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.


   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.

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.


Russian and Byelorussian philosophy. Social, religious ipeculiarities.

**Philosophy conceptions of being.**

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


**Philosophic anthropology.**


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.


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.**


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.

   **Microeconomy.**

   **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.


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


4. Program on Sociology

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


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 “institutionalization”. Family as the most important social institute. Development of social institutions, society in Belarus.


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


5. Program on Politology


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 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 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 treatings of fact or object.

Morphology.

Word formation.
Elective courses

9. Program on Bases of Law and Human Rights


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.


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**


Vapor pressure and Raoult’s law. Boiling point elevation and freezing point depression. Cryometry and ebuliometry.

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.


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


Water autoionization. Water autoionization constant (Kw). 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.


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


**Complexes**


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


**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 fixed phase boundaries: solid - gas and solid - liquid (solution). Monomolecular and polymolecular adsorption. Lengmur’s and Freundlikh’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**


Purification of colloidal solutions. Filtration, dialysis, electrodialysis, 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.


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 (ρ = 1.2g/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 lyophobe colloids: colophoniums, 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).

Lyophobe 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 micell 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**


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


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


Stages of aminotransferase-catalyzed transamination reactions of amino acids.


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


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.

**Cellular level of living beings organization.**


**Ontogenetic level of living beings organization.**


**Heredity.**


**Inheritance regularities.**


**Changeability.**

Anthropogenesis.


Biology of development.


Population-typical level of living being organization.


Biospheric-biogeocenotic level of living being organization.


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 Zoom astigota, Srocodia, Sporozoa and Ciliata. Medical gelmintology, its problems. Epidemiological gelmint classification. Irritants of man’s and animals’ diseases from classes Trematoda,
Cestoidea and Nematoda. Gelmints parasitizing 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.**


### 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.**


**Methods of protein purification.**


**Enzymes. Structure and properties. Kinetics of enzymatic reactions.**


**Enzyme inhibition. Regulation of enzyme activity.**


**Medical enzymology.**


**Methods of estimation of protein metabolism.**


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.


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.


Metabolism of glycogen, fructose and galactose.

**Methods of carbohydrate metabolism estimation.**

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

**Biosynthesis of lipids.**

**Biochemistry of atherosclerosis.**

**Digestion of proteins, transamination and deamination of amino acids.**

**Amino acids metabolism. Urea cycle. Amino acids decarboxylation.**

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

**Methods of carbohydrates lipids and protein metabolism estimation.**
Colloquium “Metabolism of carbohydrate and lipids”.
Structure of nucleic acids. Metabolism of purine and pyrimidine nucleotides.
Translation. Regulation of gene expression. Mutations.


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


**Hormonal regulation of anabolic processes, growth and development.**


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


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


**Partial control of practical skills.**

**Seminar: Extracellular matrix. Muscle. Nerve tissue.**


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.


Information inquiry system of medical-biological data.


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.


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**


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.


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.**

Pharynx. Esophagus.
Stomach. Intestine.
Liver. Pancreas.
Abdomen and peritoneal cavity. X-ray- anatomy of the digestive tract.
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 (*telencefalon*): *corpus collosum*, *comissura cerebri anterior*, lateral ventricles, nuclei basales, internal capsule (*capsula interna*).


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, innerval 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.**


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 analiser.

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

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:


- Classification of materials used in manufacture of dental prosthesis and apparatus, filling cavities. Composition, properties and applications.

- Main technological processes used in manufacture of dental protheses 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.


- Aseptic and antiseptic in dentistry. Types of sterilization of dental instruments and tips.


- Cofferdam. Technique of cofferdam application.


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 1, II, III, IY, Y, YI 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.


2. Caries, pulpitis, periodontitis. Clinic, prevention, treatment principles.


4. Odontogenic inflammatory diseases of maxillofacial area.

5. Inflammatory processes of maxillofacial area: boils, lymphadenitis, sinusitis.


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 psychical 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 (Mutanovski) 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.


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 fascioplastic 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.


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


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 he abdominal cavity and pelvic cavity. Large and small intestines topography, peculiarities of their blood supply, 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

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.


**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), Matshuk’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, rode-shaped, filamentous, branched, etc.) Methods of microscopy.


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

- Morphology and characteristics of fungi.


Growth and reproduction of bacteria.

Bacterial pigments, their significance. Classification of pigments.


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


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

Chemotherapy. Classification of chemopreparations. Therapeutic ratio.


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.


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.


Special microbiology


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.


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.


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

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. diptheriae*. Pathogenesis and clinical findings in diphtheria.


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 pathogenic mycoplasmas. 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


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.


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


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


Prions and prion diseases.

23. **Program on Bases of Intellectual Property Management**


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**


25. **Program on Bases of Energy Saving**

The role of power engineering in the development of human society. World and republican energetic 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.


