (S), expected collective effective dose, usage, units of measurement. Methods of dosimetry of ionizing radiation.: ionizing, luminescent, photographic, chemical; usage, characteristics.

Concept about natural radiation background. Natural extraterrestrial sources of radiation: primary and secondary space radiation, cosmogenic radionuclides. Origin, structure, annual effective doses of external and internal radiation. Concept about technogenically changed natural and artificial radiation background, the most important components technogenically changed radiation background, produced annual effective doses of external and internal radiation, measures to reducing radiation doses. Irradiation of population in the result of nuclear weapon test. Contribution of nuclear-fuel industry in irradiation of population, annual effective doses.

Primary physical processes in molecules after absorption of energy of ionizing radiation: excitation, ionization. Direct and indirect ionizing radiation. Linear compactness of ionization, linear energy transfer, rarely and tightly ionizing radiation. Concept about related biological effectiveness.

Physical-chemical stage of radiation activity. Radiolysis of molecules of organism, direct and indirect injures, radiosensitivity of molecules and radial-chemical exit, free radicals and process of their damaging action. Biological stage of radiation influence. Types of cell reactions: radial block of mitosis, kariokynetic cells death. Influence of absorbed doses of radiation on the formation of chromosome aberration, essential and nonessential aberrations. Connection of chromosome aberrations with oncologic and genetic pathology. Postradial restoration. Enzymes participates in reparation of DNA injures. Radiosensitivity, biological levels. Factors influenced on radiosensitivity of cells, tissues, organs, organisms, species.

Classification of radiation pathology. Peculiarities of determinant radial pathology (oncologic and genetic diseases). Acute radial disease, its forms. Consequences of acute radial disease. Dosimetric, laboratory, clinical data, used in the primary diagnostics of acute radial disease. Radial skin injures, clinical manifestations, periods of illness, level of heaviness, clinical picture, diagnostics, prevention, treatment.

The main peculiarities of radial damages while accumulation of radioactive substanes. Carcinogenic effects. combined radial injures, peculiarities of clinical development.

Classification of preventive measures of radial injures on mechanisms of action and aims. Radioprotectors of short-term action, ways of valuation of radioprotective effect. Antiradial drugs of prolonged action. Medical aids of biological protection raising radio resistance of a body. Measures of protection from inner irradiation. Iodine preventive measures. Sorbets for caesium, rubidium strontium, barium withdrawn from gastrointestinal tract. Complexons for uranium, plutonium, americium, yttrium, caesium withdrawn form a body. Emergent help for radionuclides entrance through gastrointestinal tract.

Classification of treatment measures for acute radial disease. The main ways of radioactive substances entrance into organism. The main steps of radionuclide exchange in organism. Factors influenced radionuclide entrance in peroral way. Factors influenced radionuclide entrance in inhalation way. Radionuclide division on inhalation classes on their speed of withdrawn from lungs. Factors influenced radionuclide entrance through noninjured skin. Characteristics of wound way of radionuclide entrance. Types of radionuclide distribution in organism. Factors influenced on radionuclide withdraw from organism. Radionuclide division on inhalation classes on their speed of withdrawn from organism. The main ways of radionuclide withdrawn. Peculiarities of radial affections after radionuclide intrusion. Dosimeter principles of person inner irradiation. Direct and indirect methods of radionuclide inner contest measurement. Annual effective dose of inner irradiation while radionuclide entrance in peroral and inhalation way. Pathological processes caused by the entrance of radioactive iod, caesium, strontium, plutonium, uranium into organism.

Radioecological consequences of Chernobyl disaster for Byelorus. Characteristics of radioactive wrecking withdrawn. Distribution of iod-131 and caesium-137 in different regions of the world and in the Republic after the Chernobyl disaster. Levels of possible irradiation for people living in zones of pollution. Real levels of population irradiation in zones of strict control. Annual effective dose calculation depending on nuclide pollution compactness on the territory. Rate setting of irradiation of different categories of population at the moment of Chernobyl accident (categories of population, groups of critical organs, dose limits of irradiation).

Diseases of population after Chernobyl accident. The aims of founding Byelorussian State Register of people suffered from radiation after the Chernobyl disaster. Clinic examination of population of the Republic suffered from radiation. Aims of clinic examination. Periods and volume of clinic examination. Examination of reason connection of diseases with radioactive influence. The list of diseases originally connected with the consequences of Chernobyl accident.

Classification of radioactive events. Radioactive accidents, reasons. Radioactive accidents do not connected with maintenance of nuclear electric power stations and the main measurements of consequences eliminations. International scale of accidents at the objects of nuclear energy system, levels and parts of the scale. Criteria of definition of nuclear events level. Actions in the conditions of accidental situation at the nuclear power station. Criteria of evacuation decisions of different groups of population and planned evacuation remoteness from the place of accident. Iodine prevention, drugs, doses and duration for different groups of population. Effectiveness of preventive measurements depending on the terms of its beginning from the moment of the accident.

Requirements for irradiation limitation in the conditions of nuclear accident. Principles of emergent medical help at the nuclear industries during radioactive accidents. Actions while accidental situations at the nuclear power stations. Volume of measurements carried out on different steps.

Limits of irradiation of different categories of population. Demands for limit of medical irradiation of population. Control levels of medical irradiation while X-ray and radionuclide diagnostics. Planned heightened irradiation for personnel and people not considered to be personnel in accidental situations. Limit of radionuclide content in the main food products. The main documents regulating work with the sources of ionizing irradiation.

28. Program on Pathological Anatomy

General pathological anatomy. Cell pathology. Dystrophias. Parenchymatous dystrophias. Stroma-vascular dystrophias. Mixed dystrophias. Necrosis.

Mors, attributes of mors, postmortem changes. Infringement of a circulation and flow of lymph: Infringement of fabric liquid contents.

Inflammation.

Immunopathological processes. Adaptation and acclimatization.

Regeneration. Processes of adaptation and compensation.

Tumours. Individual pathological anatomy.

Blood system illnesses.

Cardiovascular system illnesses. Rheumatic illnesses.

Respiration bodies illnesses.

Bronchuses acute inflammatory diseases.

Lungs acute inflammatory diseases (acute pneumonia).

Lungs chronic nonspecific diseases.

Digestion bodies illnesses:

Fauces and pharynx illnesses. Sialadens illnesses. Esophagus illnesses. Stomach illnesses.

Intestine illnesses. Liver illnesses. Cholecystic illnesses. Pancreas illnesses. Illnesses of kidneys.

Organs and lactiferous gland illnesses:

Dishormonal of illness. Sexual bodies and lactiferous gland tumours.

Illnesses of pregnancy and postpregnacy period.

Illnesses of internal secretion:

Pituitary body. Paraneuroses. Thyroid gland. Parathyroid glands. Pancreas.

Avitaminosis. Illnesses of the central nervous system. Infectious illnesses.

Virus illnesses. Bacteria caused illnesses.

Inherent defects of development:

Pathology of prenatal and perinatal periods. Pathological anatomy of radiative defects.

Pathomorphosis and iatrogenics.

29. Program on Pathological Physiology

Pathological physiology as a key branch of medical sciences. Nosology.

Pathological physiology (pathophysiology) as a branch of medical education and science. Methods in pathological physiology. History of pathological physiology. General nosology, general etiology. Diseases classification principles. Preventive medicine. Pathogenesis, general pathogenesis, etiopathogenesis. Basic sanogenetic mechanisms.

Genetic disorders.

The common causes of genetic disorders. Induced and spontaneous mutations. Chromosome abnormalities: numerical and structural abnormalities. Monogenic human diseases. Autosomal dominant disorders. Autosomal recessive disorders. X-Linked disorders. Mosaicism. Genomic imprinting. Polygenic and multifactorial diseases.

Environmental pathology.

Hyperbaric conditions. Mountain sickness. Hyperbaric conditions. Caisson disease. Hypothermia. Hibernation. Electrical injury. Tobacco smoking. Alcoholism. Drug addiction. Radiation. Ultra-violet radiation.

Cell injury and cellular adaptations. Apoptosis.

Reversible and irreversible cell injury. Molecular mechanisms cells alteration. Mechanisms of cells adaptation. Apoptosis. Stages of apoptosis. Different ways of apoptosis. Apoptosis in the biological processes.

Local hemodynamic disorders. Hypoxia. Thrombosis.

Arterial and venous hyperemia. Ischemia. Stasis and "sludge-phenomenon". Embolism. Hypoxia: Compensatory and pathological reactions during of hypoxia. Thrombosis. Microcirculatory disorders.

Inflammation.

Acute inflammation. Hereditary defects of acute inflammation. Outcomes of acute inflammation. Systemic effects of inflammation. Chronic inflammation. Etiology and pathogenesis of chronic inflammation. Granulomatous inflammation. Tissue repair. Factors determining variation in inflammatory response. Vital importance of inflammatory mechanisms for human and animal organisms.

Pathophysiology of infectious process.

Interaction of microorganisms and human organism. Mechanisms of defense against of infection. Microorganism invasion properties and defense against of immune system. Spread and

dissemination of microbes. Mechanisms whereby infectious agents damage host tissues. Nosocomial and iatrogenic infections. Sepsis.

Fever and hyperthermia.

Fever. Exogenous and endogenous pyrogens and mechanisms of their action. Thermoregulation during fever. Common characteristic of fever periods. The types of fever. Favorable and unfavorable effects of fever. Pyrotherapy. Hyperthermia, heat exhaustion, heat syncope, heat stroke, sun stroke.

Metabolic disorders.

Total, absolute and partial starvation. Proteins deficiency. Vitamins deficiency. Common causes and consequences disorders in proteins, lipids, and carbohydrate metabolism. Diabetes mellitus (type I and II). Acute and late complications of diabetes mellitus. Hypoglycemia. Obesity. Dyslipoproteinemia. Gout.

Disturbances of body fluids and electrolytes.

Water depletion and excess. Oedema. Hyponatremia, hypernatremia: etiology, pathophysiology and consequences. Hypokaliemia, hyperkaliemia: etiology, pathophysiology and consequences.

Disturbances of acid-base balance.

Metabolic acidosis, metabolic alkalosis, respiratory acidosis, respiratory alkalosis: causes, pathogenesis and consequences. Combined types of acid-base balance disorders.

Disorders of the immune system.

Hypersensitivity reactions. Type I hypersensitivity (anaphylactic type). Systemic and local anaphylaxis. Type II hypersensitivity. Type III hypersensitivity reaction. Cell-mediated type of hypersensitivity (IV type). Autoimmune diseases. Self-tolerance. Mechanisms of autoimmune diseases. Genetic factors in autoimmune disease. Immunodeficiency syndromes. Primary immunodeficiency disorders: T cell defect, B cell defects. Combined immunodeficiency syndromes. Genetic deficiencies of the complement system. Secondary immunodeficiency disorders: AIDS.

Neoplasia.

Differences between benign and malignant tumors. Molecular characteristic of multistep carcinogenesis. Common characteristic of stages of carcinogenesis: transformation, progression, local invasion, metastasis. Host defense against tumors. Clinical features of tumors: local and hormonal effects. Cancer cachexia. Paraneoplastic syndromes.

Pathophysiology of emergency states.

Stress.

Syncope: classification and mechanisms of its development. Unconsciousness and coma

Shock: classification, stages. Hypovolemic, cardiogenic and septic shock. Compartmental syndromes. Terminal stages of disease. Resuscitation (reanimation). Common characteristic of postreanimation disorders.

Hematological disease.

Disorders in plasma and cell volume. Anaemias. Classification of anaemias. Posthemorrhagic anaemias. Hemolytic anemias. Impaired red cell production. Clinical features of anemia. Leukocytosis. Leukopenia. Lymphopenia. Acute and chronic leukemias. Hodgkin's disease. Non-Hodgkin's lymphomas. Plasma cell dyscrasias. Hemorrhagic syndromes. Syndrome of disseminated intravascular coagulation. Hypercoagulation conditions.

Diseases of heart and blood vessels.

Compensatory heart hyperfunction and hypertrophy. Valvular heart diseases. Heart failure: causes, pathogenesis and clinical consequences. Cor pulmonale. Atherosclerosis: morphological types of atherosclerotic lesions, risk factors, pathogenesis, clinical significance. Ischemic heart disease: etiology, pathogenesis. Reversible and irreversible myocardial damage. Myocardial infarction: pathogenesis of transmural and subendocardial myocardial infarction, complications of myocardial infarction. Cardiogenic shock. Arterial hypertension. Pathogenesis of essential arterial hypertension. Pathogenesis of secondary forms of hypertension. Vascular pathology in arterial hypertension.

Respiratory pathophysiology

Respiratory failure. Obstructive and restrictive types of respiratory disorders. Chronic obstructive pulmonary disease. Respiratory distress syndrome. Chronic restrictive lung disease. Pneumothorax. Disorders in respiratory regulation. Periodic types of breath. Terminal breath. Disorders in lung perfusion and ventilation-perfusion ratio. Diffusion lungs disorders. Metabolic lung dysfunction.

Digestive tract and hepatic pathophysiology.

Common etiology of digestive disorders. Dysregulation of appetites and salivary glands dysfunction. Secretory and locomotory stomach dysfunction. Gastritis. Pathophysiology of ulcers in stomach and duodenum. Disorders of intestine and membranous digestion. Intestine intake disorders. Locomotory intestine dysfunction. Malabsorption. Acute and chronic pancreatitis. Common characteristics of the hepatic injury. Jaundice: etiology, pathogenesis and clinical consequences. Hepatic coma, common symptoms of hepatic failure. Cirrhosis. Portal hypertension.

Kidney pathophysiology.

Common mechanisms of renal excretory functions disorders. Etiology and pathogenesis of glomerular diseases. The nephrotic syndrome. The nephritic syndrome. Diseases affecting tubules and interstitium. Acute and chronic renal failure. Cystic diseases of the kidney. Urolithiasis.

Endocrinologic disorders.

Common mechanisms of endocrine disorders. Hyper pituitarism, hypopituitarism and posterior pituitary syndromes. Hyperthyroidism and hypothyroidism. Hyperparathyroidism and hypoparathyroidism. Adrenal insufficiency. Cushing syndrome. Hyperaldosteronism. Adrenogenital syndrome. Pheochromocytoma. Multiple endocrine neoplasia syndromes.