27. Program on Radiological and Ecological Medicine

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.


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


Radioecological consequences of Chernobyl disaster for Byelorusr. 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. Criterions of definition of nuclear events level. Actions in the conditions of accidental situation at the nuclear power station. Criterions 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 contest in the main food products. The main documents regulating work with the sources of ionizing irradiation.

28. Program on Pathological Anatomy


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:


Organs and lactiferous gland illnesses:

Dishormonal of illness. Sexual bodies and lactiferous gland tumours.

Illnesses of pregnancy and pastpregnancy period.
Illnesses of internal secretion:


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

Virus illnesses. Bacteria caused illnesses.

Inherent defects of development:

Pathology of prenatal and peranatal periods. Pathological anatomy of radiative defeats.

Pathomorphism and iatrogenics.

29. Program on Pathological Physiology

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

Genetic disorders.

Environmental pathology.


Local hemodynamic disorders. Hypoxia. Thrombosis.

Inflammation.


Pathophysiology of infectional process.

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

**Fever and hyperthermia.**


**Metabolic disorders.**


**Disturbances of body fluids and electrolytes.**

Water depletion and excess. Oedema. Hyponatremia, hypernatriemia: 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.**


**Neoplasia.**


Pathophysiology of emergency states.

**Stress.**

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

**Hematological disease.**


**Diseases of heart and blood vessels.**


**Respiratory pathophysiology**


**Digestive tract and hepatic pathophysiology.**


**Kidney pathophysiology.**


**Endocrinologic disorders.**

**Nervous system pathophysiology.**


**Aging and pathophysiology of elderly organism.**

### 30. Program on Pharmacology

**General principles of pharmacology**


**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 cholinolycitics)), 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 peptic ulcer, emetic and antiemetic drugs, choleretics, drugs affecting function of pancreas, drugs regulating intestinal motorics), uterine drugs, drugs affecting blood system (drugs affecting hemopoiesis), 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 syntetic antimicrobial preparations, antituberculosis preparations, antiviral preparations, antifungal drugs, anti-protozoal preparations, anti-helmintic drugs), drugs used for treatment of cancer, antiseptics and disinfectants, drugs interaction.

31. Program on Internal Diseases


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


Complications: a cardiogenic shock, infringements of a rhythm and conduction, a heart failure, early and serotonin 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.


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


Hemoblastoses


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.

Deforming osteoarthrosis, 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 polyarthrites, 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 syndrom.

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 syndrom. 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.


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).


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


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).


Autoimmune. Diagnostic criteria. Treatment. The forecast.

Hemocatheretic crisis, clinic, diagnostics, 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 lymphadenopatias (a lymphogranulomatosis, a sarcoidosis, a contagious mononucleosis, brucelloses, a lymphadenopathy at collagenesis).

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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.


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.

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 ample 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:

Thoracal wall and mammary glands. Mammary glands diseases:
Lungs pleura and mediastinums diseases:
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

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Thoracal and ventral aorta aneurysms
Aorta coarctation
Arterias atherosclerotic defeats
Thromboangitis.
Nonspecific aortoarteriitis.
Diabetic micro-muco- angiopatia
Arterial fibrinferments and embolisms
Diseases of veins of inferior extremities.
Thrombophlebites of inferior extremities.
Embolism of pulmonary arteria.
Postphlebitical set of symptoms.
Lymphatic system failure.
Diseases of members of digestion:
Esophagus diseases:
Inherent faults of development.
Achalasia carditis.
Esophagus diverticulums.
Corrosive burns and cicatrical 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-Weisa syndrome.
Stomach precancerous diseases (ventriculus).
Stomach(ventriculus) not epithelial tumours.
Stomach carcinoma.
Illnesses of operated stomach(ventriculus).
Intestine diseases:
Small intestine diseases.
Diverticulums.
Small intestine fistulas.
Small intestine tumours.
Cron Illness.
Appendicitis.
Acute appendicitis.
Appendicism.
Carcinoid of vermicular process.
Colon diseases.
Faults of development.
Chronic nonspecific ulcerous colitis.
Colon diverticulums.
Ischemic colitis.
Intestinal fistulas.
Nonmalignant tumours and polyposities.
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 polyposities 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.

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.
**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:

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, pulpits, 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;
- means and preparations for caries, tooth forming pathology, non-caries pathology of hard tooth tissues, tooth injuries, 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-caries 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 subperiostal 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;
- preprosthetic 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


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

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

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


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


Urgent help at drowning, suffocation, clinical death, acuter allergic reactions, snakes 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.


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

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.


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; symptomatics, 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.


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).


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.


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.