Nervous system pathophysiology.

Disorders of neuron function. Disorders of motor and sensory systems. Diseases of extrapyramidal system. Peripheral neuropathies. Parkinsonism. Pathophysiology of pain. Humans psychoneurosis. Dementia and oligophrenia. Alzheimer disease.

Aging and pathophysiology of elderly organism.

30. Program on Pharmacology

General principles of pharmacology

Introduction to pharmacology. Basis of pharmacokinetics. Principles of drugs dosing. Factors affecting pharmacokinetics of drugs. Factors modifying clearance of drugs. Correction of dosing regimen. Biotransformation of drugs. Farmacodynamic processes.

Pharmacology of particular drug groups

Drugs affecting peripheral nervous system: drugs acting on afferent innervations (local anesthetics, abstracting agents, coating agents, adsorbing agents, irritating agents, emetics, expectorants), drugs affecting afferent innervations (cholinergic agonists (M-cholinomimetics, Ncholinomimetics, M,N-cholinomimetics, stimulators of acetylcholine release), cholinergic antagonists (M-cholinoblockers, ganglionic blockers, muscular relaxants, M,N-cholinoblockers, central cholinolytics)), adrenergic agonists (Catecholamines, alpha-adrenergic agonists, beta-adrenergic agonists, adrenergic agonists of non-direct action), adrenergic antagonists (alpha-adrenergic blockers, beta-adrenergic blockers, mixed alpha-beta-adrenergic blockers, blockers of adrenergic neurons), drugs affecting central nervous system (general anesthetics, ethanol, hypnotics, analgetics, anticonvulsants, antiparkinsonic drugs, neuroleptics, antidepressants, drugs for treatment of mania, tranquilizers, sedative preparations, psychostimulants, nootropic preparations, analeptics), drugs affecting respiratory system (respiratory analeptics, anicough drugs, expectorants, broncholytics, drugs used for treatment of pulmonary edema), drugs affecting cardiovascular system (cardiotonic drugs, antiarrhythmics, antianginal drugs, antihypertensive preparations), diuretics, drugs affecting digestive system (drugs regulating appetite, drugs regulating gastric secretion, drugs used for treatment of pepticulcer, emetic and antiemetic drugs, cholaretics, drugs affecting function of pancreas, drugs regulating intestinal motorics), uterine drugs, drugs affecting blood system (drugs affecting hemopoesis), drugs affecting hemostasis, endocrine preparations (preparations of hormones of hypothalamus and hypophysis, thyroid hormones and antithyroid drugs, preparations of insulin and synthetic hypoglycemic preparations, preparations of sex hormones, preparations of adrenal hormones), enzyme preparations, vitamins (water-soluble vitamins, lipid-soluble vitamins), antiatherosclerotic drugs, anti-inflammatory drugs (steroid anti-inflammatory drugs, non-steroid anti-inflammatory drugs, drugs used for treatment of gout, antiallergic drugs, immunodepressants), antimicrobial and

antiparasitic preparations (antibiotics, sulphonamides, other synthetic antimicrobial preparations, antituberculosis preparations, antiviral preparations, antifungal drugs, anti-protozoal preparations, anti-helminthic drugs), drugs used for treatment of cancer, antiseptics and disinfectants, drugs interaction.

31. Program on Internal Diseases

Bronchitis. Etiology and pathogenesis. Classification of the chronic bronchitis. Clinical manifestations. Diagnostic criteria of bronchitis. Emphysema of the lungs. Principles of treatment.

Emphysema of the lungs. Etiology and pathogenesis. Clinical manifestations. Emphysema of the lungs: initial, secondary, localized, features of clinic, differential diagnostics.

Acute pneumonias. Etiology. Pathogenesis. Classification of pneumonias. Share pneumonia. The basic sets of symptoms. Complications. Measure of degree of gravity. Focal pneumonias. Measure of diagnosis. Features of clinical flow and diagnostics pneumonias of different types. Principles of treatment.

Plevritis. Etiology and pathogenesis. Plevritis. Blocked plevritis. Clinic of plevritis. Diagnostic and medical pleurocentesis. Complications and outcomes. Treatment of plevritis.

Bronchoectatic disease. Etiology and pathogenesis. Clinical symptomatology. Diagnostic measure. Stages of flow. Complications, their early revealing. Treatment.

Abscess and gangrene mild. Etiology and pathogenesis. Clinical exhibiting, their features in dependence on a stage, localization and abundance, gravity of flow. Complications. Treatment.

Bronchial asthma. Etiology and pathogenesis. Classification. A clinical symptomatology and diagnostics atonic and neotopic asthmas. Diagnostic measure of a bronchial asthma. A cupping of an attack. The asthmatic status, contributing factors. Treatment.

Rheumatic disease. Etiology. Pathogenesis. Classification. Clinical pattern. Diagnostic measure. Variants of flow of rheumatic disease. Treatment.

Not rheumatic myocardites. Etiology and pathogenesis. Classification. A clinical pattern. Diagnostic measure. Complications. Principles of treatment.

Contagious endocardit. Etiology, pathogenesis. Clinic. Tromboembolic episodes. The laboratory data. Clinical "masks" of illness. The diagnosis. Treatment.

The got heart diseases. Failure of the mitral valve. Etiology, pathogenesis of homodynamic infringements. A clinical pattern. Stages of flow. The diagnosis. Treatment. Indications to operative treatment.

Mitral stenosis. Etiology. Pathogenesis of distresses. A clinical pattern. Stages of flow. Value of tool methods in diagnostics. Complications. The forecast. Treatment. Indications to operative treatment. A combined mitral heart disease.

Failure of the aortal valve. Etiology, pathogenesis. Hemodynamic distresses. A clinical pattern. Tool research techniques. Flow. Complications. The forecast. Opportunities of operative treatment.

Stenosis of an ostium орты. Etiology, pathogenesis. A clinical pattern. Flow. Stages. Diagnosis. Complications. Indications to operative treatment.

Failure of the three-cuspidate valve. Etiology. Pathogenesis. A clinical pattern. Tool methods of diagnostics. An opportunity of operative treatment.

Essential arterial hypertension. Etiology and pathogenesis. A role of central infringements of a regulation of arterial pressure, sympathetic nervous system, humoral and hormonal factors in originating and progressing of disease. Classification. A clinical pattern of various stages of diseases. Complications. Hypertonic crises. A malignant hypertonia. The differential diagnosis. Treatment. Hypertonic crises: the causes, clinical variants, diagnostic measure. A cupping of hypertonic crisis.

Symptomatic arterial hypertensions. The plan of survey at an arterial hypertension. Classification. Renal arterial hypertensions. Endocrine arterial hypertensions. An arterial hypertension at a subthalamic set of symptoms. Hemodynamic hypertensions.

Atherosclerosis. Epidemiology. Pathogenesis. Risk factors. The most often localizations of an atherosclerosis. Features of clinical exhibitings. Value laboratory, radiological, tool and angiographic research techniques in diagnostics of an atherosclerosis of various localizations. Treatment of an atherosclerosis.

Ischemic illness of heart. Concept about ischemic illness of heart. Risk factors of heart diseases, their value. Classification of heart diseases.

Stenocardia. Clinical variants the Functional classes of a stenocardia. Role electrocardiogramma in revealing coronary failure. Radionuclid methods. A role of invasive methods. Differential diagnostics with myocardial infarction. Treatment.

Myocardial infarction. Pathogenesis. A clinical pattern in the various seasons of disease. Clinical variants of the beginning of illness. The diagnosis. Changes of the electrocardiogram, a pattern of a blood, biochemical parameters. Flow of a myocardial infarction. Atypical forms of a myocardial infarction. Myocardial infarction.

Complications: a cardiogenic shock, infringements of a rhythm and conduction, a heart failure, early and serotinal aneurysms of heart, a cardiac tamponade, a postmyocardial infarction set of symptoms. Treatment. Value of early hospitalization. The help at a pre-hospital stage.

Infringement of a rhythm (arrhythmia) and conduction. The modern representations about a pathogeny of an arrhythmia. Classification of arrhythmias. Methods of diagnostics.

Extrasystole. Pathogenesis. Clinical exhibitings. ECG-ATTRIBUTES. Features of medical tactics, the indication to purpose of antiarrhythmic preparations.

Bouveret's diseases. Pathogenesis. A clinical pattern of an attack of a Bouveret's disease. Changes ECG. Medicamental therapy during an attack of a Bouveret's disease, supraventricular and ventricular. Indications to a countershock.

Set of symptoms of premature exaltation of ventricles. Diagnostics. Indications to surgical treatment.

Ciliary arrhythmia and atrial flutter. Pathogenesis. Classification. A clinical symptomatology. Changes ECG. Therapy of paraxismal and a stationary value of the form of a ciliary arrhythmia. Indications to a countershock. Fibrillation of ventricles. Pathogenesis. Clinic. ECG -ATTRIBUTES. An emergency treatment.

Sick sinus syndrome. Diagnostics. Clinical exhibitings. Indications to an implantation of the simulated pacemaker.

Infringement of conduction. Pathogenesis. Classification. Clinical exhibitings. Character of ECG -CHANGES. Changes of a hemodynamics at various infringements of conduction. Complications. A role of electrophysiological examinations and monitor ECG. Treatment. Indications to an implantation of cardiostimulators.

Heart failure. The modern representations about etiology, pathogenesis of a heart failure. Character of changes of a hemodynamics at a heart failure. Classification of a heart failure. A cardiac asthma, a fluid lungs. Diagnostics of a heart failure. Clinical and additional research techniques. Therapy. A diet.

Gastritis. Etiology. Pathogenesis. Classification. A clinical pattern autoimmune, helicobacterial, refluxial gastritis. The basic sets of symptoms. The diagnosis.

Peptic ulcer of a stomach and duodenum. Etiology. Clinic. The diagnosis. Complications. Treatment.

Chronically a hepatitis. Etiology. Pathogenesis. Classification. Clinical and laboratory sets of symptoms. Diagnostics. Flow and outcomes of the disease. Treatment.

Cirrhosis of a liver. Etiology. Pathogenesis. Classification. A clinical pattern. Diagnostic measure. Complications of a cirrhosis of a liver. Treatment of a cirrhosis of a liver.

Acute nephritis. The modern representations about etiology and pathogenesis. Classification. A clinical pattern. The basic clinical sets of symptoms. Complications. Measure of the diagnosis. Treatment.

Chronic nephritis. Clinical classification. Laboratory - tool research techniques at a chronic nephritis. Treatment.

Chronic pyelonephritis. Etiology and pathogenesis. Clinic. Pathogenesis of the basic signs. Research techniques. Treatment.

Renal failure (acute and chronic). Etiology of acute renal failure. The mechanism of development acute renal insufficiency. Stages acute renal insufficiency. A clinical pattern. Treatment on stages. Indications to a haemodialysis and hemosorptions. Outcomes. Prophylaxis.

Etiology of chronic renal failure (chronic renal insufficiency). Pathogenesis. The basic clinical sets of symptoms. Classification. Treatment.

Anemia. The modern classification of anemic states. An iron deficiency anemia. The basic etiological factors of an iron deficiency anemia. Stages of development of a deficit Ferri lactas in an organism. A clinical pattern, the basic sets of symptoms, measure of the diagnosis. The differential diagnosis. Treatment.

B₁₂-scarce anemias. Pathes of entering to an organism of vitamin B₁₂-the Etiology, value of the autoimmune mechanism of a pathogeny. A clinical pattern. The basic clinical sets of symptoms. Measure of the diagnosis. The differential diagnosis. Flow. Outcomes. Treatment, prophylaxis of relapses. Prophylactic medical examination.

Hemoblastoses

The modern views on etiology and pathogenesis. Value of hereditary factor, influence of radiation, chemical materials, viruses, changes of an exchange of a tryptophan. Pathogenesis. Laws of a tumoral progression. Basic clinical sets of symptoms. Classification. Principles, plans of treatment.

Diffuse illnesses of the connective tissue, definition, classification. Methods of diagnostics. HARD CURRENCY, etiopathogenesis. Clinical manifestations, laboratory – instrumental diagnostics, diagnostical criteria, differences from other diseases of the connective. Treatment.

Systemic scleroderma, etiopathogenesis, clinic, classification, laboratory - instrumental examinations. Diagnostical criteria, criteria of the variety of current. The differential diagnosis from HARD CURRENCY. Treatment.

Dermatomyositis, etiopathogenesis, classification, clinic, laboratory-instrumental examinations. Diagnostics, the differential diagnosis of the other diseases of the connective tissue. Dermatomyositis as exhibiting paraneoplastic syndrom. Treatment.

Rheumatic arthritis, the modern idea on its etiopathogenesis, clinic, diagnostical criteria of RA. The differential diagnosis of the other diseases of joints. Classification. The special cases. Treatment.

Gout, definition, abundance, errors in diagnostics. The modern idea of its etiopathogenesis. Clinic, atypical cases of the beginning of the illness,diagnostical criteria . Particularities of a joint syndrom. Principles of treatment.

Deforming osteoarthritis, the modern idea of the etiopathogenesis, clinic, the differential diagnosis of the other diseases (diffuse illnesses of the connective tissue, rheumatic disease, RA, gout, etc.). Principles of treatment.

Reactive polyarthritides, the causes, clinic, diagnostics, treatment. Bekhterev illness, its etiopathogenesis, clinic, diagnostic criteria. Differential diagnostics of the other diseases. Treatment.

The causes of infringement of bronchial permeability. Classification of a set of symptoms of bronchial obstruction. Diagnostics and differential diagnostics of the obstructive syndrome.

Chronic obstructive bronchitis as the possible cause of a bronchospasm. The modern idea of its etiopathogenesis, clinic. Principles of the differentiated therapy.

Diagnostics of the bronchial asthma, differential diagnostics with other bronchi-obstructive syndrome. The causes of originating of the asthmatic status, clinic, diagnostics, stages. An acute management. Principles of treatment of a bronchial asthma. A cupping of an attack. Treatment during the inter-attack period.

Etiopathogenesis, diagnostics and classifications of pneumonias, the special forms of pneumonias. Principles of the treatment. Principles of a rational antibiotic therapy. Classification of antibiotics. Symptomatic agents.

Diffuse diseases of the lungs, definition, the causes. Classification. Clinic, diagnostics of fibrotic alveolitis, sarcoidosis, disseminations of the tumoral nature. Damaging of the lungs at systemic diseases of a connective tissue. Hemosiderosis of the lungs. Gudspudcher's syndrome. Differential diagnostics of the diffuse diseases of the lungs. Tactics of the doctor.

Bronchoectatic disease, abscess, gangrene of the lungs. Its etiopathogenesis. Clinic, diagnostics, differential diagnostics. Principles of the differentiated medicinal therapies. Indications to surgical treatment.

Glomerulonephritis, the modern idea of its etiology and a pathogenesis. Value of an immune link of its pathogenesis. Classification. Clinical manifestations. The basic clinical syndromes. Laboratory – instrumental methods of diagnostics. Clinical forms and variants of flow. Criteria of the diagnosis. Outcomes. Treatment.

Glomerulonephritis chronic, etiopathogenesis, classification, clinical and morphological. Clinic of various forms. Diagnostics, differential diagnostics with an acute glomerulonephritis, a focal nephritis, subacute malignant, damaging of nephroses at diffuse diseases of a connective tissue. Treatment (a regimen, a diet, immunodepressive, steroid agents, other medicines).

Pyelonephritis, acute, the modern idea of the etiopathogenesis. Classification. Clinic. Diagnostics. Treatment. A chronic pyelonephritis, the causes of synchronization. Classification. Clinical current. Methods of diagnostics (analyses of urine, chromocytoscopy, excretory and retrograde pyelography, ultrasonic research of nephroses). Outcomes. Treatment.

Pathogenesis of the basic clinical manifestations of the nephrotic syndrome. Clinical manifestations. Laboratory diagnostics of the nephrotic syndrome. Differential diagnostics of a nephrotic syndrome at HARD CURRENCY, diabetes, rheumatic arthritis, glomerulonephritis and other diseases. Opportunities of the modern therapy.

Lardaceous, the modern idea of its etiopathogenesis. Clinical manifestations. Initial and secondary lardaceous. Diagnostics, differential diagnostics. Basic principles of therapy.

Etiology of acute renal failure (ARF). The mechanism of development. Clinical manifestations, stages in development. Treatment on stages. Indications to haemodialysis and hemosorption. Outcomes. Prophylaxis.

Etiology of chronic renal failure (CRF). A pathogenesis. The basic clinical signs. Classification. Stages. Treatment. Indications to haemodialysis and its opportunities. Transplantation of a nephros.

Anemia, definition, classification, working groups. Anemic syndroms, diagnostics. The iron deficiency anemia (an exchange Ferri lactas in the organism, etiopathogenesis of anemia, stages, clinic, laboratory diagnostics, distinctive features - a sideropenic syndrom). Treatment.

Acute posthemorrhagic anemia, diagnostics, degrees of gravity.

Aplastic anemia (endo-, the exogenous causes, classification, clinic, diagnostics, treatment).

Hemolytic anemias: ancestral, got. Mechanisms of a hemolysis and principal causes of development of hemolytic anemias. Classification. Basic attributes. The basic clinical-laboratory attributes of ancestral spherocytosis, enzymopathias, hemoglobinopathies.

Autoimmune. Diagnostic criteria. Treatment. The forecast.

Hemolytic crisis, clinic, diagnostics, treatment.

B12-scarce anemia, exchange of vitamin B12 in the organism. Value of the autoimmune mechanism of a pathogenesis. The basic clinical sets of symptoms, measure of the diagnosis. Treatment. Prophylaxis of relapses. Differential diagnostics of anemias.

Hemoblastoses, definition, classification, the modern views on an etiopathogenesis, provoking factors. Blanket sets of symptoms clinical. A myelosis. A clinical pattern. Stages of flow. Diagnostics, the differential diagnosis. Complications. The forecast. Treatment.

Chronic lymphoid leukosis, clinical variants, their features, diagnostics, complications. The forecast. Treatment.

Leukemoid tests, concept, phylums, the differential diagnosis with leukoses. Treatment.

Differential diagnostics lymphadenopathias (a lymphogranulomatosis, a sarcoidosis, a contagious mononucleosis, brucellosis, a lymphadenopathy at collagenosis).

Acute leukoses, classification, clinic of various variants of acute leukosis, laboratory diagnostics. Cytochemical responses, current and complications. Differential diagnostics with chronic leukoses. Treatment (stages, cytostatic preparations, transplantation of an osteal brain).

Polycythemia. An etiopathogenesis. Clinical sets of symptoms, laboratory diagnostics. Medicamental treatment. Plasmaferesis.

Secondary hyperglobulias, the causes, diagnostics, differential diagnostics with other diseases (with a polycythemia). An osteomyelofibrosis, clinic, diagnostics, differential diagnostics with other diseases of blood. Treatment.

Hemorrhagic diathesises, the causes of development, classification. Blanket attributes, phylums кровоточивости. Research techniques.

Angiostaxis, pathogenesis of bleedings. Clinic, the diagnosis, the differential diagnosis. The forecast. Treatment and prophylaxis.

Werlhof's disease, hemorrhagic vasculitis, hemorrhagic a body - anginoectasia (illness of Randue-Osler), pathogenies of bleedings at these diseases. Clinic, the diagnosis, the differential diagnosis. Treatment.

Chronic gastritis, definition, the modern views on an etiopathogenesis, classification by morphological, functional, etiological principles. The basic sets of symptoms. The diagnosis, the differential diagnosis. Treatment.

Peptic ulcer, the basic and contributing factors, the modern views on an etiopathogenesis. Clinic, dependence on localization of ulcer. Diagnostics. Differential diagnostics with the tumour of the stomach, cholecystitis, pancreatitis, etc. Complications: perforation, malignancy, perigastritis, periduodenitis. Symptomatic ulcers.

Treatment. The differentiated approaches to treatment in dependences on localization, a combination of the ulcers, concomitant diseases, presence of complications of a peptic ulcer. Terrain clearance and relative indications to surgical treatment.

The differential diagnosis of the diseases of the bile ducts. Treatment. A diet. Medicamental treatment. Therapeutic aspects of the states incipient after a cholecystectomy. Principal causes. Clinic. Opportunities of diagnostics. Treatment.

Hepatomegalia, principal causes of development (hepatitises, cirrhosises, tumours, infringement of a circulation, hematological diseases, focal lesions of a liver, disbolism). Augmentation of a liver in a combination to augmentation of a lien, to presence of an ascites, an icterus. The differential diagnosis at a hepatomegalia, algorithm of survey of the patient.

The causes of a splenomegaly. Algorithm of survey of the patient.

Chronic hepatitis, definition. The modern views on an etiopathogenesis, classification, the basic clinical-laboratory syndrom. Instrumental methods of diagnostics. Principles of treatment.

Cirrhosis of a liver, definition, the modern idea of its etiopathogenesis. The basic clinical-laboratory syndrom. Classification, etiological and functional, stages of disease. The differential diagnosis with other diseases of liver. The differentiated therapy in dependence on etiology. Rendering of the emergency help at a bleeding from amplate veins of an esophagus.

The hepatic encephalopathy, provoking factors, pathogenesis, stages, treatment.

Concept of "acute abdomen". A clinical symptomatology. Diseases at which development of "acute abdomen" is possible. The differential diagnosis at "Acute abdomen". The differential diagnosis at a gastrointestinal bleeding. Diagnostic measure of a bleeding, his quantity, localization and the cause. Medical tactics.

32. Program on Surgical Diseases

Subject contents: diagnostics of the most often meet surgical diseases, principles of their treatment and prophylaxes.

Neck, thyroid gland and parathyroid glands:

Faults of development. Middle brushes and neck fistulas. Lateral brushes and neck fistulas. Damages of neck organs. Abscess and phlegmon of neck. Tumours of neck. Thyroid glands diseases:

Endemial struma. Sporadic struma. Thyrotoxicosis. Thyroidites and strumites. Thyroiditis of Hasimoto. Thyroiditis of Ridelya. Recurrent struma. Thyroid gland cancer. Paraththyroidal glands tumours.

Thoracal wall and mammary glands. Mammary glands diseases:

Acute purulent mastitis.

Dishomonal disease - mastopathy.

Nonmalignant tumours.

Cancer of dairy glands.

Diseases of respiratory organs.

Trachea diseases.

Lungs pleura and mediastinums diseases:

Lungs abscess and hangrene. Chronic lungs abscess. Lungs hangrene. Bronchi ectatic illness.

Acute purulent pleuritis. Pyopneumothorax. Pleura chronic empyema. Lungs cancer.

Nonmalignant lungs tumours. Lungs echinococcosis. Mediastinum tumours and cysts.

Mediastinitis. Diseases of circulation organs:

Heart diseases

Inherent faults of heart

Acquired faults of heart

Ischemic illness of heart

Postmyocardial infarction aneurysm of heart

Pericarditis

Vessels deseases:

Diseases of arterias

True and false aneurysms

Thoracic and ventral aorta aneurysms
Aorta coarctation
Arteries atherosclerotic defects
Thromboangitis.
Nonspecific aortoarteriitis.
Diabetic micro-macro- angiopathy
Arterial fibrinolytic and embolisms
Diseases of veins of inferior extremities.
Thrombophlebitis of inferior extremities.
Embolism of pulmonary artery.
Postphlebotic set of symptoms.
Lymphatic system failure.
Diseases of members of digestion:
Esophagus diseases:
Inherent faults of development.
Achalasia carditis.
Esophagus diverticula.
Corrosive burns and cicatricial esophageal stenoses.
Foreign bodies.
Tumours.

Esophagus cancer. Stomach and duodenum intestine diseases:
Stomach peptic ulcer (ventriculus).
Round ulcer complications.
Stomach and duodenum intestine perforated ulcer.
Operative treatment of stomach and duodenum intestine ulcer.
Zollinger Ellison syndrome.
Symptomatic ulcers.
Mellory-Weiss syndrome.
Stomach precancerous diseases (ventriculus).
Stomach (ventriculus) non epithelial tumours.
Stomach carcinoma.
Illnesses of operated stomach (ventriculus).
Intestine diseases:
Small intestine diseases.
Diverticula.
Small intestine fistulas.
Small intestine tumours.
Crohn's disease.
Appendicitis.
Acute appendicitis.
Appendicectomy.
Carcinoid of vermiform appendix.
Colon diseases.

Faults of development.
 Chronic nonspecific ulcerous colitis.
 Colon diverticulums.
 Ischemic colitis.
 Intestinal fistulas.
 Nonmalignant tumours and polypostures.
 Colonic intestine cancer.
 Intestinal obstruction:
 Inherent intestinal obstruction.
 Dynamic (spastic, paralytic) intestinal obstruction.
 Mechanical intestinal obstruction.
 Invagination.
 Rectum diseases:
 Hemorrhoids
 Rectum fracture.
 Paraproctites and pararectum fistulas.
 Rectum and polypostures polyps.
 Rectum solitary ulcer.
 Rectum cancer.
 Diseases of liver, bile bladder and ducts:
 Choletithic disease.
 Obturation of general bile duct.
 Acute and chronic cholecystitis.
 Cholangites.
 Postcholecystectomy set of symptoms.
 Portal hypertension.

Liver echinococcosis and alveococcosis. Cancer of bile bladder and ducts. Liver nonmalignant tumours. Liver cancer. Lien diseases. Pancreas diseases:
 Pancreatitis.
 Chronic pancreatitis, pancreas cyst.
 Insuloma.
 Pancreas cancer.
 Abdominal wall and diaphragm diseases:
 Gaste hernias.
 Strangulated hernia.
 Hernias of digestive aperture of diaphragm.
 Phrenasthenia.
 Peritonitises:
 Acute purulent peritonitis. Circumscribed peritonitises. Genecological peritonitises. Tubercular peritonitis. Retroperitoneal space:
 Purulent - inflammatory diseases.
 Tumours.
 Normonal active tumours.

33. Program on Orthopedic/Prosthetic Dentistry

"Prosthetic dentistry" is the discipline containing systematized scientific knowledge about prevention, etiology, pathogenesis and treatment of developmental anomalies, acquired defects, injuries, deformities and functional disorders of the masticatory apparatus and other organs of the dental system.

Program on Prosthetic Dentistry includes the latest scientific evidence on new methods of dental prosthetics and structural materials, such as:

- pressed ceramics;
- production of all-ceramic dental prostheses using CAD/CAM technology;
- peculiarities of various designs of fixed and removable prostheses on implants producing;
- adhesive including developed at the department dentures;
- new methods of splinting in periodontal tissues diseases;
- use of computer technology in planning and designing of dentures;
- peculiarities of orthodontic treatment of dental anomalies and dentition deformities in the formed bite using physical and pharmacological agents.

The tasks of the discipline are in a student's gaining academic competence based on knowledge of:

- medical terminology;
- medical ethics and deontology;
- the development history and current directions of research in prosthetic dentistry in the world and the Republic of Belarus;
- development of age changes, anatomical and histological structure, physiology, dental system, biomechanics of masticatory apparatus;
- etiology, pathogenesis, clinical manifestations, diagnosis, differential diagnosis, prevention, treatment main nosological forms of dental systems:
 - pathology of the teeth,
 - partial and complete absence of teeth,
 - periodontal diseases,
 - anomalies and deformation of dental system,
 - traumatic lesions of jaw and face,
 - diseases of temporomandibular joint,
 - diseases of the oral mucosa,
 - combined forms of lesions and diseases of the dental system.

The tasks of teaching the subject are in forming of social, personal and professional competence based on knowledge and application of:

1. Principles of a mouth preparation to orthopedic interventions, methods of analgesia.
2. Mechanisms of adaptation to prosthesis and orthotic intervention effect on dental system, and organism as a whole.
3. Organizational and economic aspects of orthopedic department in dental clinics, health and sanitation requirements and a dentist's and a dental technician's workspace layout.
4. Professional and ethical standards, orders and letters of instruction determining work of a dentist-orthopedist, legislation.