39. Program on Radiological Diagnostics and Radiological Therapy


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), laryngos (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 otorinolaryngological diseases have great social significance because they lead to deafness and chronic vestibular disfunction 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, parhogenesis, 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 illnesses

Typhoid. Paratyphoids A and B.
Dysentery. Cholera.
Virus and bacterial gastroenteritis.
Pseudotuberculosis. Virus hepatitises A and E. Enterovirus infection.
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 Brilla-Tsinsksera illness.


Borrelialiosis. Typhoid returnable epidemic (pediculous)

Vernal encephalitis. Virus hepatitis B,D,C.

Erysipelas. Sepsis. malignant ulcer. Tetanus.

Aphthous fever.


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


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.


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.


**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.


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.


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.


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

45. Program on 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.


Leprosy: etiology, transmission, classification, clinical forms, diagnosis, treatment.

Pediculosis: epidemiology, treatment, prophylaxis.


Laboratory diagnosis of tinea capitis. Treatment of tinea capitis.


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

Itch as a symptom of the skin diseases and as a defined disease: etiology, secondary signs, 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 hyperkeratosis, photodermatosis, candidiasis: pathogenesis, clinical features, diagnosis, treatment.


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).


47. Program on Traumatology and Orthopedics

Lectures

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

Injures and hand diseases.
Injures of spinal column.
Bones tumors.
Peculiarities of traumatology and field surgery. Medical evacuation.
Gunshot wounds.
Thermal injures.

Practical classes
Peculiarities of investigation of patients with musculoskeletal system injures and diseases. Classification and diagnosis. Traumatic disease.

Injures of thorax. Damages of shoulder, humeral joint. Shoulder dislocations.
Injures and diseases of hand.
Injures of pelvis and spinal column.
Femoral injures. Traumatic femoral dislocations.

Injures and diseases of knee joint.


Prosthetics in traumatology and orthopedics. Case history defense.

Gunshot wounds.


Bleeding. Giving blood transfusion in field surgery conditions.

Thermal injures and their 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.


Deforming osteoarthrosis and spinal column osteoarthrosis. Congenital femoral dislocation.


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 patophysiological stage of allergy, drug-induced anaphylactic shock.
Clinical pharmacology of cardiotonic drugs: cardiac glycosides, non-glycoside cardiotonic 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 antiemetic preparations, drugs regulating gastric secretion, gastrocytoprotectors, drugs regulating gastrointestinal motorics, 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-helmintic preparations: anti-protozoal agents, anti-malaria drugs, anti-helmintic 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.


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;
- ProphDYSylactics 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.


Obstetrical traumas (of a mother and a fetus).

Cesarian section in modern obstetrics. Methods of anesthesia

Postnatal period and its complications.
Practical classes


duration of a class

Diagnostics of pregnancy. Hygiene and dietetics. Psychoprophilactic 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 nippers, 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.


Toxemia of the first and the second half of gestation.

Pregnancy and extragenital pathology. Female dispensary.

Bleedings at gestation. Presentation of placenta, ablatio placenta of a normally located placenta


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. Disfunctional uterine bleeding.

Neuroendocrinial gynecological syndroms.

Inflammatory diseases of female genital system of specific and non-specific etiology.

The urgent help in gynecology (extraterune 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**


Amenohrea. Disfunstional uterine bleeding.

Inflammatory diseases of female genital system of specific and non-specific etiology.


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.

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**50. Program on Neurology and Neurosurgery**

**General neurology**


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).


Structure and functional organization lumbico-recticular complex and the segmentary device of vegetative sphere. Syndromes of vegetative frustration during damage of various parts of the nervous system.


Peculiarities of brain blood supply, mechanisms of automatic regulation of the cerebral blood flow. Spinal cord diameter blood supply.


Principles of the nervous system functions research.

Private neurology


Demielinizing diseases. Multiple sclerosis. Sharp multiple encephalomyelitis. Slow virus infections (Kreitzelfeld-Jacob's disease, etc.).


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


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.


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.


Pathology of blepharons, conjunctiva and an eye plaintive device. methods of research of an eye forward part. (Blepharites, conjuctiva, 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).


Diseases of vascular environment. (Uveites, iridocyclites, chorioretinites. Etiopathogenesis, clinic, diagnostics, treatment).

Damages of vision organs. (Classification. Traumas of protective and appendix eye device).

Not penetrating and penetrating wounds, contusion of eyeglobe. 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 applience 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 cariesis prognosing.
3. Situational testing in stomatology, components, stages of testing.
5. Main componenets of dental care long-term planning on communal level, monotoring and dental care qualiy assessment with the help of Belarusian and internetional 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 prgnose caries on individual, group and communal levels and to analize 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 nad 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.**


**Impulse electrotherapy.**


**High frequency electrotherapy.**


**Magnetotherapy.**


**Ultrasound and its medical – preventive usage.**


**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.**


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.