At the end of the discipline studying a student acquires knowledge including:

- physiology of dental system, anatomy and biomechanics of masticatory apparatus;
- etiology, pathogenesis, clinical diagnosis, differential diagnosis, prevention and treatments of the most common pathological processes and diseases of dental system;
- methods of oral cavity preparing for orthopedic interventions, methods of anesthesia;
- mechanisms of adaptation to artificial limbs and orthopedic effects of interventions on dental system and a patient's organism;
- organizational and economic aspects of orthopedic department in dental clinics;

as a result of the discipline digestion a student acquires skills in:

- a dentist-orthopedist's workplace organization taking into account ergonomics and in accordance with the requirements of asepsis, antisepsis and safety;
- prevention of common complications in patients at dental attendance and if necessary to provide emergency medical care;
- examination of dental patients, determination of indications for health-building and special events before prosthesis;
- choosing of treatment method and design of prostheses and aids;
- carrying out orthodontic treatment of anomalies and deformities of dentition in adults

34. Program on Therapeutic Stomatology

Therapeutic Stomatology is an academic discipline that contains framed scientific knowledge etiology and pathogenesis of teeth, periodont tissues and tunica mucosa of mouth diseases, their diagnostics, treatment and prophylaxis.

The discipline studying allows reaching knowledge about dental diseases development mechanisms, methods of prophylaxis and therapeutic treatment as it is the requirement for successful achievements in allied disciplines.

The purpose of discipline studying is in forming clinic thinking and reaching scientific knowledge on etiology, pathogenesis, diagnostics, treatment and prophylaxis diseases of teeth, tissues of periodont and mouth tunica mucosa.

The tasks of the discipline studying:

- studying the principles of prophylaxis and removing dental diseases risk factors leading to health, esthetics teeth and surround tissues functions disturbance;
- forming philosophy of oral health based on respect for the daily activities of oral care;
- forming and improving of students' skills in prevention individual plan composing;
- forming and improving students' basic knowledge and skills to diagnose and treat oral pathology;
- forming and improving of manual skills in examination methods, differential diagnosis and completion of medical records;
- acquisition and generalization of students' knowledge of periodontal tissues, basic principles of prevention and treatment of periodontal diseases;
- forming and improving of manual skills for restoration therapy;
- mastering the basic principles endodontic treatment;
- forming and improving of skills in therapeutic activities conducting to support periodontal health;
- integrating endodontic treatment with other parts of a patient's treatment plan (periodontology, orthopedics, surgery, etc.);
- forming and improving of students' knowledge in diagnosis of emergency conditions and providing complex dental care.

At the end of the discipline learning students should be able:

- to create a rapport with a patient observing principles of medical ethics in communication and actions;
- to assess general condition of a patient before and during treatment and diagnostic measures;
- to reduce or eliminate dental pain by general or local anesthesia;
- to treat tooth decay, pulpitis, apical periodontitis, gingivitis;
- to define indications for surgical treatment of complicated caries, surgical, orthopedic treatment of periodontitis;
- to set a patient's necessity for additional research, consulting expert in time;
- to plan and implement effective primary, secondary and tertiary prevention of dental diseases, periodontitis and mouth tunica mucosa.

35. Program on Pediatric Dentistry and Prevention of Dental Diseases

Pediatric Dentistry and Prophylaxis of Stomatologic Diseases is a discipline that contains systematic scientific knowledge on diagnostics, treatment and prophylaxis of stomatologic diseases in children.

The purpose of studying the discipline of “Pediatric Dentistry and Prophylaxis of Stomatologic Diseases” is forming and reaching scientific knowledge about peculiarities of rendering medical and prophylactic dental help for children in student.

The tasks of teaching the discipline are in forming of social-personal and professional competence based on formation of clinical thinking when medical ethics and deontology norms are followed.

The structure of the discipline working program consists of three divisions: “Prophylaxis of stomatologic diseases”, “pediatric preventive dentistry”, “Policlinic and hospital pediatric dental surgery”.

As a result of the discipline studying students must know:

- methods of oral hygiene and stomatological status evaluation;
- methods of healthy-life propaganda;
- means and methods of oral cavity hygienic keeping;
- means and preparations for caries and periodont tissues diseases prophylaxis;
- organization of surgical and therapeutical qualify dental health service for children;
- etiology, pathogenesis, methods of diagnostics, peculiarities of clinical implications, treatment and prophylaxis of congenital and evoked diseases and traumatic injury of hard tooth tissues, periodont, tunica mucosa of mouth in children;
- appearing and development of main dental diseases risk factors;
- work with a patient on children’s stomatological reception organization peculiarities;
- methods and means for primary prevention of caries, tooth forming pathology, non-carious pathology of hard tooth tissues, tooth injures, periodont diseases and pathology of occlusion forming;

As a result of the discipline studying students must be able:

- to define appearing and development of main dental diseases risk factors;
- to choose means and methods of main stomatological diseases prophylaxis in accordance with a patient’s character and risk level;
- to organize and (or) ensure home, office and communal preventive measures;
- to plan a project of community health work;
- to make optimal contact with children, teenagers and their parents; to ensure positive psychological afterimpression in a child after his dentist seeing;
- to make complex of diagnostic activities in children with urgent and complicated caries, non-carious affection and injuries of teeth, periodont and tunica mucosa of mouth diseases;
- to ground and formulate diagnosis of stomatological pathology in children according to International Classification of Diseases (ICD-10);
- to do application, infiltration and block anesthesia of maxillofacial part in children;
- to prepare carious cavities of temporary and permanent with non-generated teeth roots taking into account peculiarities of materials using for teeth restoration;

- to carry out endodontic treatment of temporary and permanent teeth in children;
- to draw temporary and permanent teeth in children;
- to open subperiosteal abscess and to drain the wound;
- to provide effective treatment of periodont and tunica mucosa of mouth diseases.

Description of recommended methods of teaching. traditional methods of the discipline teaching are used: lectures, practical classes and elements of students' independent supervised work.

The teaching is organized with traditional and modern educational and informational resources (multimedia presentations of lectures and practical classes), interactive resources in local University network and Internet use.

36. Program on Maxillofacial Surgery and Surgical Stomatology

Maxillofacial Surgery and Operative Dentistry is an academic discipline that contains framed scientific knowledge on etiology, pathogenesis, clinical symptomatology; methods of special, laboratory diagnostics, differential diagnostics, prophylaxis and complex operative treatment of maxillofacial part diseases and damages; postoperative rehabilitation of patients.

Maxillofacial surgery and operative dentistry is studied on the 3, 4, 5 courses of speciality "Stomatology".

The purpose of the discipline teaching is in preparing of a specialist with clinical thinking who is able to diagnose and provide operative treatment of main maxillofacial area diseases in ambulatory and hospital conditions basing on acquired scientific knowledge on etiology, pathogenesis, clinical and special methods of researching.

Basic problems of maxillofacial surgery in practice of a doctor of a general profile.

Purulent inflammatory processes of maxillofacial range in practice of a doctor of a general profile.

Traumatic damages of maxillofacial area. Oncology of maxillo-facial area.

Methods of inspection of patients with basic diseases of maxillofacial range.

Caries of teeth and their complication.

Rile of dontogenous infection contamination in development and current of general diseases.

Diseases of oral cavity mucosa. Clinic, prophylaxis.

Purulent – inflammatory diseases of maxillofacial area. Abscess and phlegmon. Clinic, rendering of the first medical assistance.

Stomatic chroniosepsis, focal infection contamination – serious complications of odontogenous infection contamination.

Traumatic damages of mild tissues of maxillofacial range. Clinic, rendering of the first medical assistance.

Traumatic damages of mandible. Clinic, rendering of the first medical assistance.

The combined damages of maxillofacial range. Clinic, rendering of the first medical assistance.

Complications and traumas of maxillofacial range menacing life of the patient, rendering of the first medical help.

Features of development and clinical exhibitings of tumoral processes of maxillofacial range.

Modern aspects of treatment of patients with tumours of maxillofacial localization.

Inherent faults of development of maxillofacial range, role of the doctor of general profile in diagnostic and medical tactics.

Acquired defects and deformations of maxillofacial range. Clinic, inspection.

Plastic and plastic surgery of maxillofacial range.

As a result of the discipline studying students must know:

- organization of maxillofacial surgery service;
- anesthesia in maxillofacial surgery;
- dental surgery;
- odontogenic inflammatory process;
- specific inflammatory process of maxillofacial area;
- maxillary sinuses diseases;
- salivary glands diseases;
- traumatology of maxillofacial area;
- temporo mandibular joint diseases;
- facial nerves diseases;
- marginal periodont diseases;
- preprothetic preparation of oral cavity;
- benign and tumor-like masses of maxillofacial area;
- oncology of maxillofacial area;
- plastic and reconstructive surgery of maxillofacial area.
- to examine a patient with surgical pathology of maxillofacial area;
- to carry out anesthesia of maxillofacial area;
- to carry out ambulatory surgical intervention in oral cavity;
- to give acute care in urgent conditions when a dental surgeon seeing;
- to massage greater salivary glands;
- to carry out initial operative handling of maxillofacial soft tissues;
- to give acute care to patients with lower and upper jaw fractures;
- to give acute care in shock, asphyxia, bleeding;
- to give acute care to patients with facial nerves diseases.

37. Program on Pediatrics

Purpose and problems of the subject, its place in educational process: elucidation of central questions in pediatrics, modern concepts of pathogenesis, diagnostics, clinic and treatment of child's diseases in age aspect.

Lectures

Introduction. Anatomical-physiological features of child's organism. Periods of childhood. Concept of the subject "pediatrics". Periods of infancy. Anatomical-physiological features of nervous system, organs of digestion, blood circulation, urinary excretion, endocrine, blood forming and lymphatic systems

Features of substances exchange. Rearing. Age exchange features. Formation of cavity digestion. Natural, mixed and artificial rearing. Characteristic of breast milk, its advantages. Rules of meal estimation.

Asphyxia of newborn, natal trauma of the central nervous system. Consequences. Etiology and pathogenesis of asphyxias. Classification. Diagnostics, pathogenesis of CNS damage. Diagnostics. Clinic. Treatment. Rehabilitation. Trauma of spinal cord. Treatment, rehabilitation. Pre-natal infections and purulent – inflammatory diseases. Etiopathogenesis, diagnostics, clinic of pre-natal infections. Treatment. Definition of sepsis. Classification of clinical norms. Discussion - disease or phase. Clinical syndrome - complexes. Diagnostics. Treatment. Outcomes. Rehabilitation.

Hemolytic illness of fetus and a newborn. Jaundices of newborn. Etiopathogenesis of immunologic conflict according to Rhesus factor and to blood group. Clinic. Diagnostics. Classification of clinical forms. Treatment. Urgent help, intensive therapy. Preventive maintenance. The differentiated diagnosis of jaundices in newborn. Treatment. Consequences of nuclear jaundice. Treatment. Rehabilitation.

Anemia in newborn and at early age. Anemia classification. Etiopathogenesis of formation. Diagnostics. Clinic. Treatment, preventive maintenance, rehabilitation.

Nonrheumatic carditis in children. Congenital heart malformations in children. Etiopathogenesis of Nonrheumatic carditis. Classification. Clinic. Diagnostics. Treatment. Clinical examination. Preventive maintenance. Congenital malformations. Reasons for formation. Phases of adaptation. Classification. Principles of treatment.

Stomach ulcer and duodenal ulcer. Modern aspects of etiopathogenesis, diagnostics. Stages of ulcerous process. Clinic. Methods of treatment: regimen, diet, drug therapy depending on etiology. Clinical examination. Preventive maintenance.

Neurotoxicosis in children. Etiology, pathogenesis, clinical manifestations, intensive therapy.

Urgent help in hematology. Deficiency anemia in children, thrombocytopenia, hemophilia. Clinic, urgent help, algorithm.

Urgent help in endocrinology: DKA; hyperosmolar coma; hypoglycemic coma; treatment of diabetes mellitus; treatment of hypothyroid coma, thyrotoxicosis; suprarenal insufficiency.

Acute and chronic renal insufficiency. Clinic, diagnostics, intensive therapy. Crush syndrome, GUS. Hemodialysis.

Stomach and duodenal ulcers in children. Urgent help at bleeding. Etiology. Clinic. Diagnostic and treatment.

Chronic cardiac insufficiency (CCI). Acute cardiac insufficiency. Rhythm disturbance. Clinic and diagnostics of CCI, acute cardiac insufficiency, basic rhythm disturbances.

Acute and chronic respiratory insufficiency. Status asthmaticus. Etiology and pathogenesis. Clinic. Diagnostics and treatment.

Sepsis. Infectious-toxic shock. Urgent help, infusion therapy.

Urgent help at drowning, suffocation, clinical death, acute allergic reactions, snake bites, electro trauma. Algorithm of urgent help rendering .

Practical classes

Anatomical-physiological features and methods of skin research, hypodermic-fatty cellular tissue, lymph nodes, muscular and bony system, cartilages. Rules of child's hospitalization and examination. Child's physical, mental and sexual development.

Anatomical-physiological features and methods of research of respiratory system and circulatory system.

Anatomical-physiological features and methods of research of blood and endocrine system; digestion, urinary excretion.

Rearing.

Consequence of asphyxia and intracranial trauma.

Jaundices of newborn, consequences of hemolytic disease of newborn.

Purulent - inflammatory diseases. Sepsis. Pre-natal infections.

SDR, congenital heart diseases. Etiology, pathogenesis, SDR in newborn. SDR classification. Clinic, diagnostics of SDR. Therapy of SDR. Etiology, pathogenesis of VPS. Diagnosis and differentiated diagnosis of VPS. Treatment. Supervision of newborn. Clinical analysis of supervised patients. Textual control.

Rickets. Spasmophilia, hyper- and hypovitaminoses, hypotrophy, abnormality of the constitutions. Diatheses.

Rheumatism. Rheumatoid arthritis. Diseases of connective tissue. Nonrheumatic carditis. Impaired cardiac function. VPS.

Clinical manifestations of leucosis, hemolytic and deficiency anemia, thrombocytopenia, vasculites. Diagnostics, treatment, clinical examination

Clinical manifestations of hyper- and hypofunction of thyroid gland, adrenals, diabetes mellitus.

Diseases of digestive system.

Diseases of urinary system. Clinical analysis of the patient with glomerulonephritis, pyelonephritis, cystitis. Chronic cardiac insufficiency (CCI): etiology, pathogenesis, classification of CCI. Clinic and of diagnostics of CCI. Treatment of CCI. Comas at diabetes mellitus. Treatment of diabetes mellitus: DKA, hypersmolar coma, hypoglycemic coma, treatment of diabetes mellitus. Chronic insufficiency of adrenals. Adrenogenital syndrome: etiology, pathogenesis, clinic of HPN in children, treatment. Adrenogenital syndrome. Syndrome therapy of newborn. Antitubercular vaccination in the maternity house. Syndrome of acute cardiac insufficiency. Shock. Sharp acute anemic syndrome. Convulsive syndrome. Syndrome of hypogleukemia. Clinical examination and the rehabilitation of children with diseases of cardio - vascular systems. Principles of clinical examination. Making up plans of routine examinations and treatment. Rehabilitation. Tactics on vaccination and physical training. Conducting the documentation. Health groups. Clinical examination and rehabilitation of children with diseases of digestive organs. Principles of clinical examination. Making up plans of routine examinations and treatment. Rehabilitation. Tactics on vaccination and physical training. Conducting documentation. Health groups. Clinical examination and rehabilitation of children with diseases of urinary excretion organs. Principles of clinical examination. Making up plans of routine examinations and treatment. Rehabilitation. Tactics on vaccination and physical training. Conducting documentation. Health groups. Clinical examination and rehabilitation of children with diseases of endocrine system. Principles of clinical examination. Making up plans of routine examinations and treatment. Rehabilitation. Tactics on vaccination and physical training. Conducting documentation. Groups of health. Clinical examination and rehabilitation of children with diseases of respiratory organs. Principles of clinical examination. Making up plans of routine examinations and treatment. Rehabilitation. Tactics on vaccination and physical training. Conducting documentation. Health groups. Infusive therapy in pediatrics. Account of physiological daily requirement volume. Compensation of dehydration. Current pathological losses. Programs of disintoxication at infectious - toxic shock. Account of volume of infusive therapy according to disintoxication program. Ratio of solutions, starting solution. Explanation of choice of diuretic drugs. Control of infusive therapy. Chronic renal insufficiency. Clinic and diagnostics, intensive therapy.

38. Program on Psychiatry and Narcology

Lectures

Psychiatry as speciality of medicine. Historical aspects of psychiatry development: basic parts of psychiatry; interconnection of psychiatry with other sciences; development of studies about mental disorders in an antiquity, middle ages, Western countries, Russia, Byelorussia.

Classification of mental illnesses MKB-10. II. Methodological foundations of psychiatry: international classification of mental diseases 10 reconsideration, basic sections, diagnostic characteristics of mental diseases.

Methodological bases of psychiatry.

Psychopathologic symptoms and syndromes:

- Perception disturbances. Thinking disturbances. Memory disturbance
- Emotional sphere disturbances. Attention disturbances
- Will disturbances. Intelligence disturbances. Consciousness disturbances

Etiology, pathogenesis and treatment of mental disturbances:

- Diagnostics and epidemiology of mental disturbances.
- Etiology and pathogenesis of mental diseases.
- Treatment of mental disturbances.

Schizophrenia. Regularities of pathogenesis, clinic, clinical course, clinical forms, therapy and patients rehabilitation: history of study; symptomatology, basic signs; syndromology; forms of schizophrenia; types of disease course, their peculiarities; etiology and pathogenesis of schizophrenia; differentiated diagnosis; pathological anatomy; treatment of schizophrenia, kinds; types of remissions at schizophrenia; types of defects at schizophrenia; demonstration of the patients, symptomatology analysis.

Boundary psychological disturbances, classification according to MKB-10. Prevalence, clinic, treatment. Disturbing-phobic disturbances. Obsessive–compulsive disturbances, reaction to serious stress and adaptation disturbances. Dissociative disturbances. Somatoformic disturbances. Treatment, prognosis.

Person and behavior disturbances at adults: paranoid person disturbance; schizoid person disturbance; dissociative person disturbance; emotional - unstable person disturbance; hysterical person disturbance; anxious and dependent person disturbance; disturbance of sexual identification of sexual preference; diagnostic signs, treatment and prognosis.

Mental and behavioral disturbances due to the use of psychoactive substances: alcohol dependence; alcoholic psychoses; mental disturbance connected with the use of opioids, cannabinoids, sedative and somnolent substances, cocaine, hallucinogens and volatile compounds; treatment, differentiated diagnosis, preventive measures, prognosis.

Organic and symptomatic, mental disturbances: dementia at Alzheimer's disease; vascular dementia; mental condition features of elderly age, psychoses of late age; psychoses owing to somatic disturbances, peculiarities of course and appearance; radiation sickness, clinic, treatment.

Practical classes

Psychiatry as a speciality of medicine. Historical aspects of psychiatry development. Psychopathologic symptoms: basic sections of psychiatry; interrelation of psychiatry with other sciences; development of the studies about mental disturbance in antiquity, Middle Ages, Western countries, Russia, Byelorussia.

Psychopathologic symptoms: disturbance of perception, disturbance of thinking, disturbance of memory, disturbance of emotional sphere, disturbance of attention, disturbance of will, disturbance of intelligence, disturbance of consciousness.

Basic psychopathologic syndromes: neurosis-like syndromes (asthenic syndrome, obsessive-compulsive syndrome, dissociative-conversion syndrome, disturbing - phobic, hypochondriac); syndromes of consciousness disturbance (condition of obnubilation, delirium, amentia, oneiroid, twilight disturbance, special disturbance); delirious syndromes (paranoiac syndrome, paranoid syndrome, paraphrenic syndrome, Kandinski-Klerambo syndrome, hallucinatory syndrome); syndromes of emotional disturbances (depressing syndrome, maniacal syndrome); syndromes of motor-willed disturbances (catatonic syndrome, apatoabulitic syndrome); syndromes of intellectual-mnestic disturbances (Korsakovski syndrome, dement syndrome, syndrome of mental deficiency).

Classification of mental diseases MKB-10. Diagnostics and epidemiology of mental diseases, Etiology and pathogenesis of mental disturbances. Organization of psychiatric help to the population. Treatment of the mentally diseased. Clinical and paraclinical methods of patients research. Scheme of history of illness.

Affective disturbances of mood in terms of bipolar affective, recurring depressing disturbances, chronic disturbance of mood (cyclotomy, distimy). Clinic, differentiated diagnosis. Methods of affective disturbances therapy.

Schizophrenia. Laws of pathogenesis, clinic and course of disease. Clinical types of course of disease. Schizotypal disturbances. Therapy and patients rehabilitation.

Neurotic disturbances connected with stress: disturbing - phobic, general-disturbing, obsessive-compulsive and dissociative disturbances. Reaction to serious stress and adaptation disturbance. Somatoformic disturbances. Clinic, dynamics, treatment. Sexology, sexual pathology, disturbance of mature person and adult behavior. Specific disturbances of the person. Disturbance of sexual identification and sexual preference. Clinic, treatment.

Mental and behavioral disturbances owing to psychoactive substances use. Alcoholism, development stages and treatment, basic forms alcoholic psychoses, clinic and therapy. Organization narcological service. Drug addiction and drug abuse. Kinds of drug addictions. Clinic, treatment.

Organic disturbances. Dementia at Alzheimer's disease. Vascular dementia. Dementia at Peak illness. Clinic, treatment, peculiarities of mental condition in elderly age. Psychoses of late age. Clinic, treatment.

Psychotic disturbances as a result of damage and brain dysfunction: psychotic disturbances and person disturbances. Mental disturbances at brain traumas. Clinic, treatment. Epilepsy, epileptic psychoses, peculiarities of mental and personal disturbances at epilepsy. Clinic, course, therapy questions.

Psychoses owing to somatic disturbances, peculiarities of course and appearance. Radiation sickness. Clinic, treatment. Mental deficiency. Kinds of mental deficiency.

39. Program on Radiological Diagnostics and Radiological Therapy

General questions of radiation diagnostics: types of radiation, used in diagnostics. Principles of antiradial defense and labour protection measures. Regulation of radial diagnostic researches. Computer processing of medical images.

Methods of radial diagnostics.

Roentgenological method (roentgenoscopy, radiography, fluorography, linear tomography, angiography, etc.). Artificial contrast study.

Roentgenological computer tomography (principle of getting the image, one- and two-dimensional echography, Doppler graphy, visualization of organs and tissues, priorities of usage).

Radionuclide researches (radiopharmaceutic drugs, radioisotope diagnostic laboratory, methods of radionuclide research).

Magnetic resonance imaging in diagnostics (ways of usage in diagnostics, peculiarities of images of organs and tissues, magnetic resonance spectroscopy).

Medical thermo diagnostics (principles of the method and indications for usage, contact fluid crystalline thermo graphy, distant infrared thermo graphy, etc.).

Interventional radiology (roentgenoendovascular intervention, medical manipulations on abdominal and thoracic cavities, retroperitoneal space under the control of different types of radial images).

Paracentesis of organs and pathological tissues under the control of various types of radial images.

Principles of radio immunological researches.

Complex radial diagnostics of diseases and injures of different organs and tissues. This part of the subject deals with the problems of radial anatomy and the picture of widely spread lungs, heart, vascular, esophagus, stomach, rectum, duodenum, small intestine, large intestine, liver, pancreatic gland, bile secretion ways, kidneys, urinary system, locomotor system, endocrinology system diseases. Usage of radial diagnostics in neurology, otorhinolaryngology, ophthalmology, stomatology and maxillofacial surgery. Great attention is paid to the questions of emergent radial diagnostics.

40. Program on Otorhinolaryngology

The purpose of teaching the subject

Otorhinolaryngology is a special clinical discipline, aiming at studying morphologic-physiological peculiarities and pathology of upper respiratory passages and ear. The name of the subject comes from the Greek words meaning otos (ear), rhinos (nose), larynxos (throat). Due to the first letters of these words there is abbreviation – ORL or (sounds better) LOR.

Ear and upper respiratory passages are the first to be subjected to the influence of environmental factors: noise, vibration, ion radiation, dust, various chemical compounds, angular and straight acceleration. In many cases pathogenic factors exceed accessible norms. LOR organs are often affected at acute and chronic diseases, causing development of respiratory passages pathology and steady disorder of hearing and vestibular functions, which is followed by continuous disturbance of patient's working ability. LOR organs diseases often lead to damage of various organs and organism systems. Everything enumerated makes clear necessity of studying morphological-physiological peculiarities and LOR organs pathology by the students of different faculties of medical universities.

Otorhinolaryngology pays much attention to the questions of clinical anatomy and physiology, as in the LOR organs the majority of analyzers is concentrated. First of all this is hearing analyzer playing an important role in the process of learning the surrounding world, an analyzer with the help of which speech is formed, which makes the basis of the second signaling system activity. Besides, vestibular analyzer is a main link in the system of distance-sight reality receiving and providing equilibrium function, and also there are smell and taste analyzers. In the mucous membrane of the respiratory passages there are a lot of different receptors – mechano-, thermo- and a number of others, due to which reflexive influence on other organs and body systems takes place. In the genesis of a number of diseases, connected with nose and throat pathology, great significance is given to nervous-reflexive effects.

Otorhinolaryngology takes a special place among other medical subjects, which is first of all determined by the frequency of respiratory passages and ear affect: LOR diseases make up to 15% complaints to the medical institutions. They can cause development of serious life-threatening complications – otogenic and renogenic meningitis, brain abscess, intracranial sinuses thrombosis, sepsis.

Some otorhinolaryngological diseases have great social significance because they lead to deafness and chronic vestibular dysfunction and other complications.

Problems of studying otorhinolaryngology.

Main problems of teaching otorhinolaryngology are:

Explain the students instance of studying LOR organs pathology, necessity of quick finding and treatment ear, nose and throat diseases for prophylaxis of general disorders and population sanitation; principles and methods of dispensary work.

Teach the students: peculiarities of endoscopic methods of studying LOR organs, methodics of hearing and vestibular analyzers, smell functional research; show data of the results of given investigations for determination of central nervous system pathology.

Provide students with knowledge in etiology, pathogenesis, clinical picture, diagnostic, prophylaxis and treatment of frequently met LOR diseases, having social significance, causing attendant diseases or complications in the body.

Teach the students practical skills and methods of quick helping at bleedings, traumas, acute larynx stenoses, foreign substances and acute diseases of LOR organs.

While studying different diseases etiology and pathogenesis the significance of hereditary-constitutional factors from the positions of present scientific theories are explained, special attention is paid to the role of outer factors- professional, social. At the same time those attainments in prophylaxis of separate LOR diseases, which have been the result of social developments and progress of science and technique in the country and in the world are emphasized and visually demonstrated.

Enlightening of the main, selected otorhinolaryngology divisions in the lectures course has a problematic character, is explained deeper and wider than in the other exercise-books, straggling from speciality development.

The essence of various LOR organs diseases is shown in biological, physiological and pathophysiological aspects. Brief historical survey is given at the same time on each question, success and achievements of national science and practice in the given problems are emphasized.

In the preliminary course division students master endoscopic and functional methods of ear, nose, throat and larynx research. Mastering of these methods requires at the same time deep revision of anatomical and functional LOR organs peculiarities.

While studying clinical part special attention is paid to most frequently met LOR organs diseases. Attention is paid to the diseases which often cause function change of other organs and organ systems (purulent inflammations of the middle ear, chronic tonsillitis and others), leading to partial or full invalidity. In this case students come to know modern methods and diagnostics, bases of differentiated diagnosis and peculiarities of special methods of treatment. Special attention is given to tonsillitis problem, LOR oncology, regional pathology (scleroma), otiatry, professional diseases, LOR organs traumas: industrial, sport and others, prophylaxis of these diseases and injuries, and also questions of labour expertise, determination of temporary and steady labour disability, professional selection, employment. While working at the in-patient department students master various specialized manipulations, get acquainted with the work organization of operational and dressing departments, and also with the methods of work of the most typical operations.

50% of studying course is given to work in the polyclinic, where students perform ambulatory patients reception under the supervision of a teacher, master the simplest

diagnostic and medical manipulations (the list of them is given at the chair), get to know the questions of determination labour ability, professional selection.

While studying the course of otorhinolaryngology students are on service in LOR-stationery as doctor's assistants.

41. Program on Infectious Diseases

Place and significance of infectious diseases in contemporary pathology. Role of general practitioner in diagnostics, treatment, preventing of ID. The main functions of consulting center in polyclinics. Rules and peculiarities of patients' investigation. The main principles of diagnostics and treatment. Structure of infectious hospitals and departments. Techniques of private safety.

Epidemic process and its essence. Direction and organization of the very first antiepidemic measures for infectious patients.

Peculiarities of patients' treating and filling in the case history. Disinfection, desinsection, deratization

Infectious service. Rules of infectious patients hospitalization. Device and regimen of infectious diseases hospitals.

Infectious illnesses

Typhoid. Paratyphoids A and B.

Dysentery. Cholera.

Virus and bacterial gastroenteritises.

Amebiasis. Alimentary toxoinfections. Botulism. Iersinioz. Intestinal iersinioz.

Pseudotuberculosis. Virus hepatitises A and E. Enterovirus infection.

Salmonellosis. Intrahospital salmonellosis. Brucellosis.

Helminthiases. Trichinellosis.

Influenza. Paragrippe. Adenoviral infection. Raspiration-syncytial. rhinovirus infection.

Meningococcal infection.

Ornithosis.

Angina, differential diagnosis with diphtheria.

Infectious mononucleosis.

Legionellez.

Herpetic infection. Rickettsioses.

Epidemic typhoid and Brill-Zinsser illness.

Q fever. Malaria. Plague. Tularemia. Hemorrhagic fevers.

Borreliosis. Typhoid returnable epidemic (pediculous)

Vernal encephalitis. Virus hepatitis B, D, C.

Erysipelas. Sepsis. malignant ulcer. Tetanus.

Aphthous fever.

Definitions. Prevalence. Etiology. Epidemiology. Pathogeny. Clinic. Diagnostics. Differential diagnosis. Treatment. Prophylaxis

42. Program on Forensic Medicine

Aim of discipline studying:

The main purpose of studying the subject “Forensic medicine” is training of a general practitioner for carrying out duties of a medico-legal expert for judicial – inquiry organs and solving health service problems on further quality increase of medical-preventive help to the population.

Tasks of subject studying:

Forensic medicine studies questions, touching activities of various outer factors effecting the human organism and their judicial-inquiry diagnostic; level determination of bodily injuries burden; statement of death limitation, life injuries, person’s identification according to his steps and a number of other questions arising in legal practice.

The problems while studying forensic medicine are students subjoining to amendment drafting of scientific bases and methods of research in all spheres of the subject.

Students must also study:

- laws aimed at protection of a person’s immunity in Belarus;
- rights, duties and responsibility of medical workers for professional delinquencies, main laws, regulating the work of health workers.

Organization-methodic instructions:

Lecture course of forensic medicine must show the latest scientific data and methodological directivity of the main forensic medicine divisions. Lectures must be accompanied by evident examples from the medico-legal practice and must be followed by demonstration of instructional gratuities with the help of technical devices. Method of carrying out every class must include basic knowledge control on test questions, stage of knowledge correction, self-directed practical task fulfillment by the students, knowledge check of independent work (stage control) and final level.

Lectures

Introductory lecture. Notion of forensic medicine and forensic medical examination. Brief information from the history of forensic medicine development. Organization and structure of State service forensic medical examinations of Belarus.

General questions about medico-legal traumatology.

Road accident.

Forensic medical examination of gunshot wounds.

Injuries and death from effect of high and low temperatures, electricity, other physical factors.

Forensic medical examination of mechanical asphyxia.

Forensic medical examination of injuries and deaths from the influence of poisoning substances.

Dying and death. Corpse phenomena. Corpse examination at the point of detection.

Forensic medical examination on the cases of medical workers delinquency.

Practical and self-directed classes

Introductory class. Forensic medical examination of injuries by blunt and sharp objects.

Demonstrational and independent corpse examination, examination of an infant corpse. Corpse changes. Paper work.

Expertise of victims, suspects, accused and other people. Expertise of sex conditions. Making of “professional conclusion”.

Expertise of road accident, gunshot injuries.

Expertise of injuries and death from acute anoxaemia, from affect of outermost temperatures and other physical factors.

Expertise of poisonings.

Expertise of exhibits of biological origin.

Expertise on the cases about professional and professional-official law violations of medical staff.

43. Program on Epidemiology

Lectures

Epidemiology in contemporary structure of medical education. Subject, aims, goals and tasks of epidemiology of communicable diseases. Epidemic process and its peculiarities.

Organization of primary anti-epidemic measures, realized by the physician. Evaluation of epidemiologic situation in certain region.

Theoretical and practical aspects of immunoprophylaxis of communicable diseases: definitions of susceptibility and resistance to pathogenic microorganisms. Immunity, its types and factors, determining its strength and duration. Vaccine-controlled diseases. Types of vaccines, its characteristics and methods of application. Indications for immunoprophylaxis (routine and urgent). National calendar of vaccination. Evaluation of efficacy of vaccination, possible complications. Indications for urgent immunoprophylaxis. Other methods of inducing of invulnerability towards pathogenic microorganisms: application of bacteriophages, urgent medicamental prevention.

Practical classes

Manifestations and dissemination of communicable diseases among humans - epidemic process, its characteristics, structure and regularities. Direction and organization of antiepidemic measures on disclosure of infectious patients. Measures undertaken for elimination of the source of infection.

Disinfection, disinsection, deratization.

Immunoprophylaxis of infectious diseases. Usage of bacteriophages and means for urgent prophylaxis (this class is held on the basis of infectious diseases department of polyclinic).

Organization of primary antiepidemic measures on disclosure of communicable diseases, nosocomial and extremely dangerous infections and while working in emergent situations (this class is held at regional sanitary-epidemiological station).

44. Program on Health Protection and Public Health Economics and Administration

Public health and health care system as branch of science and subject of teaching. Public health and methods of its research. Statistics, its significance for theory and practice of Health care system.

Organization of statistical research of public health. Methods of standardization. Graphic reflection of statistic research of population, its steps. Graphic plotting in statistics. Parametrical methods of an assessment of statistical research reliability of special and standardized parameters. Direct method of standardization. Dynamic series, their use for characteristic of population health.

Demography. Its medic-social aspects. Procedure of demographic processes study. Statistics of children's death. Process of population reproduction in different countries. Morbidity, its types, methods of research, significance in doctors' activities and health care subdivisions. Methods of studying and valuation of physical development. Trends of demography process changing in Belarus and other countries. Epidemiology. Significance of

methods of disease research for practical medicine. Methods and ways of information maintenance of medical- hygiene knowledge. Propaganda of healthy way of life.

State social insurance and social ensuring. Medical findings of temporary disability, its aims, functions.

Medic-social findings and rehabilitation. Organization of temporary invalidity examination. Organization of proof loss

Preventive principle in health care system. Dispensary system, its types. Organization of out-door patients' help.

Organization of hospital, emergent medical help.

Health care of mother and child. Organization of gynecological help. Medical-preventive help to children and teenagers.

Features of rendering of the treatment-and prophylactic help by the workers of the industrial plants and private enterprises. Medic-sanitary division, aims, structure, functions. System of health care of rural population.

Valuation of medical work of single doctors and organizations upon the final result.

National health care systems and modern trends of development. Laws in health care system.

Medical findings of labor disability.

Medical statistics and modern methods of measuring of public health. Ways of development.

Economy, planning, finances in health care system in modern conditions.

45. Program on Orthodontics

Facial aesthetics. The main concepts of norm and pathology in Orthodontics. Classification of dentofacial anomalies. Research methods in Orthodontics. Orthodontical diagnosis. Methods of treatment of dentofacial anomalies. Instrumental method. Types of orthodontical devices, technologies of production. Rehabilitation of children with clefts in the maxillofacial region. Prosthetic teeth, alveolar bone and jaw in childhood. Control and management of the space in the dentition in the period of mixed bite. Principles of usage of modern nonremovable orthodontical devices for correction of dentofacial anomalies. Stages of treatment of bite anomalies with the help of multibonding system. New methods of diagnostics and treatment in Orthodontics.

The graduate must know:

- methods of dentofacial anomalies diagnostics, classification of orthodontical devices, principles of orthodontical devices construction;
- the main indications for using methods of radial diagnostics in orthodontics;

- preventive methods in orthodontics;
- principles of dentofacial anomalies treatment during the periods of bite formation;
- medical tactics of rehabilitation children with clefts in the maxillofacial region, alveolar bone in different periods of bite formation;
- indications for teeth prosthetic;
- peculiarities of dentition formation in temporary, mixed and constant bite;

Main practical skills:

- organize working place of orthodontist according to the principles of ergonomics and safety and requirements of aseptic and antiseptic;
- keep medical records;
- evaluate definite features of patient's face with bite anomalies;
- get print of jaws, make models, perform the measurement of diagnostic jaw models;
- make clasp, vestibular arc, springs, basis one-jaw orthodontic appliance;
- use modern ways of dentofacial anomalies treatment;
- evaluate indications to conduct outpatient surgical procedures;
- organize rehabilitation of children with defects of maxillofacial region in different periods of bite formation.

46. Program on Dermatovenerology

Method of the observation of the skin patient. Primary and secondary elements of the skin. General principles of the therapy of the skin diseases.

Bacterial infections of the skin: pathogenesis, etiology, classification. Clinical peculiarities of the different forms of pyodermas: superficial and chronic folliculitis, sycosis, impetigo, staphylococcal scaled skin syndrom. Pyoderma gangrenosum. Principles of general and topical treatment of bacterial infections of the skin, prophylaxis.

Scabies: etiologic agent, transmission, clinical forms, complications. Tuberculosis of the skin. Clinical picture of the main forms of the TB of the skin: lupus vulgaris, scrofuloderma, TB verrucosa, papulo-necrotic TB: diagnosis, treatment, prophylaxis.

Leprosy: etiology, transmission, classification, clinical forms, diagnosis, treatment. Pediculosis: epidemiology, treatment, prophylaxis.

Dermatomycoses. Biology of dermatofites. Classification. Laboratory diagnosis of the fungi infections (microscopy, cultural method). Tinea versicolor: pathogenesis, clinical features, diagnosis, treatment. Erythrasma: pathogenesis, clinical features, diagnosis, treatment.

Tinea cruris: pathogenesis, clinical features, diagnosis, treatment. Tinea pedis: pathogenesis, clinical features, clinical forms, diagnosis, treatment. Tineas caused by Trichophyton rubrum. Candidiasis of the skin, nails, periungual area: pathogenesis, clinical features, diagnosis, treatment.

Tinea capitis caused by Microsporum and Trichophyton species: pathogenesis, clinical features, forms, diagnosis, treatment. Tinea favus: pathogenesis, clinical features, diagnosis, treatment.

Laboratory diagnosis of tinea capitis. Treatment of tinea capitis.

Antifungal drugs (griseofulvin, ketokonazole, itraconazole, terbinafine). Topical antifungal agents. Prophylaxis of fungi infections.

Viral infections of the skin. Molluscum contagiosum, warts, papillomas, herpes simplex, herpes zoster: pathogenesis, clinical features, diagnosis, treatment.

Contact and allergic dermatitis: pathogenesis, clinical features, forms, diagnosis, treatment. Toxiderma: pathogenesis, clinical features, diagnosis, treatment. Stevens Jonson syndrom and Layell syndrom. Allergic vasculitis.

Eczema: pathogenesis, clinical features, forms, diagnostics, treatment.

Itch as a symptom of the skin diseases and as a defined disease: ethiology, secondary signes, localisation, treatment. Urticaria, oedema Quincke, prurigo, lichen simplex: pathogenesis, clinical features, forms, diagnosis, treatment, prophylaxis of relapses.

Professional skin diseases: contact dermatitis, allergic professional dermatitis, professional folliculitis, professional papillomas and hyrkeratosis, photodermatosis, candidiasis: pathogenesis, clinical features, diagnosis, treatment.

Psoriasis: pathogenesis, clinical features, main clinical forms, diagnosis, treatment. Arthropathic and erythrodermic forms of psoriasis. Lichen planus: pathogenesis, clinical features, diagnosis, treatment.

Pemphigus vulgaris: pathogenesis, clinical features, diagnostics, treatment. Pemphigus foliaceus and seborrheal. Dermatitis herpetiformis Duhring: pathogenesis, clinical features, diagnosis, treatment.

Lupus erythematosus: pathogenesis, clinical features, diagnosis, treatment. Systemic lupus erythematosus. Scleroderma: pathogenesis, clinical features, diagnosis, treatment.

Seborrhoea, seborrhoeic dermatitis: pathogenesis, clinical features, diagnosis, treatment. Acne, seborroaic alopecia, rosacea: pathogenesis, clinical features, diagnosis, treatment. Alopecia areata. Pityriasis rosea.

Lymphomas of the skin: pathogenesis, clinical features, diagnosis, treatment. Sarcoma Caposi: pathogenesis, clinical features, diagnosis, treatment. Skin signes of HIV infection: fungi infections, viral infections, bacterial infections, seborrhoiec dermatitis.

Genetic dermatoses: ichthyosis, keratodermias, bullous epydermolis: pathogenesis, clinical features, diagnosis, treatment.

Method of the observation of the venereological patient. Primary period of syphilis. Clinics of the hard chancre, regional lymphadenitis. Complications of the hard chancre. Atypical forms of chancre. Laboratory diagnostics of the primary period of the syphilis (microscopy of Treponema pallidum, express analysis, RW, RIF, PCR).

Secondary period of syphilis. Macular syphilid, papular syphilid, pustular syphilid, alopecia in patients with syphilis, leucoderma, syphilides of the mucous membranes. Differential diagnosis with skin diseases. Laboratory diagnosis of the secondary period of syphilis (microscopy of Treponema pallidum, express analysis, RW, RIF, PCR).

The third period of syphilis: gummatous syphilid, tubercular syphilid. Gumms of the nose, tongue, pharynx. Syphilitical osteoarthritis, synovitis, osteoperiostitis. Syphilis hereditaria. Methods of treatment of syphilis.

Hemorrhage in men. Method of the observation of complicated and non complicated hemorrhage. Microscopy and cultural diagnostics. Trichomoniasis: diagnosis, complications, treatment.

Computer test in dermatovenereology. Chlamydiosis, ureoplasmosis, candidiasis of the urogenital tract: clinical picture, diagnosis, treatment.

47. Program on Traumatology and Orthopedics

Lectures

Introduction in traumatology and orthopedics. History of development. Modern progress. Classification of damages and their rehabilitation.

Contemporary principles and methods of treating of bones fractures and dislocations. Regeneration.

Injuries and hand diseases.

Injuries of spinal column.

Bones tumors .

Peculiarities of traumatology and field surgery. Medical evacuation.

Gunshot wounds.

Shock. Bleeding. Hemorrhage.

Thermal injuries.

Practical classes

Peculiarities of investigation of patients with musculoskeletal system injuries and diseases. Classification and diagnosis. Traumatic disease.

Regeneration of bone material. Modern methods of treatment of bones injuries.

Injuries of thorax. Damages of shoulder, humeral joint. Shoulder dislocations.

Injuries and diseases of hand.

Injuries of pelvis and spinal column.

Femoral injures. Traumatic femoral dislocations.

Injures and diseases of knee joint.

Deforming arthrosis. Congenital and acquired feet deformations. Paralytic feet deformations.

Prosthetics in traumatology and orthopedics. Case history defense.

Gunshot wounds.

Organization of emergent assistance in the army and in emergency situations. Traumatic shock. Its treatment.

Bleeding. Giving blood transfusion in field surgery conditions.

Thermal injures and their treatment.

Wounds. Chest injures. Contusious skull injures. Treatment on the stages of medical evacuation.

Gunshot wounds and closed injures. Transport immobilization. Treatment while medical evacuation. Wound infection. Its prevention and treatment.

Wounds and closed injures of stomach, pelvis. Treatment.

Transport immobilization. Plastering technology. Injures and diseases of hand, forearm.

Injures of feet, knee joint, spinal column, and pelvis.

Injures of thorax. Principles and methods of treatment of open injures, emergent surgical wounds processing. Prosthetics.

Polytrauma. Traumatic shock. Ununited fracture. Posttraumatic osteomyelitis, treatment.

Deforming osteoarthritis and spinal column osteoarthritis. Congenital femoral dislocation.

Diagnostics, principles and methods of treatment and rehabilitation of traumatologic patients. Polytrauma. Classification. Emergency medical help.

Deforming arthrosis, feet deformation. Spinal column diseases.

Emergent medical help for traumatic shock, injures.

48. Program on Clinical Pharmacology

Clinical pharmacology, subject and tasks.

State regulation and clinical evaluation of drugs.

Clinical pharmacokinetics. Drug dosing regimens.

Clinical pharmacodynamics.

Drugs interaction.

Side effects of drugs.

Physiological and age aspects of clinical pharmacology.

Drugs acting on central nervous system: neuroleptics, antidepressants, neuro-metabolic stimulants, tranquilizers, hypnotics, sedatives, psychostimulators, anticonvulsants, antiparkinsonic drugs.

Drugs for general and local anesthesia: general anesthetics, local anesthetics, analgetics of central action, opioid analgetics, non-opioid analgetics.

Drugs acting on respiratory system: expectorants, anti-cough preparations, broncholytics, mast-cell stabilizers, H₁-histamine blockers, Glucocorticoids, drugs facilitating surfactant production, respiratory analeptics.

Clinical pharmacology of anti-allergic and immunotropic drugs. Drug allergy: drugs affecting immunological stage of allergy, drugs affecting pathochemical stage of allergy, drugs affecting pathophysiological stage of allergy, drug-induced anaphylactic shock.

Clinical pharmacology of cardiotoxic drugs: cardiac glycosides, non-glycoside cardiotoxic drugs.

Clinical pharmacology of drugs affecting tone of blood vessels: antihypertensive drugs, antianginal drugs, drugs used in hypotonic conditions.

Anti-arrhythmic preparations: drugs used in tachyarrhythmias (classes 1-4 preparations), drugs used in bradyarrhythmias, potassium and magnesium preparations.

Drugs affecting function of digestive system: drugs affecting appetite, emetic and anti-emetic preparations, drugs regulating gastric secretion, gastrocytoprotectors, drugs regulating gastrointestinal motility, drugs used in pancreatic diseases, choleretics, hepatoprotectors, cathartic drugs, anti-diarrhea preparations, drugs restoring gastro-intestinal microflora.

Clinical pharmacology of drugs affecting renal function: classification of diuretics, uricosuric drugs.

Clinical pharmacology of drugs affecting metabolism: vitamins, stimulators of metabolism of non-vitaminic nature, drugs affecting lipid exchange, microelements, antihypoxants.

Drugs affecting endocrine system: preparations of hypothalamic hormones, preparations of hormones of hypophysis, preparations of thyroid hormones and anti-thyroid drugs, preparations of parathyroid hormones and drugs affecting calcium exchange, hypoglycemic drugs, preparations of adrenal hormones and drugs affecting their production, preparations of sex hormones and drugs affecting their production, hormonal contraceptives, drugs for correction of climacteric syndrome.

Drugs used for correction of homeostasis: volume expanders, preparations for parenteral nutrition.

Drugs affecting uterus tone.

Drugs regulating hemostasis: anti-hemorrhagic preparations, anti-thrombotic drugs. Drugs used for treatment of anemia.

Antimicrobial drugs: antibiotics, sulphonamides, quinolones, nitrofurans, antiseptics.

Antifungal drugs.

Clinical pharmacology of anti-viral drugs.

Clinical pharmacology of anti-protozoal and anti-helminthic preparations: anti-protozoal agents, anti-malaria drugs, anti-helminthic drugs.

Clinical pharmacology of drugs for treatment of cancer: chemotherapeutic anticancer drugs, hormonally active preparations, anticancer antibiotics.

49. Program on Obstetrics and Gynecology

The aim of teaching Obstetrics.

The basic purpose of a course of obstetrics is studying of physiological and pathological postnatal period by the 4th year students, in volume necessary for the doctor of any speciality. Obstetrics is a branch of a clinical medicine, studying of it promotes formation of a clinical way of thinking of a doctor .

The purpose of studying the discipline.

The basic goals of training provide:

1. Mastering by methods of examination of the pregnant women, women in labor, puerperas, newborn.
2. Making use of knowledge , received during training, for conducting physiologically proceeding gestation, labors, postnatal period and period of newborn.
3. Skills in diagnostics and supervising of pathological y proceeding pregnancy, delivery , postnatal period and early neonatal periods.
4. Skill to render the emergent help at urgent conditions in obstetrical practice.
5. Development of knowledge and skills on prevention of development of a pathology during gestation, in labors and postnatal period (considering the risk groups) and mastering of rehabilitation methods (considering the experienced pathology).

On the basis of studying Obstetrics students are to know:

- Organization of an obstetrical aid;
- Physiological duration of a gestation, labors and postnatal period;
- Methods of diagnostics of pregnancy and estimation of a condition of a fetus;

Principles of conducting a physiological pregnancy, delivery, postnatal period and period of a newborn;

- Complications of pregnancy, labors, postnatal and the early neonatal periods, methods of their treatment and prevention;
- Emergent conditions in obstetrical practice and amount of the emergency aid.

On the basis of studying of obstetrics the student should be able carry out:

- External examination of the pregnant women, women in birth and puerpera;
- Bimanual internal research of the pregnant women and women in labor, rectal examination research;
- Obstetrical aid at normal labor;

- Autopsy of a fetal vesicle;
- First toilet of a newborn;
- Blood transfusion;
- Capture of smear from vagina, cervical canal, and urethra;
- Psychoprophylactic painless labor;
- Prophylactics of bleeding at the early postnatal period.

Lectures

The basic stages of development of Obstetrics and Gynecology, the contribution of the scientists of Byelorussia. Protection of maternity and childhood. Principles of organization of the obstetrical and gynecological aid in the republic of Belarus.

Fertilisation, stages of the intrauterine development of a fetus, critical periods, influence of a pathogenous factors onto a fetus.

Changes in a female organism during gestation. The causes of beginning the labor

Perinatology as science. Physiology and pathology of fetoplacental system. Hypoxia and delay of interuterine development of a fetus.

Clinical current and conducting of delivery.

Incompetent and prolonged pregnancy.

.Immunologic incompatibility between mother and fetus.

Toxemia of the pregnant women.

Cardio –Vascular diseases and pregnancy.

Pregnancy and diseases of kidneys.

Abnormal labor activity.

Contracted pelvis and other abnormalities of labor pathways.

Bleedings during gestation and in labor.

Bleedings in afterbirth and early postnatal periods. Hemorrhagic shock. DIS-syndrom in obstetrics.

Obstetrical traumas (of a mother and a fetus).

Cesarian section in modern obstetrics. Methods of anesthesia

Postnatal period and its complications.

Practical classes

Structure and organization of work of a maternity hospital. Bony pelvis, fundus of pelvis. A fetus as an object of labor. Methods of obstetrical examination.

duration of a class

Diagnostics of pregnancy. Hygiene and dietetics. Psychoprophylactic preparation of pregnant women for labor. (Female dispensary).

duration of a class.

Current and conducting the first period of labor. Anesthesia of labor. Estimating of intrauterine condition of a fetus duration of a class.

The biomechanism of labor at bending presentations of the head. Duration of a class.

Current and conducting of the afterbirth period and early postnatal period.

Anomalies of labor activity. Obstetrical operative delivery (Cesarean section, forceps delivery nipper, vacuum -extraction of a fetus).

Pelvic presentations of a fetus and abnormal presentations of a fetus. Female dispensary.

Incompetent gestation and prolonged gestation . Multiple pregnancy.

Basic problems of perinatology. Fetoplacental insufficiency. Hypoxia, delay of intrauterine development of a fetus.

Toxemia of the first and the second half of gestation.

Pregnancy and extragenital pathology. Female dispensary.

Bleedings at gestation. Presentation of placenta, ablatio placentae of a normally located placenta

Bleedings at labor and early postnatal period. Hamorrhagic shock. The emergency aid.

The specialized aid in a female dispensary. Admitting into a hospital. Risk groups. Consulting "Family and marriage". The medico-genetic aid. Female dispensary.

Contracted pelvis. Obstetrical traumas.

Pathology of postnatal period. Fetus-destroying operations.

The aim of teaching Gynecology

The main purpose of the course on Gynecology and Obstetrics is the studying of physiological and pathological processes occurring in an organism of a woman ,and caused by her anatomical

and physiological features, and also methods of diagnostics, treatment and prevention of the diseases of female in a volume, necessary to the doctors of all specialities. Gynecology is a branch of a clinical medicine, the studying of it promotes formation of the doctor.

The purpose of studying the discipline.

On the basis of study of Gynecology the students should know:

- Clinical symptoms of gynecologic diseases;
- Methods of examinations, allowing to make a diagnosis;
- Basic principles of treatment of the patients with gynecological pathology, methods of preventive maintenance and rehabilitation;
- Problems of planning and modern methods of contraception;
- Clinical manifestations of urgent states in gynecological practice (bleeding, twisting of pedicular tumor, necrosis of the myoma node, pelvioperitonitis), tactics of the doctor and volume of rendering of the emergency help. On the basis of study gynecology the student should be able to execute:
 - Examination by means of gynecological retractors;
 - Bimanual gynecological investigation;
 - Rectum investigation;
 - Capture of smear from a cervical canal, urethra, and vault of vagina;
 - Vaginal baths, injecting of a tampon with medicinal substance into a vagina;
 - Removal of sutures of the patients after operation;
 - Curettage of a womb at an incomplete abortion.

Lectures

Neurohumoral regulation of menstrual function. The causes and classification of disorders. Dysfunctional uterine bleeding.

Neuroendocrinal gynecological syndroms.

Inflammatory diseases of female genital system of specific and non-specific etiology.

The urgent help in gynecology (extrauterine pregnancy, incomplete abortion, twisting pedicular tumor etc.).

Benign tumors of female genital organs. fibroma, myoma, lipoma of a vagin. Uterine myoma. Etiology, pathogenesis, clinical manifestations, diagnostics, methods of treatment. Cysts and cystomas of ovaries.

Background, precancerous diseases and malignant tumors in getitals.

Endometriosis.

Reproductive function of a woman and its regulation (sterility, abortion, planning of family, contraception).

Practical classes

Symptoms of gynecological diseases . Methods examination of gynecological patients. Menstrual cycle. Analysis of the circuit of a case history of a disease.

Amenohrea. Disfunctional uterine bleeding.

Inflammatory diseases of female genital system of specific and non-specific etiology

The organization of work in a female dispensary. Disparisation. Background and precancerous diseases of female genital system. Benign tumors of female genital system.

Malignant tumours of female genital system.

Endometriosis.

Preoperative and postoperative conducting of the gynecological patients. The emergent cases in gynecology.

Anomalies of development and situation of female genitals. A children gynecology.

50. Program on Neurology and Neurosurgery

General neurology

Neurology and neurosurgery in the system of clinical subjects. Course problems of neurology and neurosurgery. Structure and organization of neurologic and neursurgical help. Basic stages of neurology and neurosurgery development. Instrumental methods of research in neurology and neurosurgery. X-ray examination of the skull and the backbone. Echoencephaloscropy. Electroencephalography. Electroneuromyography. Cerebral angiography. Lumbar puncture and cerebrospinal liquid research. Myelography. Ventriculography. Monitoring of intracranial pressure. X-ray computer tomography. Magnet-resonant tomography. Positron-emissionary tomography. Ultrasound dopleurography. Endocranioscopy.

Structurally functional organization of the nervous system. Factors and mechanisms of primary and secondary nervous system damage. Symptoms and syndromes of nervous system affect.

Sensitive frustration and syndromes of sensitivity disturbance while affecting peripheral nerves, textures, spinal roots, segments of the spinal cord, the brain of the trunk, hemispheres.

Reflexes and their disturbances. Signs of the central and peripheral paralyses. Syndromes of motor disturbances while affecting hemispheres, the brain of the trunk, the spinal cord, roots and textures, peripheral nerves. Syndromes of affect of pallid and striar departments (parkinsonism, hyper kinetic syndrome). Signs of affecting cerebellum. Variants of ataxia (static, dynamic, cerebellic, sensitive, vestibular, cortex).

Syndromes of smell disturbances. Change of acute eyesight and visual limits during disturbances various parts of the visual analyzer. Changes of the eye bottom during brain diseases. Eye moving nerves (III, IV, VI) and look regulation. Disturbance of eye moving functions during the affect of various parts of the nervous system. Disturbance variants of trigeminal nerve functions. Functional disorder of the obverse nerve. Functional disturbances of various nerve types. Bulbar and pseudobulbar paralyses (diasartery, dysphony, reflexes of oral automatism). Alternating syndromes.

Structure and functional organization lumbico-reticular complex and the segmentary device of vegetative sphere. Syndromes of vegetative frustration during damage of various parts of the nervous system.

The structurally functional organization of the higher brain functions. Speech as the supreme function of the human nervous system, aphasy and its variants. Alexy, agraphy. Gnostic functions and agnosy variants. Praxis. Kinds of apraxia. Structural and functional memory provision. Amnesia and its types. Definition of consciousness and criteria of its estimation. Scale of conscious quantitative changes. Comas. Scale of Glasgow coma. Psychomotor excitation, delirium, twilight conscious obscure, demension, chronic vegetative condition.

Subdural, under net spaces, sinuses of the hard cerebral cortex. Secretion, circulation and reabsorption of cerebrospinal liquids. Characteristics of cerebrospinal liquids, types of changes. Meningeal syndrome. A syndrome of an intracranial hypertension.

Peculiarities of brain blood supply, mechanisms of automatic regulation of the cerebral blood flow. Spinal cord diameter blood supply.

Syndromes of the nervous system local affect. Front, parietal, temporal, occipital lobes. Affect of the calloused body, internal capsule, hypothalamic-hypophyseal regions, thalamic regions, regions of basal nuclei, cerebellum. Affect of the middle brain roof region, legs of a brain, bridge, elongated brain. Affect of various parts of the spinal cord. Affect of humeral texture. Affect of various nerves. Affect of lumbar texture. Affect of femoral, sciatic, nerves.

Principles of the nervous system functions research.

Private neurology

Meningitises: purulent, serous; bacterial, virus, fungoid; primary, secondary. Meningococcical meningitis. Meningitis caused by hemophilic stick, pneumococcal, staphylococcal. Otogenic meningitis. Enteroviral meningitis. Parotid meningitis. Complications of meningitises. Primary and post- or parainfectious encephalitis. Herpes encephalitis. Epidemic Economo encephalitis. Poliomyelitis. Polyomyelite-like diseases. Parainfectious

encephalomyelites. Postvaccine affects of the nervous system. Affect of the nervous system in case of flu. Neurologic signs of HIV-INFECTION. Affect of the nervous system at brucellosis. Affect of the nervous system at syphilis. Affect of the nervous system at toxoplasmosis, cysticercosis, echinococcosis.

Demyelinating diseases. Multiple sclerosis. Sharp multiple encephalomyelitis. Slow virus infections (Kreutzfeldt-Jacob's disease, etc.).

Polyneuropathies. Sharp inflammatory demyelinating polyradiculoneuropathy. Chronic inflammatory demyelinating polyradiculoneuropathy. Diphtheric polyoneuropathy. Diabetic polyoneuropathy. Alcoholic polyoneuropathy. Polyoneuropathy at poisonings by phosphororganic compounds. Neuralgia of trigeminal nerve. Neuropathy of front nerve. Neuropathy intercostal nerves. Herpetic radiculoganglioneuritis. Compression-ischemic neuropathies. Vertebro-gene root and reflex syndromes of the nervous system damage. Vertebro – gene radiculomyeloischemia. Complex therapy of vertebro-gene painful syndromes.

Sharp disturbances of the cerebral circulation. Changing disturbances of the cerebral circulation. Ischemic heart attacks. Hemorrhage heart attacks. Light heart attacks. Sharp hypertonic encephalopathy. Intensive and basic therapy of heart attacks. Therapy of ischemic and hemorrhage heart attacks. Progressive disturbances of cerebral circulation. Spinal circulation disturbances. Prophylaxis of cerebral circulation disturbances.

Vegetative dystonia syndrome. Vegetative crises. Hypothalamic syndrome. Headache. Alzheimer's disease. Parkinson's disease. Essential tremor. Torsionic dystonia. Small trochee. Hepatocerebral dystrophy. Spinocerebral degenerations – Friedrich's disease. Phakomatoses. Progressing muscular dystrophies. Myasthenia. Myasthenic crises. Myotonies. Paroxysmal myoplegia. Lateral amyotrophic sclerosis. Child's cerebral paralysis. Perinatal encephalopathy. Intracranial patrimonial trauma.

Disturbance of the nervous system at diabetes, endogene intoxications, botulism, ethyl alcohol intoxication. Poisoning with methyl alcohol, barbiturates, carbon oxide, mercury. Radiating disturbances of the nervous system. Electrotrauma, influence of a magnetic field, overheating.

Epilepsy and epileptic syndromes. Epileptic status.

Coma conditions, caused by disturbance of the nervous system. Principles of conducting patients in case of widespread urgent conditions at disturbances of the nervous system.

Neurosurgery

Principles of neurosurgical operations. Lumbar punctures. Puncture of the brain and ventricles. Drainage of the spinal subarachnoid spaces. Cranial trepanation (resection and boneplastic). Methods of bleedings cessation. Notions about microsurgical, stereotaxic, endoscopic and endovascular technologies in brain surgery. Laminectomy. Access to peripheral nerves, neurolysis.

Craniocerebral damages: brain concussion, bruises of brain, epidural, subdural and the intrabrain hematomas, pressed crises of a skull. Complications and consequences of craniocerebral traumas. Concussion, bruise and damage of the spinal cord.

Surgical treatment of neuralgic trigeminal nerve. Traumatic damage of humeral texture. Surgical treatment of neurologic signs of an osteochondrosis of a backbone.

Brain tumors. Tumors of spinal cord.

Principles and variants of surgical treatment of abnormalities (arterial and arterio-venous aneurysm) and occlusive damage of brain vessels. Surgical treatment of hemorrhage insults.

Brain abscesses. Spinal epiduritis. Surgical methods of epilepsy treatment.

Hydrocephaly. Craniocerebral and spinal hernias.

Tactics of conducting patients at widespread urgent neurosurgical conditions.

51. Program on Ophthalmology

Acquaintance with clinic, its traditions, deontology in ophthalmology.

Achievement of Byelorussian ophthalmology with conducting ophthalmologic centers.

Elements of clinical anatomy. Modern diagnostics of visual functions of pathology.

Research of central vision, field of vision, colour perception, pathological changes.

Clinical types of an eye refraction and disease of oculomotor device. Emmetropia, problem of myopia, myopia as anomaly of refraction and myopia as illness. Hypermetropia. Presbyopia. Astigmatism, correction of anomalies of refraction. Compatible and paralytic strabismus. Clinic, diagnostics, treatment.

Pathology of blepharons, conjunctiva and an eye plaintive device. methods of research of an eye forward part. (Blepharites, conjunctiva, dacryadenites, canaliculites, dacryocystites.)

Research by a method focal, biofocal illumination, biomicroscopy on slit lamp.

Pathology of cornea and sclera. out-patient reception of the patients with diseases of appendix device and forward part of an eye. (Keratites, cornea dystrophies, episclerites, sclerites. Etiopathogenesis, clinic, diagnostics, treatment).

Lens diseases. Objective methods of research of an eye back part. Research in permeable light, ophthalmoscopy. Supervision.

Diseases of vascular environment. (Uveites, iridocyclites, chorioretinites. Etiopathogenesis, clinic, diagnostics, treatment).

Glaucomas (primary, secondary, inherent). Classification of glaucomas. Early diagnostics, clinic, treatment. Acute attack of glaucoma. Urgent measures on cupping off an acute attack. Prophylaxis of blindness from a glaucoma.

Damages of vision organs. (Classification. Traumas of protective and appendix eye device).

Not penetrating and penetrating wounds, contusion of eyeball. Combustions and frostbites.

Sympathetic ophthalmia.

52. Program on Communal Stomatology

Community Stomatology is the science that studies epidemiology of dental diseases, society dental health, methods of prophylaxis community programs planning, stomatological care and public health providing as well as public programs effectiveness evaluation methods.

The purpose of the discipline is to forming systematic knowledge in the field of community stomatology and teaching methods of medical-preventive care scientific based planning appliance in practice.

The tasks of the discipline:

1. Methods of epidemiological investigations in stomatology and epidemiological investigation planning.
2. Tendencies of stomatological disease in the Republic of Belarus and in the world in the light of WHO's global aims as well as methods of caries prognosis.
3. Situational testing in stomatology, components, stages of testing.
4. Stages of dental diseases community prophylaxis planning, definition of primary prophylaxis measurable tasks. Criteria of community preventive programs effectiveness evaluation.
5. Main components of dental care long-term planning on communal level, monitoring and dental care quality assessment with the help of Belarusian and international criteria.

At the end of the course a student must be able:

1. To develop a plan of mass dental investigations in accordance with the condition of a proposed situational problem and to conduct epidemiological stomatological investigation.
2. To prognose caries on individual, group and communal levels and to analyze criogramms data.
3. To conduct situational analysis according to game data.
4. To develop a program of communal prevention basing on proposed data and to evaluate effectiveness of proposed communal preventive program.
5. To assess the quality of dental care on individual and communal levels with the help of Belarusian and international criteria of assessment and to assess the level of dental care on group and communal levels.

University component

53. Program on Physiotherapy in Stomatology and Maxillofacial Surgery

Introduction.

Definition of physiotherapy, brief information about its history. Physiotherapeutic help organization in Belarus. The most important trends in using physical factors in medicine (medical, rehabilitation, prophylactic, diagnostic). Main peculiarities and advantages of medicinal physical factors. Classification of physiotherapy means and methods. Rules of safety techniques while working with physiotherapeutic equipment.

Modern concepts about methods of physiological and medical effect of physical factors. Physical, physical-chemical and biological stages of their effect on the organism. Local, segmented and common reactions of the organism to physiotherapeutical effects, their interconnection.

Constant current and its medical-preventive usage.

Constant current physical-chemical bases and mechanisms of physiological and medical action on the organism. Methods of galvanization. Constant current dosage. Medicinal electrophoresis, general principles and the most important method peculiarities. Technique and methods of carrying out procedures. Concept of intracavity and intratissue electrophoresis, micro electrophoresis. Indications and contraindications.

Impulse electrotherapy.

Impulse electrotherapy, its concept, main advantages and dosage principles. Electro dream. Diodynamotherapy. Amplipulsetherapy. Interference therapy. Fluctuorization. Through-skin electrostimulation. Electrodiagnostics and electrostimulation.

High frequency electrotherapy.

General characteristics of high frequency electrotherapy methods. Warming and oscillatory components of high frequency factors action. Ultrasonotherapy. Darsonvalization. Inductothermy. Ultra high frequent therapy. Decimeter-wave centimeter-wave therapy (DMW- and CMW- therapy). Millimeter-wave therapy (MMW-therapy).

Magnetotherapy.

Biophysical principles of magnetotherapy. Magnetic field types (constant, changing, impulse). Physiological and medical action of magnetic fields. Franclinzation. Aeroionotherapy. Physiological and medical action of constant electric high tension field on the organism. Concept of aeroions and hydroaeroions. Peculiarities of positive and negative aero- and hydroaeroions action.

Ultrasound and its medical – preventive usage.

Concept of ultrasound therapy. Physical and biophysical method principles. Mechanism of physiological and medical ultrasound action. Ultraphonophoresis of medicinal substances. Mechanism of medical action, methodic of carrying out procedures, indications and contraindications.

Inhalation therapy.

Concept of aerosols, electroaerosoles, their general characteristics. Main ways of using aerosols in medicine (intrapulmonary, transpulmonary, extrapulmonary, parapulmonary). Mechanism of physiological and medical aerosol action. Types of inhalations (steamy, warming-humid, humid, oily, powder inhalations).

Treatment by light.

Physical and biophysical light characteristics, concept of light spectrum. Infrared and visible beams. Ultraviolet beams. UV-blood raying. Laser therapy. Concept of laser puncture and laser blood raying.

Treatment by heat General characteristics of medical-heating physical environments (treating mud (peloids) and peloid-like substances. Mud treatment. Mixed methodics of mud treatment (galvanic mud, DDT- and SMT-mud treatment, mud-inductothermy, pelophonotherapy)). Paraffin- and ozokerito-treatment. **Water treatment.**

Hydrotherapy. General method characteristics. Hydrotherapeutic procedures classification. Pouring, rubbing, wrapping. Curative showers: rainy, needle-like, dusty, circular, streamlike (Sharko shower, Scottish), fan-like, ascending, underwater, massage shower. Baths: plain, with fragrant and medical substances (pine-needles, mustard, turpentine) added, made of medicinal herbs and plants (valerian, with chamomile).

Balneotherapy. General method characteristic. Concept of mineral waters, their classification, main balneologic characteristics. Outer mineral waters application. Mineral (sulphide, sodium chloride, iodine bromide) and gas (carbon dioxide, oxygenic, pearl, nitric, radon) baths, methodics of their usage, indications and contraindications. "Dry" carbon dioxide baths. Underwater backbone stretching. Inner mineral waters usage. Classification of drinking mineral waters. Mineral water usage for stomach cleansing, duodenal drainage, intestine washing, inhalations.

Sanatorium-health resort treatment. Concept of health resort. General medical health resort factors. Health resort classification: climatic, balneologic, mud, mixed. Climatic therapy and climatic health resorts. Types of climatic therapy: aero therapy, heliotherapy, talassotherapy, speleotherapy. Main balneologic and mud health resorts.

Sanatorium - health resort help organization, main health resorts and health resort factors in Belarus.

Educational Practice

Program on Dental Technical Practice

The aim is acquaintance with organization of dental laboratory work in stomatological polyclinic. Getting practical skills in the sphere of laboratory techniques of dental prostheses manufacturing.

Practical Training

Program on Nursing Practice

Acquaintance with the organization of stomatological polyclinic work and the structure of organization of stomatological help to the population. Getting necessary skills of the nurse of dental office (preparation of stomatological stuff, sterilization of stomatological instruments and so on).

Program on Medical Clinical Practice

Structure and organization of medical and preventive work in dental polyclinic. Mastering skills of examining patients. Making the plan of laboratory and other additional necessary examinations, interpretation of data received, explanation of preliminary and final clinical diagnosis, conducting of differential diagnostics. Getting special skills and abilities of outpatient treatment of stomatological diseases, preparing medical documentation.